



Catalogue **3.0**



Made in Germany

www.kessel.com

KESSEL-Consultation and service

How to contact us

Our Service Centre will be happy to help if you have any questions related to the products or services which we offer. To contact us, please select one of the following options:

Sales department

Northern Europe + Far East Tel. +49 84 56 27-310

Eastern Europe + America Tel. +49 84 56 27-189

Southern Europe Tel. +49 84 56 27-210

Western Europe Tel. +49 84 56 27-246

Middle East Tel. +49 84 56 27-341

Australia + New Zealand Tel. +49 84 56 27-184

Mail: info@kessel.com Fax +49 84 56 27-188

Technical support

Tel. +49 84 56 27-208 or +49 84 56 27-320

Mail: expert@kessel.com Fax +49 84 56 27-188

After sales service

Tel. +49 84 56 27-462 Fax +49 84 56 27-173

Mail: aftersales@kessel.com

KESSEL-retail partners – products available immediately

Our retail partners sell and look after the most important KESSEL products.

Qualified specialists for sanitary installations or construction materials will be happy to provide their expert support and are sure to find a suitable drainage solution for you. In addition, well organised product presentations in retailers' showrooms provide detailed information about the different areas of application for drainage products.

To find a sales partner near you, visit the KESSEL website:

www.kessel.com/contact



The KESSEL-success story

Drainage re-defined

KESSEL provides innovative problem solutions for the drainage of lands and buildings, from the initial idea to the product through to global sales – one-stop shopping for top quality that impresses retailers, planners and fitters alike. Behind the Lenting think tank there are more than 450 employees representing the KESSEL brand and filling it with life.



Breakthrough milestones of the drainage industry

1972

Where it all began - the original clean-out was the basis for the **Staufix** backwater valve product line

1981

Entrance into the pump technology branch: **UNIVA-Pumpfix** - the first fully automated basement drain

1986

Launch into the Environmental Protection segment with the **UNIVA Grease and Starch separators**

1994

Market introduction of the **new Komfort line of modular polyethylene inspection chambers**

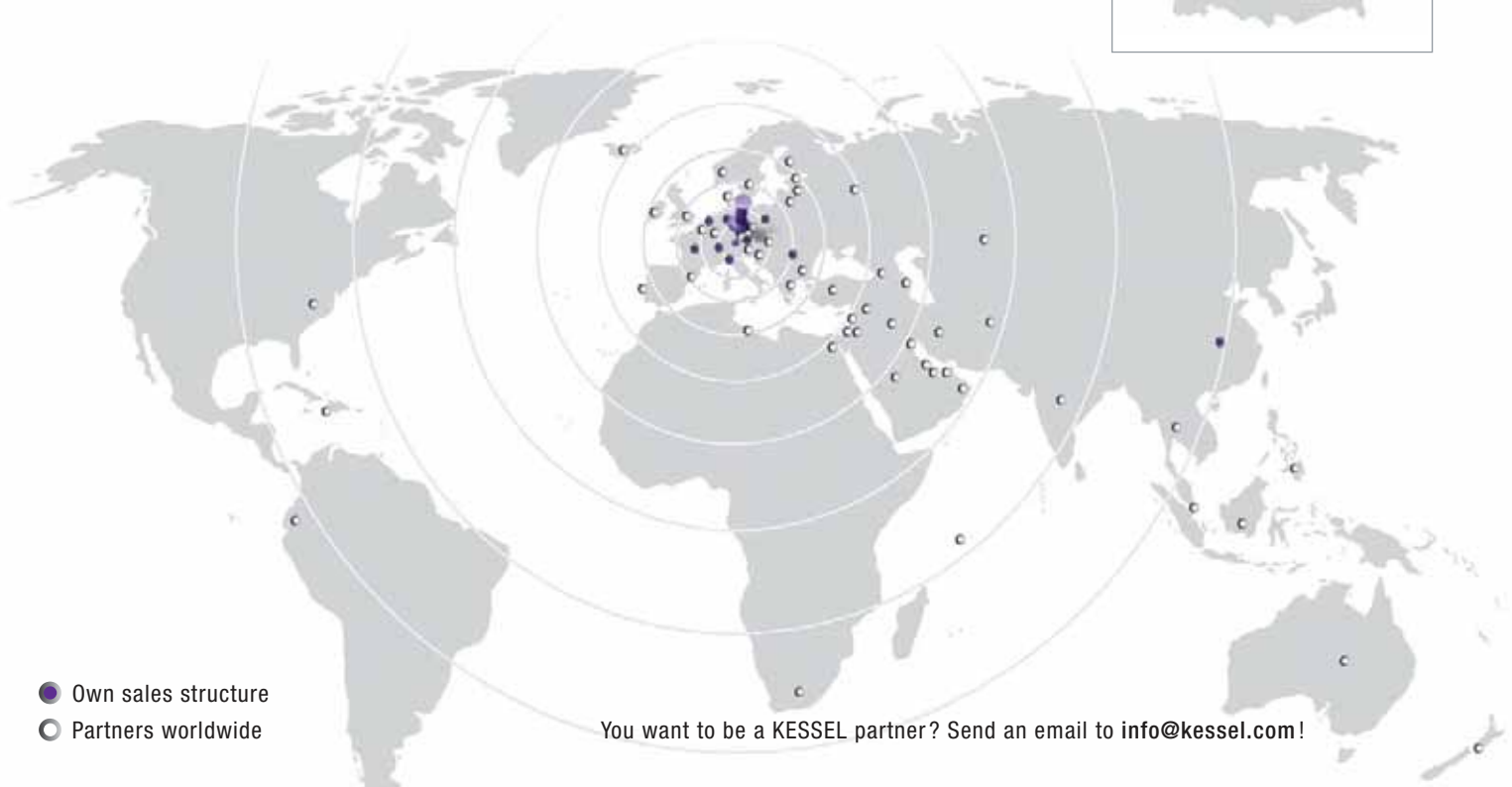


KESSEL – Worldwide sales and distribution

Your partner on 5 Continents

Multiple sales office throughout Europe as well as fully established distribution networks on four continents insure the availability of KESSEL products.

The KESSEL headquarter is situated in Lenting, Bavaria, Germany.



You want to be a KESSEL partner? Send an email to info@kessel.com!

2005

DESIGN PLUS –
Award winning bath-
room drain collection
with design covers

2007

Ecoguss –
the new composite
material - the best
alternative to cast iron

2011

World premiere of the
Ecolift- the alternative
to a standard lifting
station with gravity
sloped drainage

2013

Presentation of the new
Scada wall drain, unique
with LED lighting

2014

New grease separator
EasyClean
with functional design



KESSEL-Training and seminars, experience drainage technology close up

Customer-specific training - benefit from our know-how

No training needs are ever the same. Every company has different focuses for employee training and qualification. Depending on their objectives, companies will concentrate more on the sales of draining products or the technology. For this reason, we offer special tailor-made training contents. This training can take place at our training centre in Lenting, Germany or on your own premises. Just ask us about it!

 info@kessel.com



KESSEL-Customer Forum: World of drainage technology

Would you like to know where KESSEL products are installed and which drainage solutions we can offer you? In the world of drainage technology we present products in typical installation situations with multimedia support.



KESSEL-Experience drainage technology close up

KESSEL-House of practice: How drainage works

In the KESSEL house of practice you can experience how our products work. Genuine products are installed on the various floors. Transparent pipes show which paths the water takes during drainage.



KESSEL-Planning made easier

KESSEL offers a vast amount of tools and information on the internet to aid and simplify the engineer's daily drainage planning work load. Simply go to **www.kessel.com** to access the following information:

Quick Search Option

By entering an article number or search word you can find technical data and specifications of a product in question.

- Access CAD product drawings.

Use the "Product search" function on **kessel.com**:



- Access specification text
- Access installation and operation manuals
- Access product catalogue pages
- Access spare parts catalogue

Product Videos

All KESSEL product videos are available in the 'Service & Download' section on the **www.kessel.com** internet site. Additionally you can scan in the QR-Code displayed in this catalogue to directly view our product videos on your mobile phone.



"KESSELcompact" newsletter

Would you like to be kept up to date on the new developments and trends in the drainage industry? Then the KESSEL-Newsletter is perfect for you. We will keep you regularly up to date about new products and services.

Register in the 'Service & Download' section on the **www.kessel.com** internet site!



SmartSelect – simply makes planning faster



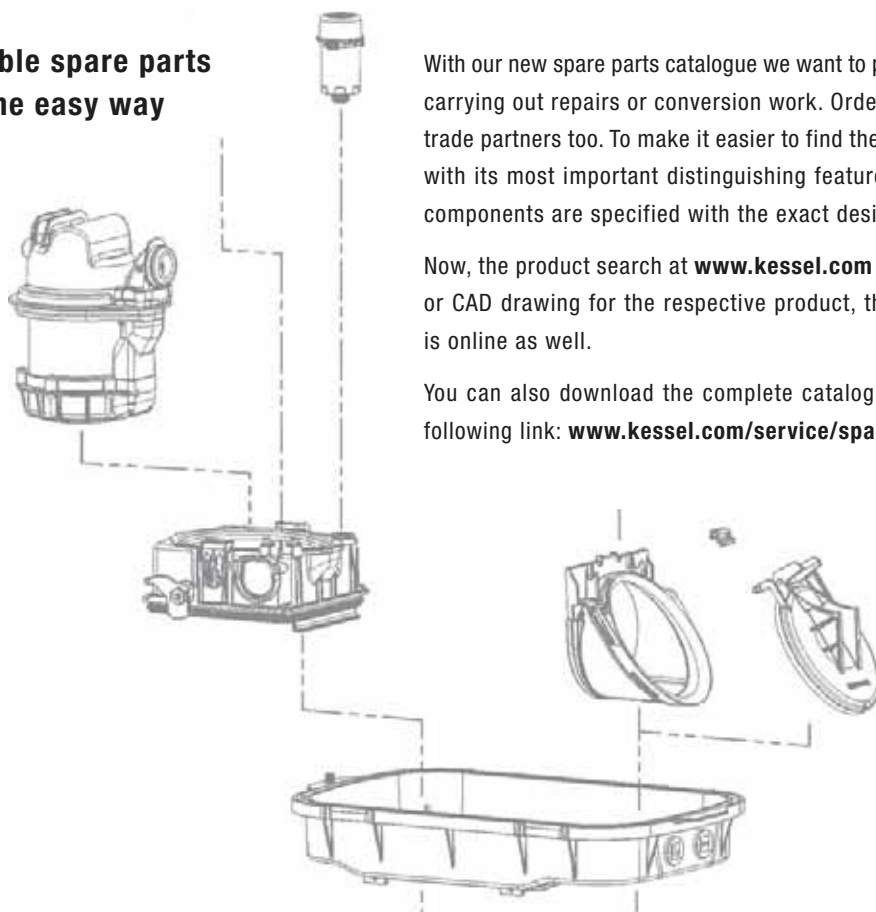
SmartSelect is an efficient tool for configuring, designing and calculating drainage solutions. It significantly reduces planning effort.

SmartSelect provides registered users with a project management program which can be used to request and edit saved projects. Registration at smartselect.kessel.de is free and takes only a few minutes!

- Lifting station selection program
- Grease separator selection program
- Floor drain water proofing selection program



Find suitable spare parts online – the easy way



With our new spare parts catalogue we want to provide even better support for craftsmen carrying out repairs or conversion work. Ordering spare parts will be even easier for trade partners too. To make it easier to find the right spare part, every product is listed with its most important distinguishing features and a 3D illustration. The individual components are specified with the exact designation and part number.

Now, the product search at www.kessel.com not only provides simply the data sheet or CAD drawing for the respective product, the corresponding spare parts overview is online as well.

You can also download the complete catalogue from the KESSEL website using the following link: www.kessel.com/service/spare-parts.html

Complete range for backwater protection, wastewater discharge, wastewater treatment for commercial, communal and private wastewater disposal



**KESSEL – the partner for planners,
specialist retailers and fitters**





Overview of test seals and quality marks / certification

Test seals / quality marks for KESSEL products

■ LGA design tested and monitored



A recognised independent testing institute ensures that the European standards and all further requirements are met.

■ SKZ test seal



The quality seal testifies that the tested products have successfully passed through the testing, monitoring and certification stages.

■ SEG type approval certificate BVS 11 ATEX E 040 X



Proof that a device complies with the ATEX product guideline 94/9/EC. For devices and protection systems for proper use in potentially explosive areas, e.g. pumping stations.

■ Ü-Mark



Compliance certificate for national or international building products

■ CE-Mark



Manufacturer's compliance certificate based on Guideline 93/42 EWG for European building products. National standards concerning installation and use must still be met.

■ Quality mark for high quality stainless steel



1.4301 or 1.4571 stainless steel meet all requirements for food production facilities and guarantee problem free functionality. KESSEL drain covers meet DIN 1253-1 requirements.

KESSEL is certified in the context of quality management

■ ISO 9001



9001 is quality management...

The ISO 9001 is an international standard which sets guidelines and standards which manufacturers must meet. It serves to ensure that customers get the quality they are expecting. The standard refers to quality and reliability of the products and services delivered and has been at the heart of process orientation within the KESSEL AG for years.

■ ISO 14001



14001 is environment management...

Sustainable business is an act of common sense and responsibility for the future. The forward-looking, voluntary and systematic integration of environmental aspects in entrepreneurial decisions plays an important role here. Standard ISO 14001 provides a globally accepted basic for setting up an environment management system and specifies the principles according to which KESSEL AG acts.

Product standards for draining technology

EN 124	Load classes for upper sections and covers for traffic areas	EN 752	Draining systems outside buildings
EN 1253	Drains for buildings with volatile liquid traps	EN 12056	Gravity drainage systems inside buildings
EN 877	Cast iron pipes and fittings their joints and accessories for the evacuation of water from buildings	EN 12566	Wastewater treatment systems Application, dimensioning and execution
EN 12666-1	Plastics piping systems for non-pressure underground drainage and sewerage - Polyethylene (PE)	EN 12050	Lifting stations for buildings Lifting stations for wastewater with sewage or without sewage
EN 1852-1	Plastics piping systems for non-pressure underground drainage and sewerage - Polypropylene (PP)	EN 13564	Backwater valves for buildings Requirements, testing methods, quality monitoring
EN 1451-1	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Polypropylene (PP)	EN 1825	Separator systems for greases Basic construction, function and testing principles, dimensioning and installation
EN 1519-1	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Polyethylene (PE)	EN 1401-1	Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized polyvinyl chloride (PVC-U)
EN 1566-1	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Chlorinated polyvinyl chloride (PVC-C)	EN 858	Separator systems for volatile liquids (oil and petrol) Basic construction, function and testing principles, choice of nominal size, installation, operation and maintenance





DIN 4109	Sound protection in high-rise buildings Requirements and proofs	DIN 4261	Wastewater treatment systems Application, dimensioning and execution
DIN 16961	Pipes and fittings made of thermoplastic materials with profiled walls and smooth inner walls	DIN 18195	Waterproofing of structures Protecting structures from moisture and water
DIN 1986-100	Draining systems on for buildings and land. In combination with EN 12056	DIN 1999-100	Separator systems for volatile liquids In combination with EN 858
DIN 1999-101	Separator systems for volatile liquids Increased requirements for biodiesel	DIN 4040-100	Separator systems for greases Requirements and operation of separator systems in combination with EN 1825

KESSEL - New products 2014

Creative barrier-free bathroom draining – *Scada wall drain*

NEW



- Four different design covers, with or without LED lighting.
Velvet red  Valley green 
Pacific blue  RGB 
- Lowest installation height 80 mm, ideal for new buildings and renovation work.
- Installation variants: wet and dry walling or installation board and wedge as shower board.

See page 174

- Powerful **Aqualift F XL** lifting stations in mono or duo version for commercial, communal and private use.
- Wide range of pumps from 1400 Watt to 5500 Watt for pumping wastewater with and without sewage.
- Including standard new control unit **Aqualift Comfort** (230 or 400 Volt) with user-friendly menu guidance in 6 languages on a multi-line display.

See page 74

Extension to the KESSEL range of pumps: *Aqualift F XL*



NEW

Covers made of stainless steel AISI 316L

NEW



- Drains with shallow bed covers and upper sections with grate covers made of stainless steel AISI 316L
- For aggressive media in hotels, clinics, swimming pools, spa centres, residential homes for the elderly and many other applications.

See pages 138 - 139

- Better cleaning thanks to wedge-shaped base.
- Less water consumption during cleaning and filling (up to 32 %).
- Shorter disposal times thanks to high-power disposal pump.
- Up to 40 % time saving.
- Optimum use of space (filling device integrated in the separator).
- Easy placement thanks to the curved tank shape, even where space is tight in cellars.
- Typically KESSEL: **EasyClean** grease separators can be retrofitted up to the fully automatic system level even years later – without removal being necessary.

See page 234

EasyClean grease separators – better cleaning, less water consumption and shortened disposal times



NEW



Program overview

1 Backwater protection	from page 17
2 Hybrid lifting stations	from page 51
3 Lifting stations	from page 59
4 Drains and channels	from page 113
5 Separators	from page 225
6 Wastewater treatment systems	from page 269
7 Individual solutions	from page 283
Quick-search index	from page 303



1 Backwater protection

Premium backwater valves

Page **22 – 33**

with mechanical or motor-driven backwater flap and pump for draining wastewater with sewage even during a backwater phase.

Classic backwater valves

Page **34 – 41**

with mechanical backwater flaps for protection against backwater and water in the basement.

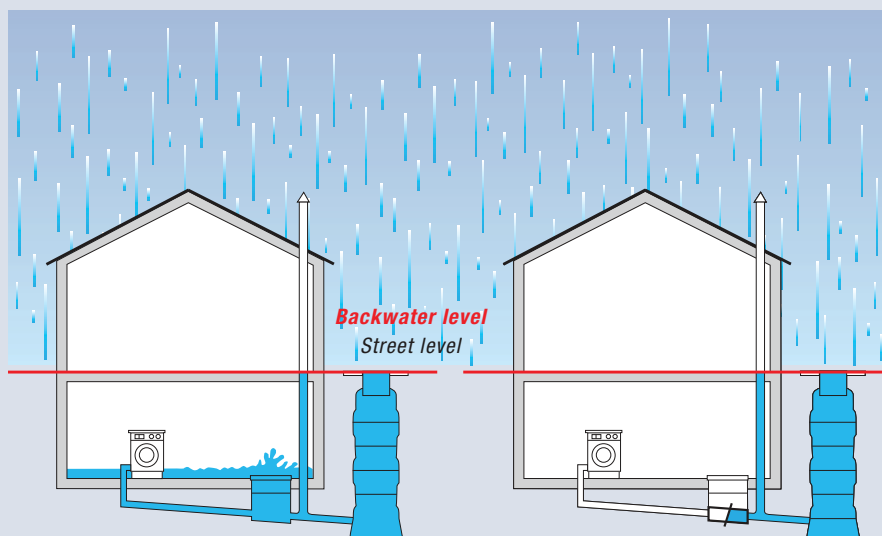
Backwater valves in chamber for underground installation

Page **42 – 49**

Frees up basement space by moving backwater protection to outside the house.

What is backwater?

All the outlet pipes from drainage fixtures in buildings (washing machines, showers, toilets etc.) are connected to the sewer, forming a linked pipe system. If the wastewater cannot flow freely through the sewer e.g. after heavy rainfall or due to blockages in the sewer pipes, it is pushed back into the connected outlet pipes and can flood all the areas of the house which are below the backwater level, including any fixtures and furnishings etc.



Problem: Draining system without backwater protection

During heavy rain, the water level rises above the so-called backwater level. This term is usually used to mean street level. Rooms in the basement or cellar quickly become flooded.

Damage caused by ruined flooring, furniture or electric appliances, soaked household goods and a great deal of hassle and costs for those living in the house.

Solution: Draining system with backwater protection

Draining systems such as floor drains, washing machines, sinks, showers or toilets which are below the backwater level have to be protected effectively and permanently against backwater. Wastewater that flows with gravity drainage to the sewer has to be protected by a backwater valve. If the public sewer is higher than the drainage spot in the building, the wastewater must be pumped upwards via a fully automatic lifting station.

Backwater is always possible

For economic reasons, public mixed and rainwater pipes cannot be dimensioned in such a way that they can deal with extremely heavy rain without any problems. For this reason, flooding of the sewer and backwater in all connected pipes must be expected during heavy rain.

In addition, backwater can occur for the following reasons:

- Blockage, burst pipes or damage to the sewage system.
- Pump failure, if the drainage system is connected to a pumping station.
- High water levels in the recipient (stream or river), since rainwater cannot flow away easily from low ground.
- Pipe blockage or diversion due to repair work.
- Increased wastewater feed, for example when sewage systems are being rinsed, the fire brigade is in action or more pipes are connected to the sewage system than originally planned.



Heavy rainfalls are increasing

The problem of backwater has always existed, because for economic and technical reasons, sewage pipes are designed for average rainfall. This means the storm sewage pipe can fill up very quickly in the event of a cloudburst.

What is new is that meteorologists predict that heavy rainfalls will increase in future. The reason: global warming leads to more evaporation from the earth's surface. This fills rain clouds which then discharge torrential rain.

Specialist help is needed

At the end of the day, the building owner, home owner or renovators are out on their own. They have to protect their property from backwater, with or without insurance.

But what's the best way to do it? Who can assess the risk? What should they do? Who can they contact?

This is where specialist craftsmen are required. Backwater protection is a matter for professionals, not DIY specialists. For this reason, specialists must provide expert advice for home owners, building owners and renovators as to how they can best protect their properties from backwater.

The right product selection

The selection and use of backwater protection depends on several conditions. In particular, the wishes of the operator must be taken into account, as well as the draining

element itself, the position of the sewage channel, type of sewage and the respective regulations.

Black water or grey water?

Black water

wastewater with sewage



Grey water

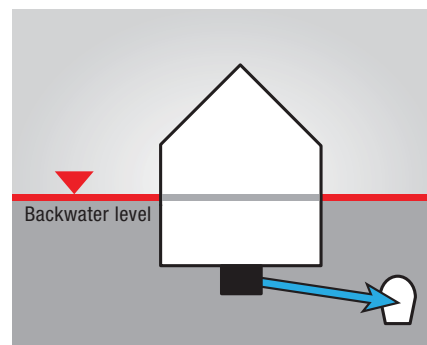
wastewater without sewage

When choosing which product you require, the distinction between wastewater with sewage (black water) and wastewater without sewage (grey water) is extremely important. The decisive factor is always the type of wastewater that flows through the backwater protection towards the sewer. Wastewater without sewage means water coming from showers or washing machines, for example.

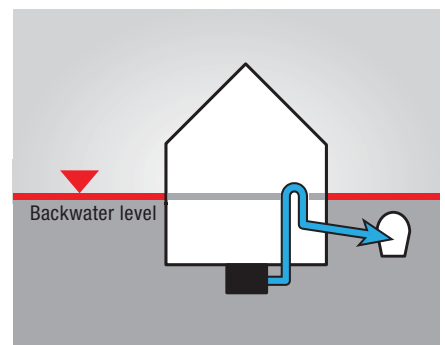
Wastewater with sewage is always involved whenever pipes are connected that transport water from urinals or toilets to the sewer.

Which type of wastewater is pushed back in the event of backwater (in other words from the sewer towards the backwater protection) is insignificant.

Gravity or no gravity?



- Domestic wastewater is discharged with gravity drainage to the sewer
- ▷ backwater valves see from page 26



- Channel is higher - wastewater must be lifted to the sewer via the backwater loop
- ▷ pumping stations see from page 24

Installation possibilities



■ Example for installation
in an exposed wastewater pipe



■ Example for installation
in a concrete slab/floor



■ Example for underground installation

Exposed installation



Ideal for the renovation of old buildings which are in danger of backwater - the low-cost, clean and standard-conform solution for retrofitting backwater units!

To avoid the complete wastewater pipes having to be rerouted in expensive construction work, we recommend installing the central backwater protection unit in the existing exposed wastewater pipe. This guarantees free access to the backwater unit for maintenance work and pipe cleaning.



Installation in a concrete floor

The convenient, practical and attractive-looking version for new buildings creates additional accommodation space in the basement. High land prices often force clients who build a house on a small plot of land to use rooms in the basement to maximise the accommodation area. In addition, toilets, showers or utility rooms are often located in the basement.

The backwater protection unit is installed concealed in the floor. The easy-to-install set with a cover that can be tiled over as required can be used with a wide range of different interior styles and trends - whether the room in question is a music room, home office or sauna and spa.

Covers with a drain function for additional surface draining in an emergency (e.g. if the basement is flooded during heavy rain) provide even more safety. A special sealing set protects the basement from water pressure from below.



Underground installation

Up to now, products protecting against water penetration have mainly been installed inside buildings. In the meantime, however, new methods are available. For this, an inspection chamber is installed in front of the building where the backwater flap is installed.

If wastewater occurrence increases, the correct backwater protection unit can always be retrofitted e.g. when older residential areas are expanded or extensions are built on houses to cope with increased demand. This means clients and the local authorities are always on the safe side.

Equally, pumps and sewage lifting stations which so far have taken up a lot of space in the basement can now be installed in the chamber. Outside the building, they run quietly and reliably, and are easy to service.

Standards and regulations

Which standards must be taken into account?

EN standards	Description
12056-1	Gravity drainage systems inside buildings and performance requirements
12056-4	Gravity drainage systems inside buildings. Wastewater lifting plants - layout and calculation.
752	Gravity drainage systems outside buildings.
13564-1	Anti-flooding devices for buildings - requirements
1253-5	Gullies for building - closures for light liquids

The six product types

Backwater valves for through pipes are an ideal technical and, in particular, financial alternative to lifting stations. The usage conditions set out in EN 12056-4 must be given. According to EN 13564-1, a distinction is made between six types of backwater valves:

Type 0: Backwater valve for use in horizontal pipes with one automatic closure only.

Type 1: Backwater valve for use in horizontal pipes with one automatic closure and one emergency closure, whereby this emergency closure may be combined with the automatic closure.

Type 2: Backwater valve for use in horizontal pipes with two automatic closures and one emergency closure, whereby this emergency closure may be combined with one of the two automatic closures.

Type 3: Backwater valve for use in horizontal pipes with one automatic closure operated by external energy (electric, pneumatic or other) and one emergency closure which is independent of the automatic closure.

Type 4: Backwater valve installed in drain fittings or floor drains, with one automatic closure and one emergency closure, whereby this emergency closure may be combined with the automatic closure.

Type 5: Backwater valve installed in drain fittings or floor drains, with two automatic closures and one emergency closure, whereby this emergency closure may be combined with one of the automatic closures.

INFORMATION

Do you require more detailed information? Our Service Centre will be happy to help.

You can find your personal KESSEL contact on page 3 of this catalog!

Complete System Solution

In addition to individual backwater valves, KESSEL also offers other systems for backwater protection.

- Lifting and pumping stations for free standing and underground installation see chapter 3 “lifting stations”.
- Basement drains with backwater flaps or pump see chapter 4 “drains and channels”.

Individual Solutions

Thanks to the knowledge and possibilities in the field of polyethylene technology KESSEL is not only able to manufacture series products, but also special solutions in accordance with project-specific requirements. For additional information please take a look at the Individual Solutions section of this catalogue on page 283.

References

Over the past decades, KESSEL products have proven themselves countless times in destinations all over the world. Scan the following QR code to directly view our list of references.



www.kessel.com/references



Scan this QR code to directly view the corresponding product video.



Pumpfix F

backwater valve with integrated pump
for installation in a concrete floor / exposed wastewater pipe



SELECTION CRITERIA

PREMIUM-BACKWATER VALVES

	Controllfix	SWA	FKA	Pumpfix
Installation in a concrete floor?	✓	✓	✓	✓
Exposed installation?	✓	✓	✓	✓
Central protection of several drains possible?		✓	✓	✓
For wastewater containing raw sewage?		✓*	✓	✓
For commercial application?				✓
Wastewater disposal during backwater event?				✓
Conversion (Upgrade)	✓	✓	✓	
Products see page	29	28	26	24

* Check your country's EN 13564 backwater valve requirements for what type of valve is certified for your situation.

Premium backwater valves for wastewater with and without sewage. Backwater valves discharge wastewater via gravity to the sewer. When there is backwater from the sewer, the backwater flaps close motor-driven (**Pumpfix F** and **Staufix FKA** version). In the case of **Staufix SWA**, the pendulum-type backwater flap is closed by the backwater. **Pumpfix F** also pumps wastewater to the sewer against the backwater.





Staufix FKA Komfort - Motorised backwater valve
Staufix SWA - Twin flap backwater valve
 for installation in a concrete floor / exposed wastewater pipe

KESSEL-INNOVATIONS

COMPLETE SET VERSION

Removable inlet/outlet connections - also in Ø 200 (Fig. 1).

FULLY OPEN PIPE PASSAGE

Fully open pipe passage with open backwater flap during normal conditions, flap is automatically closed with motor during backwater.

GRADIENT

Installation body with only 9 mm gradient.

DRAIN FUNCTION

Tileable cover with drain function thanks to integrated drain cover (Fig. 2) with underground installation.

With *Pumpfix F*, any surface water is pumped to the sewer despite backwater even in an emergency (Fig. 3).

INSTALLATION

IN A CONCRETE FLOOR

Installation in waterproof concrete with sealing gasket set as protection against water load when installing the concrete slab. Telescopic upper section can be twisted, tilted, height-adjusted.



RETROFITTABLE

Every product in the *Staufix* Premium range can be retrofitted to a higher-level backwater unit up to *Pumpfix F* quite easily, depending on the situation (Fig. 4).

COMFORT-CONTROL UNITS

SELF-DIAGNOSIS SYSTEM SDS

Plug & play Comfort control units with self-diagnosis system SDS with display - can be connected without a qualified electrician (Fig. 5).



3



4



5

Backwater pumping stations for wastewater with or without sewage

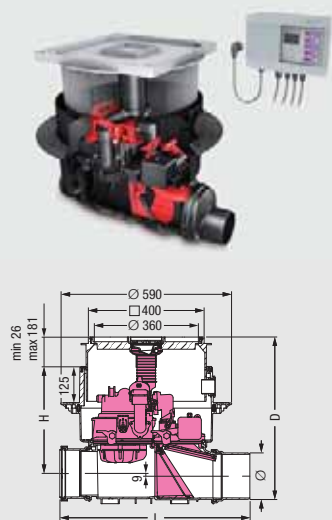
Backwater
protection

1

Pumpfix F Komfort Installation in a concrete slab/floor

Products

Illustration and dimensioned drawing



Installation area 750 x 750 mm

Backwater pumping station *Pumpfix F Komfort* for wastewater with or without sewage

made of polymer, with telescopic upper section
for continuous height- and level adjustment

**For installation in a concrete slab/floor
for installation depth (D) from 486 - 640 mm**

**1 with recessed cover for on-site tiling
and drain (X)**

2 with black cover and drain (S)

With surface water tight cover plate class A 15
made of polymer and integrated floor drain.
Installation kit with choice of cover.

Backwater pumping station according to EN 13564
Type 3 with pump (1kW/230V) and backwater valve,
pump activates during backwater, suitable for
wastewater with or without sewage. Plug-and-Play
control unit with connection option to building
management system and alarm, display for
operating status and battery back-up, protection
type IP 54, with integrated self diagnosis system
SDS, motorized backwater flap, *Pumpfix F* body
rated protection type IP 68 (3 m, 24 h).
Power cable length: 5 m (15 m available on request).

Ø 110 L: 642 mm H: 394 mm
Ø 125 L: 645 mm H: 387 mm
Ø 160 L: 656 mm H: 370 mm
Ø 200 L: 720 mm H: 348 mm



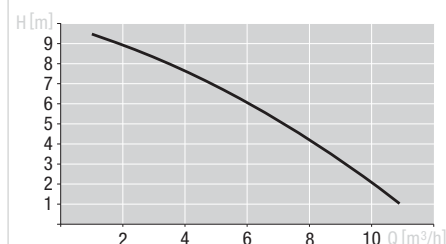
Certification: Z-53.2-388

Outer diameter Ø (mm)

1 Ø 110
Ø 125
Ø 160
Ø 200*
2 Ø 110
Ø 125
Ø 160
Ø 200*

Article

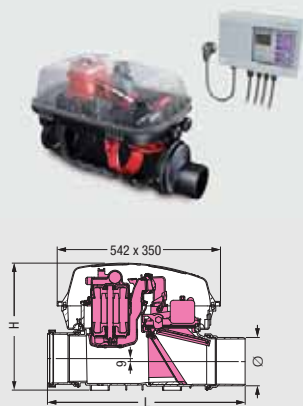
24100X
24125X
24150X
24200X
24100S
24125S
24150S
24200S



Accessories: Page 30 - 33

Pumpfix F Komfort Installation in an exposed wastewater pipe

Products



Backwater pumping station *Pumpfix F Komfort* for wastewater with or without sewage

made of polymer

**For installation
in an exposed wastewater pipe.**

With protective cover.

Backwater pumping station according to EN 13564
Type 3 with pump (1kW/230V) and backwater valve,
pump activates during backwater, suitable for
wastewater with or without sewage. Plug-and-Play
control unit with connection option to building
management system and alarm, display for
operating status and battery back-up, protection
type IP 54, with integrated self diagnosis system
SDS, motorized backwater flap, *Pumpfix F* body
rated protection type IP 68 (3 m, 24 h).
Power cable length: 5 m (15 m available on request).

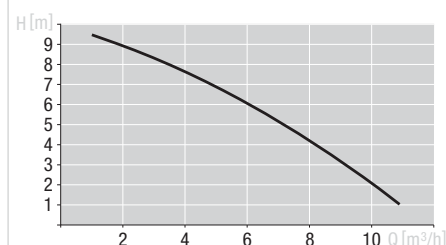
Ø 110 L: 642 mm H: 422 mm
Ø 125 L: 645 mm H: 422 mm
Ø 160 L: 656 mm H: 422 mm
Ø 200 L: 720 mm H: 422 mm



Certification: Z-53.2-388

Ø 110
Ø 125
Ø 160
Ø 200*

24100
24125
24150
24200



Accessories: Page 30 - 33

Backwater pumping stations for wastewater with or without sewage

Installation example *Pumpfix F Komfort*



Pumpfix F ① pumps against backwater and discharges surface water. It protects draining elements such as shower, sink, washing machine and outside steps down to the basement which are below the backwater level. The wastewater is discharged continually and without the use of energy to the sewer through gravity. In the event of backwater, reliable draining still takes place since the pump activates and pumps the building's wastewater into the surcharged sewer. Control is by means of the Comfort control unit ② with self-diagnosis system SDS. The sealing gasket set ③ Art. # 83023 makes installation in waterproof concrete possible.

Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.

- **Integrated drain function** to drain surface water.



- **Variable upper section** rotatable, tiltable and height adjustable

- **Installation in waterproof concrete.**

Gasket set to prevent groundwater infiltration.



- Installation body with only 9 mm gradient. Ideal for renovation work.



Scan this QR code to directly view the corresponding product video.



Installation example *Pumpfix F Komfort*



Function and range of application are identical to the system described above. The installation of the *Pumpfix F* ① is even easier in this case if the wastewater pipe is routed exposed across the basement floor. The Comfort control unit ② with SDS is part of the scope of supply here, too, so that safe system operation is guaranteed at all times. A low-cost investment for backwater protection in the basement compared with the property and building damage caused by basements flooded by backwater.

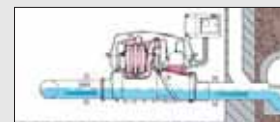
Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.

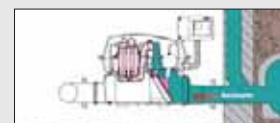
- Installation body with only 9 mm gradient. Ideal for renovation work.

- **Fully open pipe passage** with open backwater flap during normal conditions, flap is automatically closed with motor during backwater

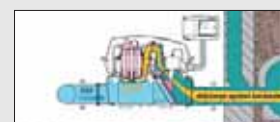
- **Function**



Normal mode:
Water drains
with gravity



Backwater:
Backwater flap
is closed



Pump activates,
wastewater
is discharged

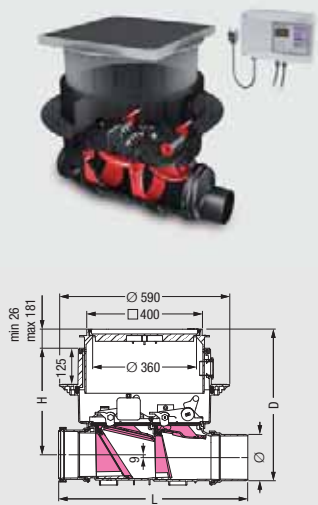


Motorised backwater valve for wastewater with or without sewage

Backwater
protection

1




Staufix FKA Komfort Installation in a concrete slab/floor

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Installation area 750 x 750 mm</p>	Backwater valve <i>Staufix FKA Komfort</i> for wastewater with or without sewage made of polymer, with telescopic upper section for continuous height- and level adjustment For installation in a concrete slab/floor for installation depth (D) from 486 - 640 mm 1 with recessed cover for on-site tiling (X) 2 with black cover (S) With surface water tight cover plate class A 15 made of polymer. Installation kit with choice of cover. Backwater valve according to EN 13564 Type 3 with two open flaps. Plug-and-Play control unit with connection option to building management system and alarm, protection type IP 54, with integrated self diagnosis system SDS, display for operating status and battery back-up, motor is rated protection Type IP 68 (3 m, 24 h). Supply voltage/-frequency: 230 V AC/50 Hz. Cable length: 5 m (15 m available on request).	1 Ø 110 Ø 125 Ø 160 Ø 200* 2 Ø 110 Ø 125 Ø 160 Ø 200*	84100X 84125X 84150X 84200X 84100S 84125S 84150S 84200S
	Ø 110 L: 642 mm H: 394 mm Ø 125 L: 645 mm H: 387 mm Ø 160 L: 656 mm H: 370 mm Ø 200 L: 720 mm H: 348 mm		
	 EN 13564 Type 3 F	 Accessories: Page 30 - 33	

Staufix FKA Komfort Installation in an exposed wastewater pipe

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Backwater valve <i>Staufix FKA Komfort</i> for wastewater with or without sewage made of polymer For installation in an exposed wastewater pipe. With protective cover. Backwater valve according to EN 13564 Type 3 with two open flaps. Plug-and-Play control unit with connection option to building management system and alarm, display for operating status and battery back-up, protection type IP 54, with integrated self diagnosis system SDS, display for operating status and battery back-up, motor is rated protection Type IP 68 (3 m, 24 h). Supply voltage/-frequency: 230 V AC/50 Hz. Cable length: 5 m (15 m available on request).	Ø 110 Ø 125 Ø 160 Ø 200*	84100 84125 84150 84200
	Ø 110 L: 642 mm H: 422 mm Ø 125 L: 645 mm H: 422 mm Ø 160 L: 656 mm H: 422 mm Ø 200 L: 720 mm H: 422 mm		
	 EN 13564 Type 3 F	 Accessories: Page 30 - 33	

Motorised backwater valve for wastewater with or without sewage

Installation example *Staufix FKA Komfort*



Backwater valve *Staufix FKA* ① as central backwater protection for the simple and professional installation through the installation set provided. For toilets, showers, sinks and washing machines that are located in the basement. In the event of backwater from the sewer, the valve is sealed by a motor driven backwater flap and then opened again afterwards. Regular and automatic functional testing by the SDS system integrated in the control unit ②. The sealing gasket set ③ Art. # 83023 makes installation in waterproof concrete possible.

Installation example *Staufix FKA Komfort*



Function and range of application are identical to the system described above. Installation of the *Staufix FKA* ① is even easier in this case if the wastewater pipe is routed exposed across the basement floor. The Comfort control unit ② with SDS is part of the scope of supply here, too, so that safe system operation is guaranteed at all times.

Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.



- **Variable upper section** rotatable, tiltable and height adjustable

- **Installation in waterproof concrete.** Gasket set to prevent groundwater infiltration.



- **Backwater protection even during construction phase thanks to 3-stage flap** Freely suspended flap in the construction phase position.



Scan this QR code to directly view the corresponding product video.



Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.



- **Installation body with only 9 mm gradient.** Ideal for renovation work.



- **Backwater protection even during construction phase thanks to 3-stage flap** Freely suspended flap in the construction phase position.

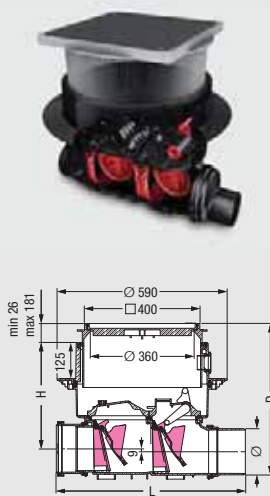


Twin flap backwater valves for wastewater

Backwater
protection

1

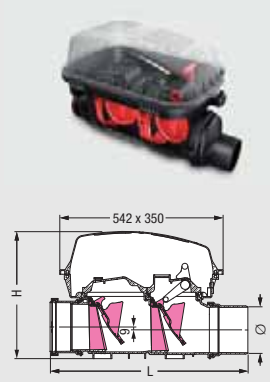


Staufix SWA Installation in a concrete slab/floor

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Installation area 750 x 750 mm</p>	Twin flap backwater valve <i>Staufix SWA</i> for wastewater made of polymer, with telescopic upper section for continuous height- and level adjustment For installation in a concrete slab/floor for installation depth (D) from 486 - 640 mm 1 with recessed cover for on-site tiling (X) 2 with black cover (S) With surface water tight cover plate class A 15 made of polymer. Installation kit with choice of cover. Backwater flap valve according to EN 13564 Type 2 with two self-closing flaps, one of which can be locked by hand as an emergency closure.	1 Ø 110 Ø 125 Ø 160 Ø 200* 2 Ø 110 Ø 125 Ø 160 Ø 200*	73100.10X 73125.10X 73150.10X 73200.10X 73100.10S 73125.10S 73150.10S 73200.10S
	Ø 110 L: 642 mm H: 394 mm Ø 125 L: 645 mm H: 387 mm Ø 160 L: 656 mm H: 370 mm Ø 200 L: 720 mm H: 348 mm		
	 EN 13564 Type 2	 Accessories: Page 30 - 33	

Staufix SWA Installation in an exposed wastewater pipe


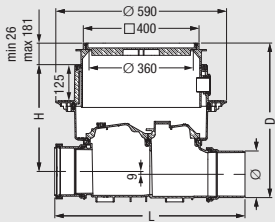

Products

	Twin flap backwater valve <i>Staufix SWA</i> for wastewater made of polymer For installation in an exposed wastewater pipe. With protective cover. Backwater flap valve according to EN 13564 Type 2 with two self-closing flaps, one of which can be locked by hand as an emergency closure.	Ø 110 Ø 125 Ø 160 Ø 200*	73100.10 73125.10 73150.10 73200.10
	Ø 110 L: 642 mm H: 422 mm Ø 125 L: 645 mm H: 422 mm Ø 160 L: 656 mm H: 422 mm Ø 200 L: 720 mm H: 422 mm		
	 EN 13564 Type 2	 Accessories: Page 30 - 33	

Clean outs for wastewater


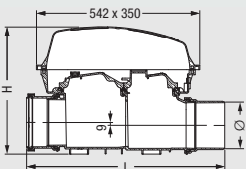

Controfix Installation in a concrete slab/floor

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
  Installation area 750 x 750 mm	Clean out <i>Controfix</i> for wastewater made of polymer, with telescopic upper section for continuous height- and level adjustment For installation in a concrete slab/floor for installation depth (D) from 486 - 640 mm 1 with recessed cover for on-site tiling (X) 2 with black cover (S) With surface water tight cover plate class A 15 made of polymer. Installation kit with choice of cover.	1 Ø 110 Ø 125 Ø 160 Ø 200* 2 Ø 110 Ø 125 Ø 160 Ø 200*	80100X 80125X 80150X 80200X 80100S 80125S 80150S 80200S
	Ø 110 L: 642 mm H: 394 mm Ø 125 L: 645 mm H: 387 mm Ø 160 L: 656 mm H: 370 mm Ø 200 L: 720 mm H: 348 mm		
 Accessories: Page 30 - 33			

Controfix Installation in an exposed wastewater pipe

Products

 	Clean out <i>Controfix</i> for wastewater made of polymer For installation in an exposed wastewater pipe. With protective cover.	Ø 110 Ø 125 Ø 160 Ø 200*	80100 80125 80150 80200
	Ø 110 L: 642 mm H: 422 mm Ø 125 L: 645 mm H: 422 mm Ø 160 L: 656 mm H: 422 mm Ø 200 L: 720 mm H: 422 mm		
 Accessories: Page 30 - 33			






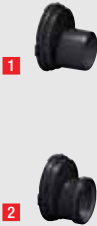
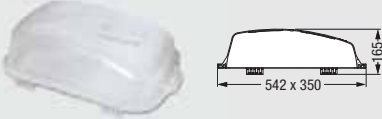
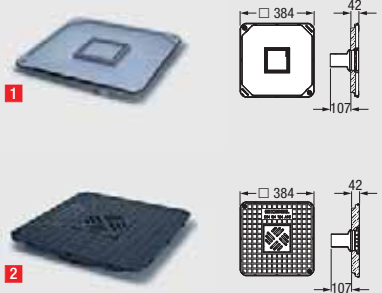


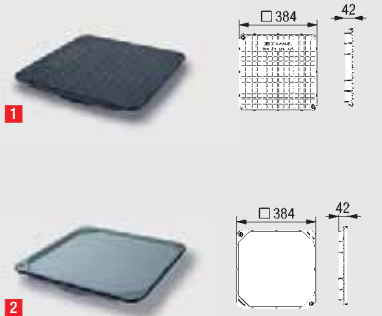
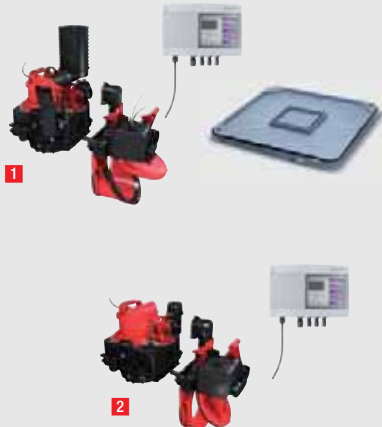



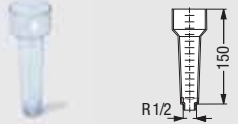
Pumpfix F / Staufix FKA / Staufix SWA			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
<p>For models made on or after Jan 2011</p> 	<p>Cable extension set 10 m</p> <p><input type="checkbox"/> Pumpfix F Komfort</p> <ul style="list-style-type: none"> - for pump - 2 x for probe - for motor <p><input type="checkbox"/> Staufix FKA Komfort</p> <ul style="list-style-type: none"> - for probe - for motor 	<p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>80 891</p> <p>80 889</p> <p>80 890</p> <p>80 889</p> <p>80 890</p>
<p>For models made on or after Jan 2011</p> 	<p>Optical probe</p> <p>Includes adaptor set 80 892, cable length: 5 m</p> <p>Cable extension set (for probe), 10 m</p> <p>Adaptor set for optical probe installation consisting of:</p> <ul style="list-style-type: none"> Optical probe connector 90° (black) Optical probe connection 180° (red) Optical probe extension piece for Pumpfix F / Staufix FKA Ø 125/160 (for Jan 2011 models and newer) 	<p>-</p> <p>-</p> <p>-</p>	<p>80 888</p> <p>80 889</p> <p>80 892</p>
	<p>Audible alarm</p> <p>Electronic audible alarm (continuous tone) with connection cable 20 m</p> <p>Minimum current consumption 5 - 25 mA, audible tone 4.7 KHz - 90 dB, large voltage range 6 - 24 V DC; Dimension Ø 31 x 15 mm.</p> <p>suitable for all control units with SDS function:</p> <p><i>Pumpfix F, Staufix FKA</i></p>	<p>-</p>	<p>20 162</p>
	<p>Potential-free contact</p> <p>Change-over contact 42 V / 0.5 A; Additional circuit board with a potential-free contact e.g. for connecting control unit to BMS (Building Management System).</p> <p>suitable for all control units with SDS function:</p> <p><i>Pumpfix F, Staufix FKA</i></p>	<p>-</p>	<p>80 072</p>

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Extension section with centre flange with elastomer sealing sheet made of NK/SBR Ø 800 mm, incl. screws for article numbers: 24 100 X, 24 125 X, 24 150 X, 24 200 X, 24 100 S, 24 125 S, 24 150 S, 24 200 S, 73 100.10 X, 73 125.10 X, 73 150.10 X, 73 200.10 X, 73 100.10 S, 73 125.10 S, 73 150.10 S, 73 200.10 S, 80 100 X, 80 125 X, 80 150 X, 80 200 X, 80 100 S, 80 125 S, 80 150 S, 80 200 S, 84 100 X, 84 125 X, 84 150 X, 84 200 X, 84 100 S, 84 125 S, 84 150 S, 84 200 S	-	83 075
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	Extension section with flange made of polymer, max. extension 180 mm, incl. gasket For gasket set Art. # 83 023 for article numbers: 24 100 X, 24 125 X, 24 150 X, 24 200 X, 24 100 S, 24 125 S, 24 150 S, 24 200 S, 73 100.10 X, 73 125.10 X, 73 150.10 X, 73 200.10 X, 73 100.10 S, 73 125.10 S, 73 150.10 S, 73 200.10 S, 80 100 X, 80 125 X, 80 150 X, 80 200 X, 80 100 S, 80 125 S, 80 150 S, 80 200 S, 84 100 X, 84 125 X, 84 150 X, 84 200 X, 84 100 S, 84 125 S, 84 150 S, 84 200 S	-	83 071
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	Extension section made of polymer, max. extension 180 mm, incl. gasket for article numbers: 24 100 X, 24 125 X, 24 150 X, 24 200 X, 24 100 S, 24 125 S, 24 150 S, 24 200 S, 73 100.10 X, 73 125.10 X, 73 150.10 X, 73 200.10 X, 73 100.10 S, 73 125.10 S, 73 150.10 S, 73 200.10 S, 80 100 X, 80 125 X, 80 150 X, 80 200 X, 80 100 S, 80 125 S, 80 150 S, 80 200 S, 84 100 X, 84 125 X, 84 150 X, 84 200 X, 84 100 S, 84 125 S, 84 150 S, 84 200 S	-	83 070
 <p>Waterproof concrete installation tested by MFPA Leipzig UB 5.1/11-452-1</p>	Gasket set for installation in waterproof concrete consisting of: Counter flange made of polymer, incl. screws, elastomer waterproof membrane in NK/SBR Ø 800 mm for article numbers: 24 100 X, 24 125 X, 24 150 X, 24 200 X, 24 100 S, 24 125 S, 24 150 S, 24 200 S, 73 100.10 X, 73 125.10 X, 73 150.10 X, 73 200.10 X, 73 100.10 S, 73 125.10 S, 73 150.10 S, 73 200.10 S, 80 100 X, 80 125 X, 80 150 X, 80 200 X, 80 100 S, 80 125 S, 80 150 S, 80 200 S, 84 100 X, 84 125 X, 84 150 X, 84 200 X, 84 100 S, 84 125 S, 84 150 S, 84 200 S	-	83 023

Pumpfix F / Staufix FKA / Staufix SWA / Controfix			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Inlet / Outlet 1 Spigot 2 Socket Removable inlets / outlets, can be mounted in various dimensions. For use with all versions of the <i>Pumpfix F</i> , <i>Staufix FKA</i> , <i>Staufix SWA</i> and <i>Controfix</i> for installation in a concrete slab/floor and in an exposed wastewater pipe.	Ø 110 Ø 125 Ø 160 Ø 200 Ø 110 Ø 125 Ø 160 Ø 200	83 081 83 082 83 083 83 084 83 085 83 086 83 087 83 088
For models made on or after Jan 2011 	Protective cover for installation in an exposed wastewater pipe for article numbers: 24 100, 24 125, 24 150, 24 200, 73 100.10, 73 125.10, 73 150.10, 73 200.10, 80 100, 80 125, 80 150, 80 200, 84 100, 84 125, 84 150, 84 200	-	83 031
For models made on or after Jan 2011 	Cover plate, surface water tight Class A 15 With drain Ø 75, includes Multistop odour, foam, rodent and insect stop incl. gasket 1 recessed for on-site tiling, grey, for tile thicknesses of 18 mm 2 with integrated grating, black for article numbers: 24 100 X, 24 125 X, 24 150 X, 24 200 X, 24 100 S, 24 125 S, 24 150 S, 24 200 S	- -	83 045 83 046
	Multistop odour, foam, rodent and insect stop for article numbers: 83 045 and 83 046	-	43 500
	Hair filter made of polymer for article numbers: 83 045 and 83 046	-	43 700
	Cover plate, surface water tight Class A 15 made of polymer, incl. gasket Art. # 173-145 1 black 2 recessed for on-site tiling, grey, for tile thicknesses of 18 mm for article numbers: 73 100.10 X, 73 125.10 X, 73 150.10 X, 73 200.10 X, 73 100.10 S, 73 125.10 S, 73 150.10 S, 73 200.10 S, 80 100 X, 80 125 X, 80 150 X, 80 200 X, 80 100 S, 80 125 S, 80 150 S, 80 200 S, 84 100 X, 84 125 X, 84 150 X, 84 200 X, 84 100 S, 84 125 S, 84 150 S, 84 200 S	- -	83 050 83 052

Pumpfix F / Staufix FKA / Staufix SWA			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit Pumpfix F With 5 m cable length</p> <p>1 Pumpfix F Komfort incl. Komfort control unit with recessed cover for on-site tiling and drain, class A 15, incl. <i>Multistop</i> incl. gasket for installation in a concrete slab/floor</p> <p>2 Pumpfix F Komfort incl. Komfort control unit for installation in an exposed wastewater pipe</p>	<p>Ø 110-200*</p> <p>Ø 110-200*</p>	<p>80 098</p> <p>80 097</p>
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit Staufix FKA Komfort With 5 m cable length incl. Komfort control unit for installation in a concrete slab/floor and in an exposed wastewater pipe</p>	<p>Ø 110-200*</p>	<p>80 093</p>
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit Staufix SWA for installation in a concrete slab/floor and in an exposed wastewater pipe</p>	<p>Ø 110-200*</p>	<p>80 091</p>
<p>For models made on or after Jan 2011</p> 	<p>Rat protection flap with stainless steel shield for <i>Staufix FKA Komfort</i> (with flap in pendulum position) and <i>Staufix SWA</i></p>	<p>-</p>	<p>80 037</p>
	<p>Testing funnel with sealing gasket for servicing all <i>Staufix</i> backwater valves, suitable for Ø 110, 125, 160</p>	<p>-</p>	<p>70 214</p>



Scan this QR code to directly view the corresponding product video.



Staufix - the successful original



The original from KESSEL stops water and rodents in the basement.

Protects individual drainage fixtures such as shower, sink and washing machine below the backwater level.



Backwater valves **Staufix** Ø 100 - 200
for wastewater

SELECTION CRITERIA

BACKWATER VALVES *Staufix* Ø 100 - 200

Staufix	Art. # 71...	Art. # 72...	Art. # 73...
Installation in a concrete floor?	✓	✓	✓
Installation in an exposed pipe?	✓	✓	✓
Protection of individual draining elements?			
Central protection of several drains possible?	✓	✓	✓
Emergency closure		✓	✓
Number of flaps	1	1	2
For wastewater containing raw sewage?		✓ *	✓ *
Type	Type 0	Type 1	Type 2
Products see page	36	36	36

* Check your country's EN 13564 backwater valve requirements for what type of valve is certified for your situation.





Backwater valves **Staufix Ø 50 / Ø 75, Staufix Siphon Ø 50**
for wastewater without sewage

FOR NEW BUILDINGS AND RENOVATION

SAFETY

Rodent stop optional (Fig. 2). Also works as a backwater preventer.

CORROSION-FREE

All ABS construction - No more metal, no more rust.

CONVERSION

Simple conversion from a clean out to a backwater valve using optional conversion kits, possible at a later date and in the installed state without tools being necessary (for *Staufix* version Ø 110 - 200).

STRAIGHTFORWARD MAINTENANCE

Maintenance and cleaning without tools (Fig. 3).

TYPES OF INSTALLATION

Staufix Ø 110 - 200 for installation in an exposed wastewater pipe (Fig. 1) or for installation in the concrete slab with upper section as accessory (Fig. 2).

Staufix Ø 50 / Ø 75 for installation in an exposed wastewater pipe (Fig. 3). *Staufix Siphon* Ø 50 for sink siphons (Fig. 4), sink siphon with washing machine connection (Fig. 5) and including inlet funnel for heating overflow (Fig. 6).

SELECTION CRITERIA

BACKWATER VALVES *Staufix* Ø 50 / Ø 75

<i>Staufix</i>	Ø 50 / Ø 75 / Siphon
Installation in a concrete floor ?	
Installation in an exposed pipe ?	✓
Protection of individual draining elements ?	✓
Central protection of several drains possible ?	
Emergency closure	✓
Number of flaps	2
For wastewater containing raw sewage ?	
Type	Type 2
Products see page	38




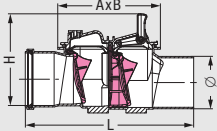

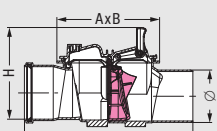

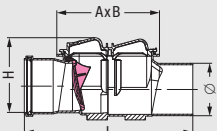

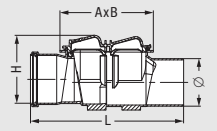
Backwater valves for wastewater

Backwater
protection

1

Staufix Installation in an exposed wastewater pipe

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
  Illustration shows 1	Twin flap backwater valve Staufix made of polymer, Ø... with emergency closure 1 with two polymer flaps 2 with one polymer flap and one stainless steel rodent protection flap (version R) Twin flaps, self-closing, one of which can be locked by hand as an emergency closure. Inlet/outlet for connection to PVC pipe according to EN 1566-1. Ø 110 L: 355 H: 180+25 AxB: 205 x 155 mm Ø 125 L: 405 H: 240+40 AxB: 270 x 200 mm Ø 160 L: 450 H: 240+40 AxB: 270 x 200 mm Ø 200 L: 530 H: 278+50 AxB: 353 x 248 mm EN 13564 Type 2	Ø 110 Ø 125 Ø 160 Ø 200 Ø 110 Ø 125 Ø 160	73100 73125 73150 73200 73100R 73125R 73150R
  Illustration shows 1	Single flap backwater valve Staufix made of polymer, Ø... with emergency closure 1 with one polymer flap 2 with one stainless steel rodent protection flap (version R) Self-closing flap, can be locked by hand as an emergency closure. Inlet/outlet for connection to PVC pipe according to EN 1566-1. Ø 100 L: 355 H: 180+25 AxB: 205 x 155 mm Ø 110 L: 355 H: 180+25 AxB: 205 x 155 mm Ø 125 L: 405 H: 240+40 AxB: 270 x 200 mm Ø 160 L: 450 H: 240+40 AxB: 270 x 200 mm Ø 200 L: 530 H: 278+50 AxB: 353 x 248 mm EN 13564 Type 1	Ø 100 Ø 110 Ø 125 Ø 160 Ø 200 Ø 110 Ø 125 Ø 160	77100 72100 72125 72150 72200 72100R 72125R 72150R
  Illustration shows 1	Single flap backwater valve Staufix made of polymer, Ø... without emergency closure <input type="checkbox"/> with one polymer flap Self-closing flap. Inlet/outlet for connection to PVC pipe according to EN 1566-1. Ø 110 L: 355 H: 170 A x B: 205 x 155 mm Ø 110 L: 355 H: 170 A x B: 205 x 155 mm Ø 125 L: 405 H: 230 A x B: 270 x 200 mm Ø 160 L: 450 H: 230 A x B: 270 x 200 mm Ø 200 L: 530 H: 278 A x B: 353 x 248 mm EN 13564 Type 0	Ø 100 Ø 110 Ø 125 Ø 160 Ø 200	76100 71100 71125 71150 71200
  Illustration shows 1	Clean out Staufix made of polymer, Ø... upgradable to all Staufix model backwater valves Ø 110 L: 355 H: 170 AxB: 205 x 155 mm Ø 125 L: 405 H: 230 AxB: 270 x 200 mm Ø 160 L: 450 H: 230 AxB: 270 x 200 mm Ø 200 L: 530 H: 278 AxB: 353 x 248 mm	Ø 110 Ø 125 Ø 160 Ø 200	70100 70125 70150 70200

Backwater valves for wastewater

Installation example *Staifix*



Staifix twin flap backwater valve - the classical item in the KESSEL backwater range and the successful original. The current model is made of ABS, completely corrosion-free and can be serviced without tools. Protects individual drainage fixtures such as shower, sink and washing machine below the backwater level. Installation in the concrete slab with upper section Art. # 32 500 and two cover plates Art. # 30 004 S or for installation in an exposed wastewater pipe.

Professional advantages

- **Tool-free servicing**
- **Everything made of polymer material - corrosion-free**
- **Backwater flap** made of stainless steel to keep rats and vermin out
- **Perfect for renovation**
Other valves with large drops are difficult to install. *Staifix* offers minimal drop between inlet/outlet (7 mm).
- Can be **retrofitted/converted** after installation



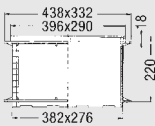






Scan this QR code to directly view the corresponding product video.



Staifix

Accessories

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
  	Cover plate, class L 15 <input type="checkbox"/> black	-	30 004 S
	Upper section Height = 220 mm for article numbers: 70 100, 70 125, 70 150, 70 200, 71 100, 71 125, 71 150, 71 200, 72 100, 72 125, 72 150, 72 200, 72 100R, 72 125R, 72 150R, 73 100, 73 125, 73 150, 73 200, 73 100R, 73 125R, 73 150R	-	32 500
NEW 	Conversion kit The <i>Staifix</i> clean out body can be converted to a <i>Staifix</i> twin flap backwater valve by means of two backwater flaps 1 , the insert flap housing 2 and the lockable cover 3 . Please note: 2x backwater flap 70 205 and the lockable cover are required for the Ø 200 version.	3 Lockable cover incl. emergency closure and sealing gasket: Ø 110 Ø 125 Ø 160 Ø 200	70 261 70 262 70 262 70 203
NEW 	Conversion kit The <i>Staifix</i> clean out body can be converted to a <i>Staifix</i> single flap backwater valve with emergency closure by means of the backwater flap 1 , insert flap housing 2 and the lockable cover 3 .	2 Insert flap housing: Ø 110 Ø 125 Ø 160 Ø 200	70 241 70 242 70 242 70 205
For <i>Staifix</i> from 04/2005 NEW 	Conversion kit The <i>Staifix</i> clean out body can be converted to a <i>Staifix</i> single flap backwater valve by means of a backwater flap 1 .	1 Backwater flap: Ø 110 Ø 125 Ø 160 Ø 200	70 231 70 232 70 232 70 205
NEW 	Stainless steel rodent protection flap for article numbers: 70 100, 70 125, 70 150, 71 100, 71 125, 71 150 72 100, 72 125, 72 150, 73 100, 73 125, 73 150	Ø 110 Ø 125 Ø 160	70 233 70 234 70 234

Backwater valves for wastewater without sewage

Backwater
protection

1

Staufix Ø 50 / Staufix Ø 75 / Staufix Siphon Ø 50			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	<p>Twin flap backwater valve Staufix Ø 50 made of polymer for exposed wastewater pipes</p> <p>Twin flaps, self-closing, one of which can be locked by hand as an emergency closure. Inlet/outlet for connection to HT-pipe according to EN 1451-1.</p> <p>CE EN 13564 Type 2</p>	Ø 50	73050
	<p>Twin flap backwater valve Staufix Ø 75 made of polymer for exposed wastewater pipes</p> <p>Twin flaps, self-closing, one of which can be locked by hand as an emergency closure. Inlet/outlet for connection to HT-pipe according to EN 1451-1.</p> <p>CE EN 13564 Type 2</p>	Ø 75	73070
	<p>Twin flap backwater valve Staufix Siphon Ø 50 made of polymer for washing stand siphons</p> <p>Twin flaps, self-closing, one of which can be locked by hand as an emergency closure, incl. wall attachment, inlet connection Ø 40 (1 1/2 inch) at pipe odour trap. Outlet Ø 50 for connection to HT-pipe according to EN 1451-1.</p> <p>CE EN 13564 Type 5</p>	Ø 50	73051
	<p>Twin flap backwater valve Staufix Siphon Ø 50 made of polymer Model with pipe odour trap and washing machine connection</p> <p>Twin flaps, self-closing, one of which can be locked by hand as an emergency closure, incl. wall attachment, outlet Ø 50 for connection to HT-pipe according to EN 1451-1.</p> <p>CE EN 13564 Type 5</p>	Ø 50	73052
	<p>Twin flap backwater valve Staufix Siphon Ø 50 made of polymer Model with pipe odour trap and inlet funnel, ideal for the emergency overflow of heating systems</p> <p>Two flaps, self-closing, one of which can be locked by hand as an emergency closure, incl. wall attachment. Outlet Ø 50 for connection to an HT-pipe according to EN 1451-1.</p> <p>CE EN 13564 Type 5</p>	Ø 50	73053

Backwater valves for wastewater without sewage

Installation example *Staufix* Ø 50 / Ø 75 / *Staufix Siphon* Ø 50



Multiple applications . . . Ø 50 or Ø 75 exposed drainage pipe



... washbasins with odour traps



... washbasins with odour traps and washing machine connection



... furnace condensation overflow

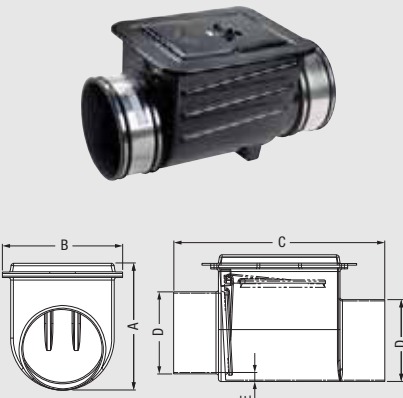
Professional advantages


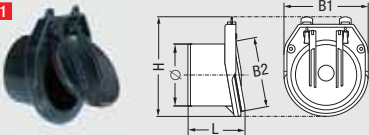

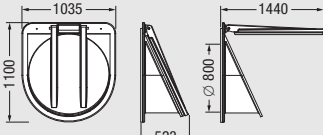
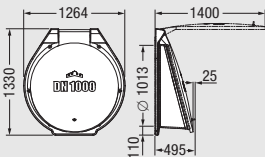
- **Preventative backwater protection** in new construction - also excellent for renovation.
- Unique twin flap system **according to Norm.**
- **Quick and problem free installation.**
- **Prevents flooding from additional wastewater drainage pipes connected to same drainage system.**
- **Easy maintenance and service with tool free finger clips.**
- **Complete polymer construction** - no more rust.
- **Also usable for rodent protection.**

Backwater valves for wastewater without sewage

Backwater
protection

1

Multitube			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Illustration shows article # 71 400</p>	<p>Multitube single flap backwater valve made of polymer for installation in ab exposed wastewater pipe, flap self-closing.</p> <p>Dimensions in mm: Ø 260 A: 485 B: 455 C: 730 D: 260 E: 60 Ø 320 A: 490 B: 470 C: 852 D: 320 E: 35 Ø 410 A: 600 B: 610 C: 900 D: 410 E: 30 Ø 515 A: 730 B: 700 C: 1230 D: 515 E: 40 with connection couplings*</p> <p>Connection couplings allow connection to pipes with the following outer diameters: Ø 260: 250 - 275 mm Ø 320: 310 - 335 mm Ø 410: 385 - 410 mm Ø 515: 495 - 525 mm</p>	Ø 260 Ø 320 Ø 410 Ø 515	71 250 71 300 71 400 71 500

Pipe flaps			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	<p>Pipe flap valve made of polymer Flap self-closing. Inlet/outlet for connection to PVC pipe according to EN 1451-1.</p> <p>Ø 110 L: 120 mm Ø 125 L: 136 mm Ø 160 L: 142 mm Ø 200 L: 170 mm</p>	Ø 110 Ø 125 Ø 160 Ø 200	79 100 79 125 79 150 79 200
<p>1</p>  <p>Illustration shows Ø 250, Ø 315</p>	<p>Pipe flap valve made of polymer For use as an end piece. Flap self-closing.</p> <p>Dimensions in mm: Ø 250 H: 400 L: 220 B1: 345 B2: 280 Ø 315 H: 450 L: 225 B1: 400 B2: 410 without connection coupling, connection according to EN 1451-1</p>	<p>1</p> Ø 250 Ø 315 Ø 405 Ø 506 Ø 638	79 250 79 300 79 400 79 500 79 600
 <p>Illustration shows Ø 800</p>	<p>Ø 405 H: 420 L: 295 B1: 485 B2: 417 Ø 506 H: 528 L: 320 B1: 590 B2: 522 Ø 638 H: 659 L: 345 B1: 730 B2: 655 with connection coupling*</p> <p>Connection couplings allow connection to pipes with the following outer diameters: Ø 400: 385 - 410 mm Ø 500: 495 - 525 mm Ø 600: 605 - 638 mm Ø 800 - Ø 1000 -</p>	<p>2</p> Ø 800**	79 800
<p>2</p> 			
<p>3</p> 		<p>3</p> Ø 1000**	79 1000

* With connection couplings it is possible to connect pipes of different diameters. Connection couplings are necessary where the difference in outer diameter is > 12 mm. Rights reserved for technical changes

** For wall installation

Backwater valves for wastewater without sewage

Installation example *Multitube*



Multitube single flap backwater valve for safe backwater protection. For use downstream from cisterns which are connected separately to a rainwater sewer or run into a recipient.



Pipe flap valve for the public, municipal and industrial sector. For safe protection against backwater, additional protection against rats, mice, frogs or vermin. For use downstream from cisterns which are connected separately to a rainwater sewer or run into a recipient and for seepage or pond systems.

Professional advantages

- **Fully compatible** with sea water and fresh water environments.
- **Low weight** for ease of installation yet with high mechanical strength.
- **Simple design** without counter-weight – Good watertightness.
- **Seals at a low level** of back pressure.
- **Low maintenance.**

Stop backwater before it reaches the building



Do not let wastewater get into the house at all. For this purpose, an inspection chamber housing the backwater protection is installed outside the building. This backwater flap protects the main drainage pipe, which is used to drain water from drains at risk of backwater only.



SYSTEM ADVANTAGES / INSTALLATION

CONVENIENCE

More safety and additional useful space in the basement.
No operational noises in the building.

FLEXIBILITY

Further pipes can be connected.

SAFETY

Material is crack- and impact-resistant. Permanently watertight and root-proof.
Covers in various load classes - can also be driven over (Fig. 1). 20-year guarantee for PE material.



INSTALLATION

Straightforward installation thanks to low weight of the chamber parts and variable upper sections for adaptation to the ground level (Fig. 2).





Complete chamber
made in one piece Ø 1000 mm

Backwater chamber
with three open channel passages



Komfort chamber
modular system Ø 800 / 1000 mm

Clean out *Controlfix*
with closed passage channel

RETROFIT CONVERSION KITS

Conversion kit *Pumpfix F* 1

Ø 110 - 200*, Art.# 80 102

for wastewater with or without sewage

Pumpfix F Komfort incl. Comfort control unit

With 15 m cable length



Conversion kit *Staufix FKA* 2

Ø 110 - 200*, Art.# 80 104

for wastewater with or without sewage

Staufix FKA Komfort incl. Comfort control unit

With 15 m cable length



Conversion kit *Staufix SWA* 3

Ø 110 - 200*, Art.# 80 091

for wastewater without sewage




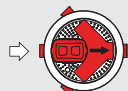
Cable extension set see page 30




* In-/Outlet Ø 200, hydraulics corresponds to Ø 160

Backwater inspection chambers for exterior installation according to EN 752

Backwater
protection

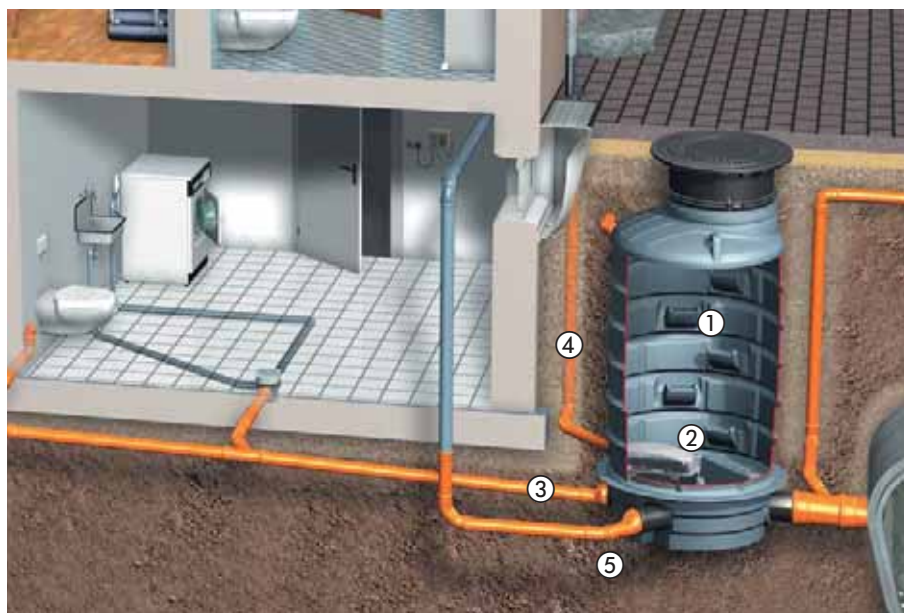
1

Backwater inspection chamber Ø 1000			Products
Illustration and dimensioned drawing	Article description	Chamber height	Article #
 <p>Standard cover on-site</p> <p>Accessories: Art. # 86 01 22 / 86 01 16</p> <p>Inspection chamber including 300 kg load class temporary construction debris cover</p>  <p>1250</p> <p>Chamber height H 1 to H 5</p> <p>from 50 to 280 mm</p> <p>Please state groundwater level T above base of chamber</p>	<p>Backwater inspection chamber Ø 1000</p> <p>Polyethylene construction</p> <p>For underground installation</p> <p>Monolithic design, with open continuous channel and clean out, with integrated access steps, watertight, resistant to aggressive wastewater, with telescopic height-adjustable protective cover made of polymer for use during the construction period (can be used as a cover in green areas).</p> <p>Triple 160 mm hub type gasketed inlets (left and right inlets with open channel passage through chamber, center hub inlet connected to housing for insertion of KESSEL backwater valve). Available backwater valve options - KESSEL <i>Staufix SWA</i>, KESSEL <i>Staufix FKA</i> or KESSEL <i>Pumpfix F</i>.</p> <p>Outlet:</p> <p>1 Ø 160 mm spigot type outlet</p> <p>2 Ø 200 mm spigot type outlet</p> <p>For connection to PVC pipe according to EN 1401-1 and PE-HD connections according to EN 12666-1.</p> <p>Handles groundwater depths up to 2000 mm</p> <p>Further accessories see page 48 - 49</p> <p>Distance from base of chamber to:</p> <p>Base of inlet approx. 136 mm</p> <p>Base of outlet approx. 108 mm</p>	<p>H1: 1180 mm H2: 1680 mm H3: 2180 mm H4: 2680 mm H5: 3180 mm</p> <p>H1: 1180 mm H2: 1680 mm H3: 2180 mm H4: 2680 mm H5: 3180 mm</p>	<p>NEW</p> <p>88 10 05-DN 150 88 15 05-DN 150 88 20 05-DN 150 88 25 05-DN 150 88 30 05-DN 150</p> <p>88 10 05 88 15 05 88 20 05 88 25 05 88 30 05</p>
	<p>KESSEL</p> <p>UK</p> <p>Certification no. Z-42.1-333</p>		

Conversion kit			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit <i>Pumpfix F Komfort</i></p> <p>With 15 m cable length, incl. Comfort control unit and connection for venting pipe</p> <p>For conversion to the inspection chamber with backwater pumping station <i>Pumpfix F</i>, for wastewater with or without sewage</p> <p>Cable extension set for pump, motor and probe see page 30</p>	Ø 110-200	80 102
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit <i>Staufix FKA Komfort</i></p> <p>With 15 m cable length, incl. Comfort control unit and connection for venting pipe</p> <p>For conversion to the inspection chamber with backwater valve <i>Staufix FKA</i>, for wastewater with or without sewage</p> <p>Cable extension set for motor and probe see page 30</p>	Ø 110-200	80 104
<p>For models made on or after Jan 2011</p> 	<p>Conversion kit <i>Staufix SWA</i></p> <p>For conversion to the inspection chamber with backwater valve <i>Staufix SWA</i>, for wastewater without sewage</p>	Ø 110-200	80 091

Backwater inspection chambers for exterior installation according to EN 752

Installation example backwater inspection chamber Ø 1000



The KESSEL backwater chamber ① has a special cleaning opening ② as standard, for the use of KESSEL backwater valves as accessories - either during installation or at a later date. The wastewater from the building flows backwater-proof and gravity fed to the chamber and then to the sewer.

Three standard connections for basement drains ③, roof drains ④ and drainage ⑤ are included. Cover for garden installation is included in the scope of supply, further upper sections and covers of the classes A/B/D are available.


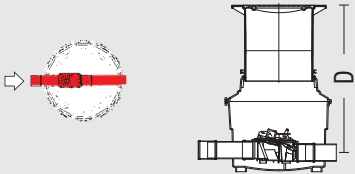
Professional advantages




- **Variable upper section**
inclinable and height adjustable
from 100 to 600 mm.
- **Simple to assemble** with light-weight
inspection chamber components and easy
connection technique.
- **Long-term reliability** with an absolute
water-tight inspection chamber system
which is resistant to sedimentary deposits
and aggressive media as well as root
infiltration.

Backwater inspection chambers for exterior installation according to EN 752

Backwater
protection

1

Komfort inspection chamber Ø 800				Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article # Class B	Article # Class D
 <p>Installation depth D: Top of cover to centre of outlet</p>  <p>Delivery: Inspection chamber in components (bottom parts stackable) for on-site assembly incl. assembly system.</p>	Clean out <i>Controlfix</i> with Komfort inspection chamber Ø 800 Polyethylene construction For underground installation Installation depth (D) from mm to mm <input type="checkbox"/> Cover plate class B (Version B) <input type="checkbox"/> Cover plate class D (Version D) Water-tight, resistant to aggressive wastewater. Upper section made of polymer for continuous height and level adjustment. Optional cover plate class in cast iron according to EN 124, surface water tight, incl. cover removal tool. Continuous pipe Ø with cleaning pipe according to EN 13564. Inlets with flange, outlet with spigot end for PVC pipe according to EN 1401-1 and PE-HD pipe according to EN 12666-1.	D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	84 25 01 B 84 25 02 B 84 25 03 B 84 25 11 B 84 25 12 B 84 25 13 B 84 25 21 B 84 25 22 B 84 25 23 B 84 25 31 B 84 25 32 B 84 25 33 B 84 25 41 B 84 25 42 B 84 25 43 B	84 25 01 D 84 25 02 D 84 25 03 D 84 25 11 D 84 25 12 D 84 25 13 D 84 25 21 D 84 25 22 D 84 25 23 D 84 25 31 D 84 25 32 D 84 25 33 D 84 25 41 D 84 25 42 D 84 25 43 D
	Conversion center inlet pipe to bottom inlet pipe: Ø 110: Installation depth D + 55 mm Ø 125: Installation depth D + 62.5 mm Ø 160: Installation depth D + 80 mm Ø 200: on request Installation depth: D 1: 770 - 1270 mm D 2: 1270 - 1770 mm D 3: 1770 - 2270 mm D 4: 2270 - 2770 mm D 5: 2770 - 3270 mm			
	Handles groundwater depths up to 500 mm Further accessories see page 48 - 49			


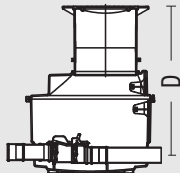
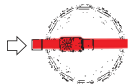
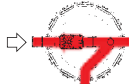
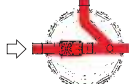
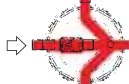
Conversion kit			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
For models made on or after Jan 2011 	Conversion kit <i>Pumpfix F Komfort</i> With 15 m cable length, incl. Comfort control unit and connection for venting pipe For conversion to the inspection chamber with backwater pumping station <i>Pumpfix F</i> , for wastewater with or without sewage Cable extension set for pump, motor and probe see page 30	Ø 110-200	80 102
For models made on or after Jan 2011 	Conversion kit <i>Staufix FKA Komfort</i> With 15 m cable length, incl. Comfort control unit and connection for venting pipe For conversion to the inspection chamber with backwater valve <i>Staufix FKA</i> , for wastewater with or without sewage Cable extension set for motor and probe see page 30	Ø 110-200	80 104
For models made on or after Jan 2011 	Conversion kit <i>Staufix SWA</i> For conversion to the inspection chamber with backwater valve <i>Staufix SWA</i> , for wastewater without sewage	Ø 110-200	80 091

Conduit piping is to be installed to enable subsequent retrofitting (Set Art. # 85 410).

Backwater inspection chambers for exterior installation according to EN 752

Komfort inspection chamber Ø 1000

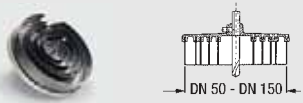
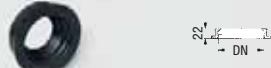






Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article # Class B	Article # Class D
 <p>Installation depth D: Top of cover to centre of outlet</p>  <p>Delivery: Inspection chamber in components (bottom parts stackable) for on-site assembly incl. assembly system.</p>	Clean out <i>Controllfix</i> with Komfort inspection chamber Ø 1000 Polyethylene construction For underground installation Installation depth (D) from mm to mm <input type="checkbox"/> Cover plate class B (Version B) <input type="checkbox"/> Cover plate class D (Version D) Inclusive integrated access steps, water-tight, resistant to aggressive wastewater. Upper section made of polymer for continuous height and level adjustment. Optional cover plate class in cast iron according to EN 124, surface water tight, incl. cover removal tool. Continuous pipe Ø with cleaning pipe according to EN 13564. Inlets with flange, outlet with spigot end for PVC pipe according to EN 1401-1 and PE-HD pipe according to EN 12666-1.	1 D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 25 01 B 86 25 02 B 86 25 03 B 86 25 11 B 86 25 12 B 86 25 13 B 86 25 21 B 86 25 22 B 86 25 23 B 86 25 31 B 86 25 32 B 86 25 33 B	86 25 01 D 86 25 02 D 86 25 03 D 86 25 11 D 86 25 12 D 86 25 13 D 86 25 21 D 86 25 22 D 86 25 23 D 86 25 31 D 86 25 32 D 86 25 33 D
	Conversion center inlet pipe to bottom inlet pipe: Ø 110: Installation depth D + 55 mm Ø 125: Installation depth D + 62.5 mm Ø 160: Installation depth D + 80 mm Ø 200: on request Installation depth: D 1: 950 - 1450 mm D 2: 1450 - 1950 mm D 3: 1950 - 2450 mm D 4: 2450 - 2950 mm D 5: 2950 - 3450 mm	2 D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 27 01 B 86 27 02 B 86 27 03 B 86 27 11 B 86 27 12 B 86 27 13 B 86 27 21 B 86 27 22 B 86 27 23 B 86 27 31 B 86 27 32 B 86 27 33 B	86 27 01 D 86 27 02 D 86 27 03 D 86 27 11 D 86 27 12 D 86 27 13 D 86 27 21 D 86 27 22 D 86 27 23 D 86 27 31 D 86 27 32 D 86 27 33 D
	1 Continuous pipe (Ø 200 on request): 	3 D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 28 01 B 86 28 02 B 86 28 03 B 86 28 11 B 86 28 12 B 86 28 13 B 86 28 21 B 86 28 22 B 86 28 23 B 86 28 31 B 86 28 32 B 86 28 33 B	86 28 01 D 86 28 02 D 86 28 03 D 86 28 11 D 86 28 12 D 86 28 13 D 86 28 21 D 86 28 22 D 86 28 23 D 86 28 31 D 86 28 32 D 86 28 33 D
	2 One inlet in flow direction right 90°: 	D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 28 01 B 86 28 02 B 86 28 03 B 86 28 11 B 86 28 12 B 86 28 13 B 86 28 21 B 86 28 22 B 86 28 23 B 86 28 31 B 86 28 32 B 86 28 33 B	86 28 01 D 86 28 02 D 86 28 03 D 86 28 11 D 86 28 12 D 86 28 13 D 86 28 21 D 86 28 22 D 86 28 23 D 86 28 31 D 86 28 32 D 86 28 33 D
	3 One inlet in flow direction left 90°: 	D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 28 01 B 86 28 02 B 86 28 03 B 86 28 11 B 86 28 12 B 86 28 13 B 86 28 21 B 86 28 22 B 86 28 23 B 86 28 31 B 86 28 32 B 86 28 33 B	86 28 01 D 86 28 02 D 86 28 03 D 86 28 11 D 86 28 12 D 86 28 13 D 86 28 21 D 86 28 22 D 86 28 23 D 86 28 31 D 86 28 32 D 86 28 33 D
	4 Two inlets in flow direction left + right 90°: 	4 D1: Ø 110 Ø 125 Ø 160 D2: Ø 110 Ø 125 Ø 160 D3: Ø 110 Ø 125 Ø 160 D4: Ø 110 Ø 125 Ø 160 D5: Ø 110 Ø 125 Ø 160	86 29 01 B 86 29 02 B 86 29 03 B 86 29 11 B 86 29 12 B 86 29 13 B 86 29 21 B 86 29 22 B 86 29 23 B 86 29 31 B 86 29 32 B 86 29 33 B	86 29 01 D 86 29 02 D 86 29 03 D 86 29 11 D 86 29 12 D 86 29 13 D 86 29 21 D 86 29 22 D 86 29 23 D 86 29 31 D 86 29 32 D 86 29 33 D
	Handles groundwater depths up to 500 mm Further accessories see page 48 - 49 Further installation depths (Ø 1000) up to a max. installation depth of 5 m can be individually created via the accessory parts, on request.			

Backwater inspection chambers for exterior installation

Backwater
protection

1

Backwater inspection chamber Ø 1000 / Komfort inspection chamber Ø 800/1000			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Hole saw <input type="checkbox"/> Ø 50, 75, 110, 125, 160 <input type="checkbox"/> Ø 200 ¹⁾ <input type="checkbox"/> Ø 250 ¹⁾ ¹⁾ Use a drill with at least 1000 W	- - -	50 100 50 102 50 103
	Pipe sealing gasket (EPDM) Use KESSEL hole saw when drilling,	Ø 110 Ø 125 Ø 160 Ø 200 Ø 250	850 117 850 118 850 119 182-875 182-879
	Cable piping gasket set ① Pipe sealing gasket ② PVC-collar plug ③ Twin flange Ø 110 ④ HT-collar plug ⑤ Cable connections ⑥ Retaining clip with screws for backwater inspection chambers Ø 1000 and clean out <i>Controllfix</i> with Komfort inspection chamber System Ø 800 and Ø 1000	Ø 110	85 410
	Spreader clamp for standard chamber system Ø 1000 For fixing an on-site interior drop pipe Ø 110 or Ø 160 for backwater inspection chambers Ø 1000	Ø 110 Ø 160	860 123 860 124
	Thermal insulation for insertion in telescopic upper sections Art.# 860 120, 860 121, 860 122, 860 125	-	860 189
	Access steps with hand rail and sleeve (pre-fitted)	-	860 126
	Embedded step with drilling template. The embedded step can be fitted to the upper section (Art. # 860 120, 860 121, 860 122) in the factory at an additional charge.	-	860 109
	Upper section made of polymer for standard bearing ring / concrete/cast covers, class A/B/D can be assembled with standard concrete rings <input type="checkbox"/> telescopically height adjustable from 50 to 280 mm <input type="checkbox"/> telescopically height adjustable from 50 to 550 mm	- -	860 122 860 125

Backwater inspection chambers for exterior installation

Backwater inspection chamber Ø 1000 / Komfort inspection chamber Ø 800/1000			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Cover plate in concrete/cast iron <input type="checkbox"/> Class A <input type="checkbox"/> Class B	- -	860 130 860 131
	Cover plate in cast iron, surface water tight <input type="checkbox"/> Class A, locked <input type="checkbox"/> Class B, locked <input type="checkbox"/> Class D, locked	- - -	860 132 860 133 860 136
	Cover plate in cast iron with ventilation <input type="checkbox"/> Class A <input type="checkbox"/> Class B <input type="checkbox"/> Class D, locked	- - -	860 134 860 135 860 137
	Upper section made of polymer with clamping ring, telescopic height adjustable from 100 to 550 mm, for cover class A/B/D <input type="checkbox"/> with cut-outs for a sludge bucket <input type="checkbox"/> locked, without cut-outs for a sludge bucket	- -	860 120 860 121
	Lip gasket for article # 86 01 22, 86 01 25, 86 01 20, 86 01 21	Ø 600	860 116
	Locking and removal key for chamber cover	-	915 595



2 Hybrid lifting stations

Ecolift **backwater valve lifting station**

Page **52 – 57**

For use in gravity-fed wastewater pipes.
Backwater protection as well as lifting
station activation during backwater.



SmartSelect simply makes planning easier -
 calculation module for lifting stations at
smartselect.kessel.de



Scan this QR code to directly view
 the corresponding product video.



Backwater valve and lifting station in one

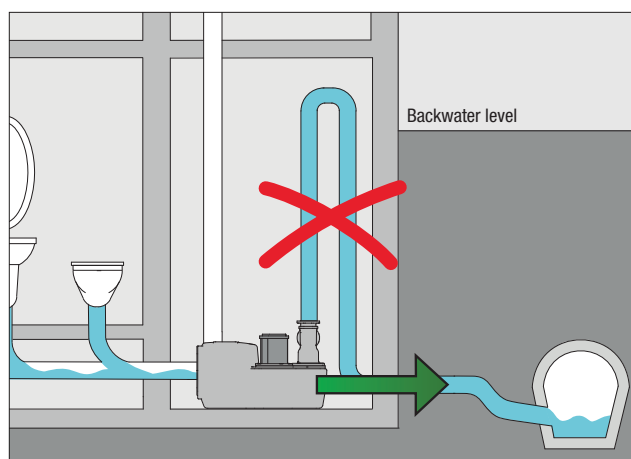


Modern and cost-saving hybrid solution with
 innovative double function.

As inexpensive as a backwater valve, as safe as a
 lifting station. **Ecolift** uses the natural gradient to the
 sewer for wastewater disposal. Efficient and
 economical pump use only in the event of backwater
 or basement flooding (with underground installation).
 Wastewater drained via pressure pipe to the sewer.

With technical approval: Z-53.2-487

HOW IT WORKS

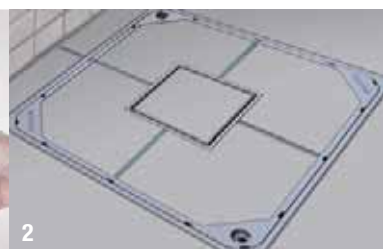


Why not take the direct route ?

Normal operation: use of the gravity drainage to the sewer.

Backwater: the backwater flap closes automatically.

Safe disposal via the backwater level.





Backwater lifting stations *Ecolift*

Installation in the concrete slab/floor or in an exposed wastewater pipe

KESSEL-INNOVATIONS

COMPLETE SET VERSION

Removable inlet/outlet connections - also in Ø 200 (Fig. 1).

FULLY OPEN PIPE PASSAGE

Fully open pipe passage with open backwater flap during normal conditions, flap is automatically closed with motor during backwater.

DRAIN FUNCTION

Tilable cover with drain function thanks to integrated drain cover with underground installation (Fig. 2).

With *Ecolift*, any surface water is pumped to the sewer despite backwater even in an emergency (Fig. 3).

INSTALLATION

IN THE CONCRETE SLAB/FLOOR

Installation in waterproof concrete with sealing gasket set as protection against groundwater / moisture.

Telescopic upper section can be twisted, tilted, height-adjusted.

CLEANING AND MAINTENANCE

Fast and simple cleaning and maintenance without tools (Fig. 4).

COMFORT CONTROL UNIT

SELF-DIAGNOSIS SYSTEM SDS

Plug & play Comfort control units with self-diagnosis system SDS with display - no electrician need during installation (Fig. 5).



3



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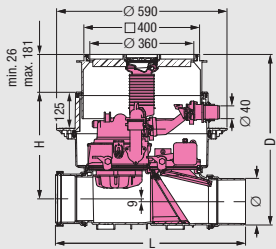
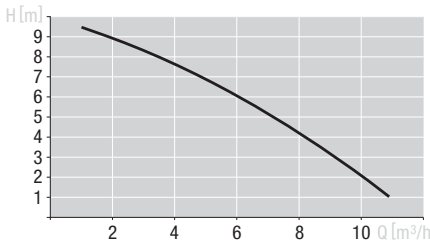


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Backwater lifting stations for wastewater with or without sewage


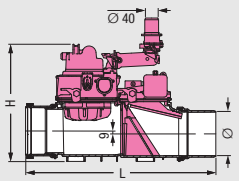
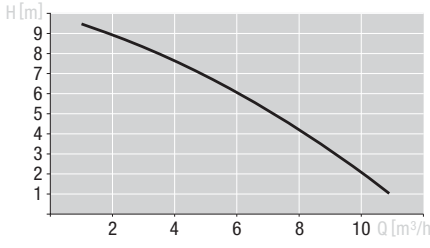
Ecolift Installation in a concrete slab/floor

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
  Installation area 750 x 750 mm	Ecolift backwater lifting station for pipes with natural gradient to the sewer for wastewater with or without sewage made of polymer For installation in a concrete slab/floor for installation depth (D) from 486 - 640 mm 1 with recessed cover for on-site tiling and drain (X) 2 with black cover and drain (S) Including installation set and cover plate with integrated drain function for surface water drainage. With integrated pump and motorized backwater flap. During normal conditions, the pipe cross section is open, in the case of backwater the valve is closed and locked completely automatically. During the backwater period, wastewater is drained using a pump with macerating (cutting) device, via a pressure pipe Ø 40 mm over the backwater level. Plug-in control and warning unit with display, self-diagnosis system (SDS) and battery buffering for maximum safety, with logbook (diary function) for reading the past operating conditions. Power cable / cable length: 5 m Mains voltage/frequency: 230 V AC / 50 Hz Protective rating: IP 54 (switch unit) Protective rating: IP 68 (motor) Ø 110 L: 642 mm H: 394 mm Ø 125 L: 645 mm H: 387 mm Ø 160 L: 656 mm H: 370 mm Ø 200 L: 720 mm H: 348 mm CE Certification: Z-53.2-487	1 Ø 110 Ø 125 Ø 160 Ø 200* 2 Ø 110 Ø 125 Ø 160 Ø 200*	21 100X 21 125X 21 150X 21 200X 21 100S 21 125S 21 150S 21 200S
			

Ecolift Installation in an exposed wastewater pipe

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 	Ecolift backwater lifting station for pipes with natural gradient to the sewer for wastewater with or without sewage made of polymer For installation in an exposed wastewater pipe With protective cover. With integrated pump and motorized backwater flap. During normal conditions, the pipe cross section is open, in the case of backwater the valve is closed and locked completely automatically. During the backwater period, wastewater is drained using a pump with macerating (cutting) device, via a pressure pipe over the backwater level. Plug-in control and warning unit with display, self-diagnosis system (SDS) and battery buffering for maximum safety, with logbook (diary function) for reading the past operating conditions. Power cable / cable length: 5 m Mains voltage/frequency: 230 V AC / 50 Hz Protective rating: IP 54 (switch unit) Protective rating: IP 68 (motor) Ø 110 L: 642 mm H: 405 mm Ø 125 L: 645 mm H: 405 mm Ø 160 L: 656 mm H: 405 mm Ø 200 L: 720 mm H: 405 mm CE Certification: Z-53.2-487	Ø 110 Ø 125 Ø 160 Ø 200*	21 100 21 125 21 150 21 200
			

Backwater lifting stations for wastewater with or without sewage

Installation example *Ecolift*



Ecolift ① is the only lifting station that makes use of the gradient to the sewer. This means that the pump is only in use in the event of backwater or basement flooding (integrated drain system). This saves costs and wear and tear of the pump. In the normal state, *Ecolift* provides a clear pipe cross-section and only locks in the event of backwater. Control is by means of the Comfort control unit ② with self-diagnosis system SDS. The sealing gasket set ③ makes installation in waterproof concrete possible.

Installation example *Ecolift*



Ecolift ① is the only lifting station that makes use of the gradient to the sewer. This means that the pump is only in use in the event of backwater. This saves costs and wear and tear of the pump. In the normal state, *Ecolift* provides a clear pipe cross-section and only locks in the event of backwater. Control is by means of the Comfort control unit ② with self-diagnosis system SDS.

Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.
- **New Comfort version** with digital display which shows operating status and servicing instructions as well as connection option for building management system.
- **Integrated drain function** to drain surface water. Continual drainage even in the event of incoming flood water or a pipe burst.
- **Variable upper section** rotatable, tiltable and height adjustable.
- **Installation in waterproof concrete.** Gasket set (Art. # 83 023) to prevent groundwater infiltration.
- **Covers can be individually tiled**
No open pump sump or maintenance space required per EN 12056, Part 4 - means more living space.
- **Removable inlet/outlet connections also in Ø 200** Socket/spigot for customized connections, variable inlet and outlet sizes available.



Scan this QR code to directly view the corresponding product video.

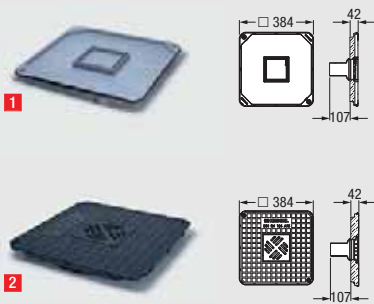



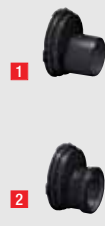



Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.
- **New Comfort version** with digital display which shows operating status and servicing instructions as well as connection option for building management system.
- **Removable inlet/outlet connections also in Ø 200** socket/spigot for customized connections, variable inlet and outlet sizes available.
- **Installation body with only 9 mm gradient** for installation in a concrete slab / floor or for fitting into an exposed pipeline.



Ecolift			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Waterproof concrete installation tested by MFPA Leipzig UB 5.1/11-452-1</p>	Gasket set for installation in waterproof concrete consisting of: Counter flange made of polymer, incl. screws, elastomer waterproof membrane in NK/SBR Ø 800 mm for article numbers: 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	-	83 023
	Extension section with centre flange with elastomer sealing sheet made of NK/SBR Ø 800 mm, incl. screws for article numbers: 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	-	83 075
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	Extension section with flange made of polymer, max. extension 180 mm, incl. gasket For gasket set Art. # 83 023 for article numbers: 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	-	83 071
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	Extension section made of polymer, max. extension 180 mm, incl. gasket for article numbers: 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	-	83 070
	Pressure pipe set Incl. 5 m pressure pipe hose Ø 40, Adaptor with pipe clamp for article numbers: 21 100, 21 125, 21 150, 21 200, 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	Ø 40	28 040
	Audible alarm Electronic audible alarm (continuous tone) with connection cable 20 m Minimum current consumption 5 - 25 mA, audible tone 4.7 KHz - 90 dB, large voltage range 6 - 24 V DC; Dimension Ø 31 x 15 mm. suitable for all control units with SDS function	-	20 162
	Potential-free contact Change-over contact 42 V / 0.5 A; Additional circuit board with a potential-free contact e.g. for connecting control unit to BMS (Building Management System). suitable for all control units with SDS function	-	80 072

Ecolift			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Cover plate, surface water tight Class A 15 With drain Ø 75, includes Multistop odour, foam, rodent and insect stop incl. gasket 1 recessed for on-site tiling, grey, for tile thicknesses of 18 mm for article numbers: 21 100 X, 21 125 X, 21 150 X, 21 200 X	-	83 045
	2 with integrated grating, black for article numbers: 21 100 S, 21 125 S, 21 150 S, 21 200 S	-	83 046
	Multistop odour, foam, rodent and insect stop for article numbers: 83 045 and 83 046	-	43 500
	Hair filter made of polymer for article numbers: 83 045 and 83 046	-	43 700
	Upper section made of polymer, max. extension 180 mm, height adjustable for article numbers: 21 100 X/S, 21 125 X/S, 21 150 X/S, 21 200 X/S	-	83 061
	Inlet / Outlet 1 Spigot 2 Socket	Ø 110 Ø 125 Ø 160 Ø 200	83 081 83 082 83 083 83 084
	Removable inlets / outlets, can be mounted in various dimensions.	Ø 110 Ø 125 Ø 160 Ø 200	83 085 83 086 83 087 83 088
	Cable extension set (for motor) 10 m cable length A maximum of two cable extension sets can be connected	-	80 890
	Cable extension set (for probe) 10 m cable length A maximum of two cable extension sets can be connected	-	80 889
	Cable extension set (for pump) 10 m cable length A maximum of two cable extension sets can be connected for all versions for installation in a concrete slab/floor and in an exposed wastewater pipe	-	80 891



3 Wastewater lifting stations

Lifting stations

for wastewater containing raw sewage

for free standing installation and for installation in a concrete floor	Page 66 – 81
for underground installation	Page 94 – 101

Lifting stations

for wastewater without sewage

Complete range for free-standing installation and for installation in a concrete floor	Page 82 – 91
for underground installation	Page 102 – 105

Submersible pumps

for fixed or mobile use,
for residential, commercial, public
and industrial applications

Warning and control units

Convenient monitoring and control
of lifting stations and pumps

Water flows upwards?

It often happens that washwater and wastewater cannot be carried off because the sewer is higher than the drainage point in the basement. In this case a lifting station or pump must be used. Lifting stations pump the wastewater via pressure pipes into the sewer. According to EN 12056-4 the pressure pipe must be routed above the backwater level.

Different product lines are available for the two different types of wastewater

For wastewater with sewage



When it comes to draining toilets and urinals, sewage lifting stations must be used. The lifting stations of the **Aqualift F** series are available for installation in the interior or exterior of buildings. All lifting stations are also available as twin stations.

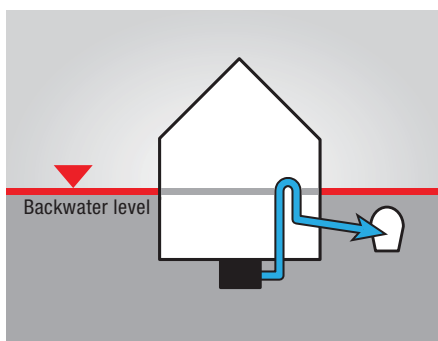


For wastewater without sewage

Household wastewater from washing machines, showers or bathtubs. The lifting stations **Aqualift S** and **Minilift** can be used for these drainage purposes.

The pressure pipe must be above the backwater level

Dimensioning of the pump capacity must be done according to EN 12056-4. The overall feed flow and overall pumping height must be determined for this purpose. The pump has to be designed in such a way that the flow rate determined can be pumped over the required height. Avoid making the pump significantly larger than necessary in order to keep energy consumption to an appropriate level. The flowing speed in the pressure pipe must not fall short of 0.7 m/s as otherwise deposits will occur and lead to blockages sooner or later. Quite often, the pressure pipe is not routed via the backwater level as a backwater loop. The pressure pipe is routed upwards, but only to the cellar ceiling. If this is below the backwater level, any backwater from the sewer can force its way through the pressure pipe to the lifting station. The backwater preventer used here, which is only to prevent the pressure pipe from running dry, does not represent safe protection from backwater.



- If the sewer is higher than the drainage point in the basement, a lifting station has to be used



SmartSelect simply makes planning easier - calculation module for lifting stations at smartselect.kessel.de

The appropriate lifting station

The reliable function depends on selecting the appropriate lifting station and also on the technically correct installation of the lifting station. KESSEL offers two types of pumps. Non-chokable pumps and macerator pumps. Each of these pumps has special properties.



Non-chokable pumps have a large free space inside the pump housing. As a consequence, solid and long fibrous, high consistency substances, such as sanitary towels, textiles etc., can pass through the pump housing easily. It is often necessary to expend more energy to achieve an efficient pump output.



Macerator pumps are especially suitable for long fibres and where solid bodies can be comminuted, even larger sizes. This allows the wastewater to be transported reliably through small pressure pipes even over long distances (pressure drainage).

Particle size: The particle size of a pump specifies how many millimetres of free passage through the pump are available. According to the construction and testing regulations (EN 12050-2) for wastewater lifting stations for wastewater without sewage (grey water), the minimum solids size (particle size) in the overall system is 10 mm, for wastewater with sewage (black water) it is 40 mm (EN 12050-1).

Pumping volume: Another important point is the pumping volume of a lifting station. EN 12056-4 requires the pumping volume of the system to be larger than the total volume of the pressure pipe. This means that the wastewater in the pressure line is replaced during every pumping process. And if the backwater preventer is leaking this does not lead to the pump switching on and off all the time.



Explosion protection: Misuse or accidents can lead to substances which can form an explosive mixture getting into a lifting station or pumping station. If a potentially explosive atmosphere is to be expected, systems with explosion protection (ATEX) must be planned.

Installation options



■ Example for installation
in an exposed wastewater pipe



■ Example for installation
in a concrete slab/floor



■ Example for underground installation

Exposed installation



Free-standing lifting stations can be installed very easily and without a great deal of expenditure, and are suitable for applications from single-family homes to industrial companies. Smaller systems can easily be placed in an existing basement room. Larger systems are better installed in a separate utility room.

Installation in a concrete floor



The use of basements to provide further space for accommodation is becoming increasingly important. Frequently, toilets, showers or washing facilities are located in the basement. For such applications, KESSEL supplies lifting stations for installation in concrete floors. These lifting stations simply disappear in the ground and offer another special advantage. The drain integrated in the cover absorbs all surface water. Even in the event of a pipe burst or leak, the pump discharges water continually over the backwater level.

Underground installation



Installing lifting stations within a building often wastes valuable living space as well as potentially causing operational noise. New solutions are available giving the home owner decisive advantages. Often the correct choice is to move the lifting station outdoors - freeing up living space, eliminating operation noise as well as making access for servicing companies more convenient. Depending on the requirements KESSEL offers single or twin pump systems and various chamber diameters based on the size of the pumps required.

General information and standards

Level sensors / probes and alarm probes

Level sensors and **probes** measures the level of the pumping medium in the collecting tank of a lifting station and trigger the pumping process of one or several pumps from a specified filling level onward. If the level in the collecting tank continues to rise, an acoustic warning signal can be give via an **alarm probe** (which also measures the level of the pumping medium).



Pressure sensor

The closed air volume within a submersible pipe / bell is compressed by a rising water level in the collecting tank of a lifting station. The resulting difference in air pressure is measured by a pressure sensor in the control unit and used to regulate the starting and stopping of the lifting station pumping process. Pneumatic level measurement is a straightforward and low-cost method of level measurement, but does have disadvantages when the system is used irregularly, when wastewater is extremely greasy, where pressure hoses are very long or condensate in the pressure hose impedes measurement.



Conductance probe

A conductance probe uses AC voltage and measures whether there is any conductive fluid between two measuring points. If there is, current flows and the control unit triggers the pumping process. Thus a conductance probe is a simple and low-cost method of level measurement. It only works with conductive fluids, however, and cannot be used for the pumping of rainwater or condensate.



Float switch

Float switches are switching devices which are actuated by a float which swims on the surface of the pumping medium.

If the water level rises within the collecting tank, the switching device is triggered via the change in level of the float, and the lifting station pump is activated.

Float switches are a simple and proven type of level measurement. They have some weaknesses when heavily soiled wastewater is to be pumped, since material becomes deposited on the float and can interfere with level measurement.



Level sensor

With this method of hydrostatic pressure measurement, the water pressure is measured using a semiconductor and the downstream electronics generate an analogue signal from this. The pumps are activated from a specified level onward.

A level probe can be used to measure different levels. This makes it possible to measure both the alarm level and pumping level and save on a second probe. However, such level probes usually cost more than other level sensors.



Optical probe

In addition to the level sensors described above, an optical probe can be used as an alarm probe. If the sensor surface becomes wet, the refraction angle of an infrared signal changes, signalling that the alarm level has been reached.

The optical probe is ideal as an alarm probe since it works reliably even if it has not been in use for a long time. An alarm can be triggered by mistake, however, when the wastewater is warm (dripping condensate) or heavily foaming.

INFORMATION

Do you require more detailed information? Our Service Centre will be happy to help.

You can find your personal KESSEL contact on page 3 of this catalog!

Complete System Solution

In addition to individual lifting and pumping station, KESSEL also offers other systems the drainage of buildings. Do you hvae a natural gradient to the sewer?

- World innovation *Ecolift* - the alternative to a standard lifting station with gravity sloped drainage see chapter 2 "hybrid lifting systems".
- Backwater valves for interior and underground installation see chapter 1 "backwater valves".

Individual Solutions

Thanks to the knowledge and possibilities in the field of polyethylene technology KESSEL is not only able to manufacture series products, but also special solutions in accordance with project-specific requirements. For additional information please take a look at the Individual Solutions section of this catalogue on page 283.

References

Over the past decades, KESSEL products have proven themselves countless times in destinations all over the world. Scan the following QR code to directly view our list of references.



www.kessel.com/references

Which standards must be taken into account?

EN 12056 Gravity drainage systems inside buildings

EN 752 Drainage systems outside buildings

EN 13564 Backwater valves for buildings

EN 1253-5 Drains for buildings with volatile liquid traps

EN 12050 Lifting stations for buildings

Selection criteria - lifting stations

FOR WASTEWATER CONTAINING RAW SEWAGE

	<i>Ecolift</i>	<i>Aqualift F Compact</i>	<i>Aqualift F</i>	<i>Aqualift F XL</i>	<i>Aqualift F XXL</i>	<i>Aqualift F Ø 600</i>	<i>AP 501 Ø 800/1000</i>	<i>Aqualift F Ø 1000</i>
Interior installation	✓	✓	✓	✓	✓			
Exterior installation			✓			✓	✓	✓
Input power	1 kW	1 kW	1.4 - 3 kW	1.4 - 5 kW	2.6 - 4.8 kW	1 kW	1.1 - 1.25 kW	1.3 - 1.9 kW
Max. pumping height	9 m	9 m	16 m	27 m	20 m	9 m	12 m	28 m
Pressure pipe diameter	40 mm	40 mm	110 mm	110 mm	110 mm	40 mm	63 / 90 mm	63 / 90 mm
Pump	Macerator	Macerator	Impeller	Impeller	Impeller	Macerator	Impeller	Impeller
Products see page	54	66	72	74 - 76	78	96	98	94

FOR WASTEWATER WITHOUT SEWAGE

	<i>Minilift</i>	<i>Aqualift S</i>	<i>Aqualift S Ø 600</i>	<i>Aqualift S Ø 1000</i>
Interior installation	✓	✓		
Exterior installation			✓	✓
Input power	300 W	500 W	500 or 1000 W	500 or 1000 W
Max. pumping height	5 m	7 m	9 m	9 m
Pressure pipe diameter	40 mm	40 mm	40 mm	40 mm
Pump	Impeller	Impeller	Impeller	Impeller
Products see page	88	84 - 86	102	104



SmartSelect simply makes planning easier - calculation module for lifting stations at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Single- / Twin station
40 liter tank volume

Wastewater lifting stations
Aqualift F Compact
for installation in a concrete floor



SYSTEM ADVANTAGES

COMPLETE PACKAGE

Complete systems in mono- or duo-version ready for connection, including SDS Comfort control unit and backwater preventer.

PRESSURE PIPE

Pressure pipe set (Art. # 28 040) optional.
Ideal for building contractors.

EFFICIENT

Reduced switching cycles - low noise level. Fitted with pneumatic pressure control as standard.

DRAIN FUNCTION

Tileable cover (Fig. 1) with drain function thanks to integrated drain cover (Fig. 2) with underground installation.

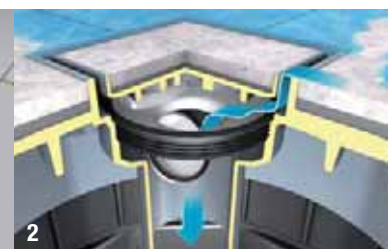
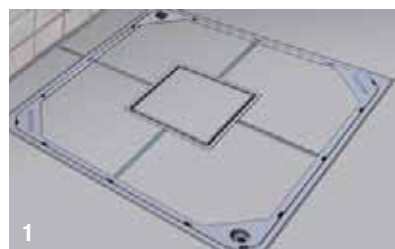
PRACTICAL

Pump removal without tools (Fig. 3).

Suitable for use in industrial and residential applications.

Installed in the concrete slab / floor, the lifting station is almost invisible thanks to the tilable cover.

With technical approval: Z-53.2-484





Single station
40 liter tank volume

Twin station
40 liter tank volume

Wastewater lifting stations **Aqualift F Compact** for free standing installation

COMFORT CONTROL UNIT

MENU NAVIGATION

User-friendly menu navigation in six languages with multi-lingual display (Fig. 4).

SELF-DIAGNOSIS SYSTEM SDS

Plug-and-play control units with self-diagnosis system SDS and monthly self-test. Comfort version with display for operating state and maintenance instructions.

FUNCTION PARAMETERS

Simple and customised adjustment of function parameters - can also be used for pumps from other manufacturers.

LOG BOOK

Electronic log book can be read out using USB flash drive.

READY FOR CONNECTION

230 Volt control unit ready for connection by coded connectors (Fig. 5) for pumps and pressure sensor - no need for a qualified electrician for connection.

POTENTIAL-FREE SWITCH CONTACT

Potential-free contact as an optional connection possibility for building management systems using 230 Volt control units.

REMOTE SIGNAL GENERATOR

Connection for remote signal generator.

GSM-INTERFACE

Relaying of collective error messages via potential-free contacts and GSM-interface optional.

USB-BOARD SOCKET

Including USB board socket on 230 Volt control units. For reading out the electronic log and downloading and uploading operation-related parameters. USB housing socket optional.

TeleControl TELEMETRIC SYSTEM

For connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.



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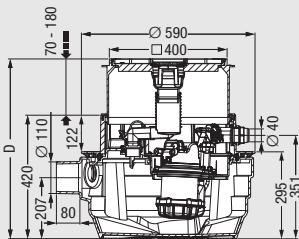



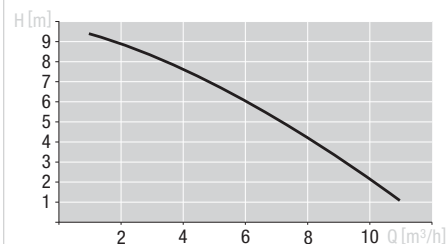
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Lifting stations for wastewater with or without sewage

Aqualift F Compact Mono Installation in a concrete slab/floor

Products


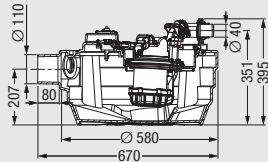

Illustration and dimensioned drawing	Article description	Input power	Voltage	Article #
  Illustration shows  Installation area 800 x 800 mm	Lifting station Aqualift F Compact Mono / Duo for installation in a concrete slab/floor, with recessed cover for on-site tiling and drain Installation depth (D) 490 to 600 mm With odour trap, sealing water height 50 mm With lateral inlet Ø 110 With telescopic upper section for free height and level adjustment, recessed cover for on-site tiling, made of polymer class A15, with moisture protective sealing flange.	1 1.0 kW	230 V	28 701-C
	2 Aqualift F Compact Mono with one removable pump , pressure sensor controlled, with integrated backwater flap 2 Aqualift F Compact Duo with two removable pumps , pressure sensor controlled, with integrated backwater flap With SDS control unit (self-diagnosis system) for fully automatic pump control, splashwater-protected (IP 54), wall mounted. Pressure connection: 1 1/2 inch outer thread or pressure pipe Ø 40 mm for PVC glued connection or pressure pipe set (accessories Art. # 28 040) Pumping height: max. 9.5 m, Q _{max} = 10.9 m ³ /h Voltage: 230 V ~ 50 Hz. Power cable: 5 m. A ventilation pipe must be provided for on site.	2 1.0 kW	230 V	28 704-C

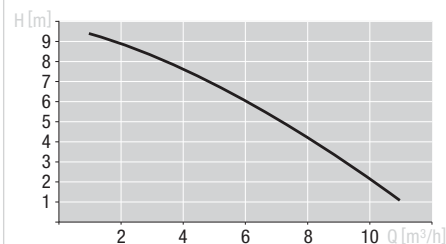


Type	SPZ 1000
Current type	Alternating current
Voltage	230 V
Current	4.9 A
Motor rating P1/P2	1080 W / 620 W
RPM	2800 min ⁻¹
Motor protection	integrated
Operating mode	S3 - 30%

Aqualift F Compact Duo Installation for free-standing installation

Products

  Illustration shows  Installation area 700 x 700 mm	Lifting station Aqualift F Compact Mono / Duo for free-standing installation With lateral inlet Ø 110	1 1.0 kW	230 V	28 711-C
	2 Aqualift F Compact Mono with one removable pump , pressure sensor controlled, with integrated backwater flap 2 Aqualift F Compact Duo with two removable pumps , pressure sensor controlled, with integrated backwater flap With SDS control unit (self-diagnosis system) for fully automatic pump control, splashwater-protected (IP 54), wall mounted. Pressure connection: 1 1/2 inch outer thread or pressure pipe Ø 40 mm for PVC glued connection or pressure pipe set (accessories Art. # 28 040) Pumping height: max. 9.5 m, Q _{max} = 10.9 m ³ /h Voltage: 230 V ~ 50 Hz. Power cable: 5 m. A ventilation pipe must be provided for on site.	2 1.0 kW	230 V	28 743-C



Type	SPZ 1000
Current type	Alternating current
Voltage	230 V
Current	4.9 A
Motor rating P1/P2	1080 W / 620 W
RPM	2800 min ⁻¹
Motor protection	integrated
Operating mode	S3 - 30%

Lifting stations for wastewater with or without sewage

Installation example *Aqualift F Compact*



The wastewater lifting station *Aqualift F Compact* ① takes over the complete basement drainage and pumps wastewater reliably and completely automatically through the pressure pipe set ② via the backwater level to the higher-level sewage system. The system is delivered as a ready-to-install chamber which can be installed in waterproof concrete with the aid of the extension section ③ and sealing gasket set ④. Control is by means of the Comfort control unit ⑤ with self-diagnosis system SDS. Installation in the concrete slab/floor makes the *Aqualift F Compact* the modern alternative to a "pump sump".

Installation example *Aqualift F Compact*



The wastewater lifting station *Aqualift F Compact* ① takes over the complete basement drainage and pumps wastewater with and without sewage reliably and completely automatically via the backwater level to the higher-level sewage system. Control is by means of the Comfort control unit ② with self-diagnosis system SDS. Its compact design makes the system ideal for renovation work.

Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.
- **Integrated drain function** to drain surface water. Continual drainage even in the event of incoming flood water or a pipe burst.
- **Variable upper section** rotatable, tiltable and height adjustable
- **Installation in waterproof concrete.** Gasket set (Art. # 83 023) to prevent groundwater infiltration.
- **Elegant optical appearance even for basement rooms which are used as living accommodation:** The modern alternative to a pump chamber.
- **TeleControl telemetric system** Relaying of full text messages to up to three mobile phones.
- **Chamber ready to be installed,** recessed installation in the concrete slab/floor possible with extension section.



Scan this QR code to directly view the corresponding product video.



Professional advantages

- **Plug & play Comfort control unit** with self-diagnosis system SDS for maximum safety.
- **Ideal for later installation,** including for renovation work, and for installation in an existing pump sump.
- **Space-saving** Compact and attractive-looking lifting station - base area only 70 x 70 cm.
- **Ready for connection** Assembled ready for connection with horizontal or vertical pressure outlet.
- **Further inlets** Possible connection of further inlets directly on site.



Aqualift F Compact			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
<p>For models made on or after Jan 2011</p>  <p>1 recessed for on-site tiling, grey, for tile thicknesses of 18 mm</p> <p>2 with integrated grating, black</p> <p>for article numbers: 28 701-C, 28 704-C</p>	<p>Cover plate, surface water tight Class A 15 With drain Ø 75, includes Multistop odour, foam, rodent and insect stop incl. gasket</p>	-	83 045
		-	83 046
	<p>Hair filter made of polymer for article numbers: 83 045 and 83 046</p>	-	43 700
 <p>1 black Ventilation always required when in use!</p> <p>2 recessed for on-site tiling, grey, for tile thicknesses of 18 mm Ventilation always required when in use!</p> <p>for article numbers: 28 701-C, 28 704-C</p>	<p>Cover plate, surface water tight Class A 15 made of polymer, incl. gasket Art. # 173-145</p>	-	83 050
		-	83 052
	<p>Upper section made of polymer, max. extension 180 mm, height adjustable for article numbers: 28 701-C, 28 704-C</p>	-	83 061
	<p>Transition section Ø 110 / 75 Ø 110 socket / Ø 75 spigot can be used as an upper section, incl. gasket for article numbers: 28 701-C, 28 704-C, 28 711-C, 28 743-C</p>	Ø 75/110	27 602
<p>NEW</p> 	<p>Extension section with centre flange with elastomer sealing sheet made of NK/SBR Ø 800 mm, incl. screws for article numbers: 28 701-C, 28 704-C</p>	-	83 075
 <p>WU Einbau geprüft von MFPA Leipzig UB 5.1/11-452-1</p>	<p>Gasket set for installation in waterproof concrete Consisting of: Counter flange made of polymer, incl. screws, elastomer waterproof membrane in NK/SBR Ø 800 mm for article numbers: 28 701-C, 28 704-C</p>	-	83 023
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	<p>Extension section with flange made of polymer, max. extension 180 mm, incl. gasket For gasket set Art. # 83 023 for article numbers: 28 701-C, 28 704-C</p>	-	83 071

Aqualift F Compact			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>When multiple extension sections are used make sure that access to valve is still possible!</p>	Extension section made of polymer, max. extension 180 mm, incl. gasket for article numbers: 28 701-C, 28 704-C	-	83 070
	Pressure pipe set Incl. 5 m pressure pipe hose Ø 40 for article numbers: 28 701-C, 28 704-C, 28 711-C, 28 743-C	Ø 40	28 040
	Audible alarm <input type="checkbox"/> 20 m cable length suitable for all control units	-	20 162
	Potential-free contact suitable for all control units 230 V: Wastewater station <i>Aqualift F</i> , Wastewater station <i>Aqualift F Compact</i> , Lifting station <i>Aqualift F Mono</i> 230 V	-	80 072
<div>NEW</div> 	Compressor set for bubble formation for use in combination with lifting stations and pumping stations with pressure control: <input type="checkbox"/> prevents soiling, compensates leaks, avoids condensate forming in the pressure hose, makes operation of systems possible with pressure hose lengths > 10 m, including connection T-piece, including 10 m pressure hose.	-	28 048
<div>NEW</div> 	Retrofit kit alarm float switch for lifting stations Aqualift F Compact Can be combined with 230 V Comfort control units. Comprises a float switch, float switch bracket and 5 m connection cable.	-	28 016
<div>NEW</div> 	TeleControl telemetric system for connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.	-	28 792
	TeleControl antenna booster for TeleControl telemetric system incl. 2.5 m cable to improve reception. With magnetic base.	-	28 793
	Antenna booster extension cable cable length 2.5 m	-	28 794



SmartSelect simply makes planning easier -
calculation module for lifting stations at
smartselect.kessel.de

Powerful *Aqualift F / XL* lifting stations

Lifting stations

3



For industrial, municipal and private use.
All the components of the **XL** lifting stations have been designed as a modular system. It comprises three tank sizes with volumes of 200, 300 and 450 litres. The pumps are available in versions from 1.400 to 5.500 Watts. The tanks fit through standard size 800 doors.



50 liter tank volume

120 liter tank volume

Lifting stations **Aqualift F**
for free-standing installation

POWERFUL PUMPS

NON-CHOKABLE IMPELLER

Wastewater pumps with non-chokable impeller for pumping wastewater with and without sewage in accordance with EN 12050-1 and 2.

S1 PUMPS

S1 continuous duty pumps for heavy flow applications (rainwater) with 1400 to 4500 Watts (Fig. 1).

SINGLE OR TWIN PUMP LIFTING STATIONS

Includes digital display control unit and non-return valve.

INSTALLATION

INLET CONNECTION

Size Ø 110 mm or Ø 160 mm selected on-site (Fig. 2).
Additional inlet connections on-site.



1



2



Lifting stations *Aqualift F XL* for free-standing installation

COMFORT CONTROL UNIT

USER FRIENDLY CONTROL UNIT OPERATION

User friendly control unit operation with multilingual digital display (Fig. 3).

INTEGRATED SELF-DIAGNOSIS-SYSTEM

With integrated Self-Diagnosis-System and battery buffering continually monitors all electronic functions.

OPERATIONAL PARAMETERS

Operational parameters can easily be custom set by operator - Control unit also for use with pumps from other manufacturers.

ELECTRONIC LOG-BOOK

Electronic log-book function past history of pump operation is shown on digital control unit display.

230 VOLT CONTROL UNIT IS PLUG-IN-READY

230 Volt control unit is plug-in-ready - no electrician required for connection (Fig. 4).

POTENTIAL-FREE CONTACT

BMS (Building Management System) connection standard with all 400 Volt systems (optional with 230 Volt systems).

REMOTE SIGNAL GENERATOR

Connection for remote audible alarm.

USB-CONNECTION PORT


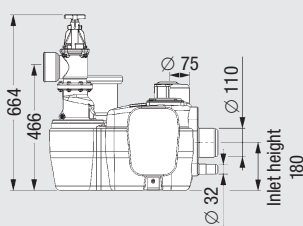
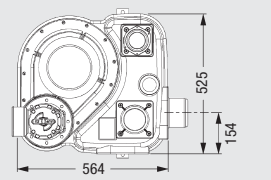


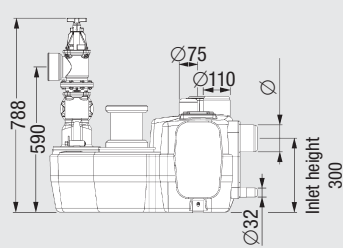
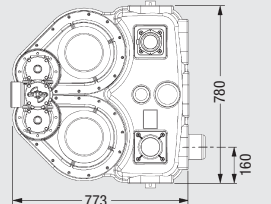

Includes internal USB connection port for 230 Volt control units. For read-out of electrical logbook and down / uploading of operational parameters (Fig. 5).

TeleControl TELEMETRIC SYSTEM

For connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.



Lifting stations for wastewater with or without sewage

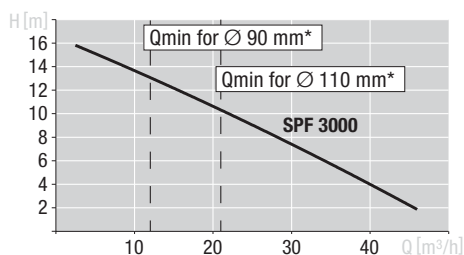
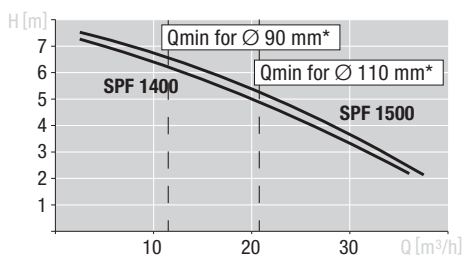
Aqualift F Mono 50 liters				Products
Illustration and dimensioned drawing	Article description	Voltage	SPF	Article #
 <p>Illustration shows Art. # 28 646-C</p>   <p>Illustration shows Art. # 28 648-C</p>	Lifting station Aqualift F Mono for free-standing installation in frost-free rooms Tank volume: 50 liters Pump volume: 20 liters Consisting of: Polyethylene storage chamber with clean-out opening. Connection for inlet Ø 110 (inlet height 180 mm) and ventilation Ø 75, connection coupling for manual diaphragm pump Ø 32. Pressure sensor controlled wastewater pump with non-chokable impeller to pump wastewater with or without sewage (open channel passage 40 mm). Pump is rated submersible (IP 68), power cable length 10 m. Vertical / horizontal outlet with integrated non-return valve, connection coupling Ø 110 with hose section 1 without closure valve (vertical pressure outlet) 2 with closure valve (horizontal pressure outlet) Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook; control unit is splash proof (IP 65), wall mounted, voltage 230 / 400 V at 50 Hz. With potential-free contact. S1 continuous duty pumps available upon request Total weight approx. 44 kg.	1 230 V 400 V 400 V 2 230 V 400 V 400 V	1400-S3 1500-S3 3000-S3 1400-S3 1500-S3 3000-S3	28 646-C 28 751 28 752 28 648-C 28 753 28 754
				
Aqualift F Duo 120 liters				Products
 <p>Illustration shows Art. # 28 628-C</p>   <p>Illustration shows Art. # 28 629-C</p>	Lifting station Aqualift F Duo for free-standing installation in frost-free rooms Tank volume: 120 liters Pump volume: 50 liters Consisting of: Polyethylene storage chamber with clean-out opening. Connection for inlet Ø 110 (inlet height 300 mm) and ventilation Ø 75, connection coupling for manual diaphragm pump Ø 32. Pressure sensor controlled twin wastewater pumps with non-chokable impeller to pump wastewater with or without sewage (open channel passage 40 mm). Pump is rated submersible (IP 68), power cable length 10 m. Vertical/ horizontal outlet with integrated non-return valve, connection coupling Ø 110 with hose section 1 without closure valve (vertical pressure outlet) 2 with closure valve (horizontal pressure outlet) Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook; control unit is splash proof (IP 65), wall mounted, voltage 230 / 400 V at 50 Hz. With potential-free contact. S1 continuous duty pumps available upon request Total weight approx. 84 kg.	1 230 V 400 V 400 V 2 230 V 400 V 400 V	1400-S3 1500-S3 3000-S3 1400-S3 1500-S3 3000-S3	28 628-C 28 764 28 765 28 629-C 28 766 28 767
				

Lifting stations for wastewater with or without sewage

Installation example *Aqualift F*



The lifting station *Aqualift F* ① is ideal for free-standing installation in frost-protected areas. The compact and powerful lifting station with control unit disposes of black water reliably and fully automatically through the pressure pipe ② to the higher-level sewage system.



* according to EN 12056-4

Type	SPF 1400	SPF 1500	SPF 3000
Input Power (P1)	1.6 kW	1.4 kW	3.2 kW
Power (P2)	1.1 kW	1.1 kW	2.7 kW
Voltage	230 V	400 V	400 V
Frequency	50 Hz	50 Hz	50 Hz
Amperage	7.3 A	2.7 A	5.4 A
Fuses	16 A surge-proof	3 x 16 A surge-proof	3 x 16 A surge-proof
Cable connections	10 m Length, 7 x 1.5 mm ²	10 m Length, 7 x 1.5 mm ²	10 m Length, 7 x 1.5 mm ²
Media temperature	40°C	40°C	40°C
Weight (Pump)	23 kg	24 kg	24 kg
Protection	IP 68	IP 68	IP 68
Operating mode	S3 60 % power on duration	S3 60 % power on duration	S3 30 % power on duration
Rpm	1.370	1.415	2.845

Professional advantages

Quality and reliability are our strengths:

- **Space-saving installation** thanks to the possibility of inlet connection Ø 110 from above and simple routing of the pressure pipe in the corner of the room.
- **Simple connect-and-go connection** with horizontal or vertical pressure outlet
- **Easy to retrofit** with the suitable closure valve.
- Variable connection possibilities for further inlets directly on site.



Comfort control unit

- User friendly navigation in multi-line display
- With self-diagnosis system SDS and memory function for the next service
- Displays current operational status
- Simple setting of parameters relevant for the function
- Operating hours counter
- Optional forwarding of alarm and general fault signals via a GSM interface
- Multilingual display (EN, DE, FR, IT, PL, NL)

Lifting stations for wastewater with or without sewage

Aqualift F XL 200 liters

Products

Illustration and dimensioned drawing

NEW



Illustration shows Art. # 11 096

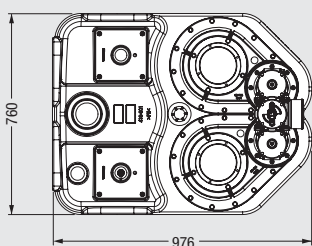
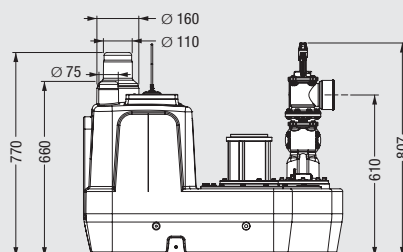
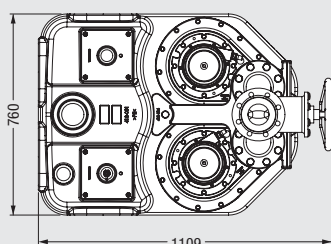
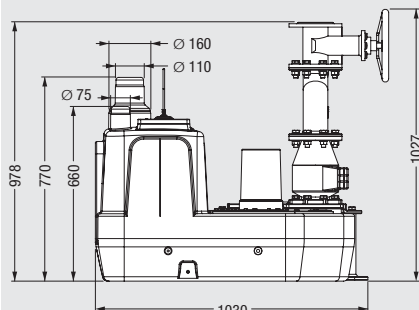


Illustration shows Art. # 11 075



Lifting station *Aqualift F XL* for free standing installation Tank volume: 200 liters Pump volume: 120 liters

Lifting station with one/two SPF pumps for wastewater with or without sewage for free-standing installation in frost-free rooms

Consisting of:

Polyethylene storage chamber with clean-out opening. Spigots for vertical inlet $\varnothing 110$ mm/160 mm, ventilation $\varnothing 75$ mm and for manual diaphragm pump $\varnothing 32$ mm. Horizontal inlet $\varnothing 50$ mm to $\varnothing 200$ mm by sawing.

Pressure sensor controlled **single / twin wastewater pump** with non-chokable impeller to pump wastewater with or without sewage (open channel passage 40 mm). Pump is rated submersible (IP 68), power cable length 10 m.

Operating mode:

S1: Continuous duty

S3: 30 % power on duration

Vertical/ horizontal outlet with integrated non-return valve, with/without closure valve (provided loose), with hose section or flange.

Single pump lifting stations:

1 without closure valve (vertical pressure outlet)

2 with plastic closure valve
(horizontal pressure outlet $\varnothing 110$)

Twin pump lifting stations:

3 without closure valve (vertical pressure outlet)

4 with plastic closure valve
(horizontal pressure outlet $\varnothing 110$)

5 with cast iron closure valve
(vertical pressure outlet DN 80)


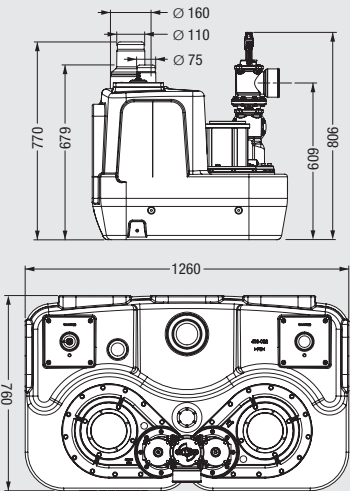

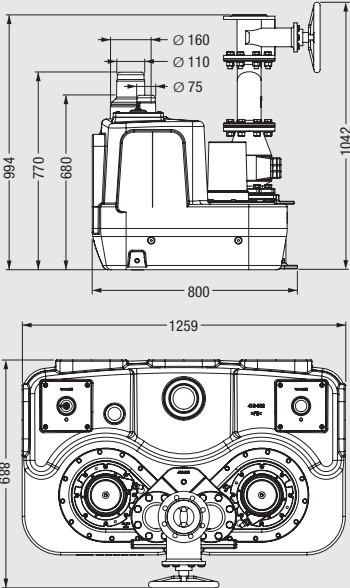
Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook; control unit is splash proof (IP 65), wall mounted, voltage 230 V or 400 V at 50 Hz.

With potential-free/BMS contact (optional at 230 V).

CE EN 12050 - 1

Voltage	SPF	Article #
1 230 V	1400-S3	11 000
400 V	1500-S3	11 018
400 V	3000-S3	11 036
2 230 V	1400-S3	11 002
400 V	1500-S3	11 020
400 V	3000-S3	11 038
3 230 V	1400-S3	11 001
230 V	1400-S1	11 085
400 V	1500-S3	11 019
400 V	3000-S3	11 037
400 V	1500-S1	11 095
400 V	3000-S1	11 105
4 230 V	1400-S3	11 003
230 V	1400-S1	11 086
400 V	1500-S3	11 021
400 V	3000-S3	11 039
400 V	1500-S1	11 096
400 V	3000-S1	11 106
5 400 V	3000-S3	11 043
400 V	4500-S3	11 062
400 V	5500-S3	11 075
400 V	3000-S1	11 108
400 V	4500-S1	11 121

Lifting stations for wastewater with or without sewage

Aqualift F XL 300 liters				Products
Illustration and dimensioned drawing	Article description	Voltage	SPF	Article #
<div> <div>NEW</div>  <p>Illustration shows Art. # 11 101</p>   <p>Illustration shows Art. # 11 113</p>  </div>	<p>Lifting station Aqualift F XL for free standing installation Tank volume: 300 liters Pump volume: 175 liters</p> <p>Twin station with two SPF pumps for wastewater with or without sewage for free-standing installation in frost-free rooms</p> <p>Consisting of: Polyethylene storage chamber with clean-out opening. Spigots for vertical inlet Ø 110 mm/160 mm, ventilation Ø 75 mm and for manual diaphragm pump Ø 32 mm. Horizontal inlet Ø 50 mm to Ø 200 mm by sawing.</p> <p>Pressure sensor controlled twin wastewater pumps with non-chokable impeller to pump wastewater with or without sewage (open channel passage 40 mm). Pump is rated submersible (IP 68), power cable length 10 m.</p> <p>Operating mode: S1: Continuous duty S3: 30 % power on duration</p> <p>Vertical/ horizontal outlet with integrated non-return valve, with/without closure valve (provided loose), with hose section or flange.</p> <p>3 without closure valve (vertical pressure outlet) 4 with plastic closure valve (horizontal pressure outlet Ø 110) 5 with cast iron closure valve (vertical pressure outlet DN 80)</p> <p>Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook; control unit is splash proof (IP 65), wall mounted, voltage 230 V or 400 V at 50 Hz. With potential-free/BMS contact (optional at 230 V).</p>	<div> <div>3</div> <div>230 V</div> </div> <div> <div>230 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>4</div> <div>230 V</div> </div> <div> <div>230 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>5</div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div> <div> <div>400 V</div> </div>	<div> <div>1400-S3</div> </div> <div> <div>1400-S1</div> </div> <div> <div>1500-S3</div> </div> <div> <div>3000-S3</div> </div> <div> <div>1500-S1</div> </div> <div> <div>3000-S1</div> </div> <div> <div>1400-S3</div> </div> <div> <div>1400-S1</div> </div> <div> <div>1500-S3</div> </div> <div> <div>3000-S3</div> </div> <div> <div>1500-S1</div> </div> <div> <div>3000-S1</div> </div> <div> <div>3000-S3</div> </div> <div> <div>4500-S3</div> </div> <div> <div>5500-S3</div> </div> <div> <div>3000-S1</div> </div> <div> <div>4500-S1</div> </div>	<div> <div>11 010</div> </div> <div> <div>11 090</div> </div> <div> <div>11 028</div> </div> <div> <div>11 046</div> </div> <div> <div>11 100</div> </div> <div> <div>11 110</div> </div> <div> <div>11 012</div> </div> <div> <div>11 091</div> </div> <div> <div>11 030</div> </div> <div> <div>11 048</div> </div> <div> <div>11 101</div> </div> <div> <div>11 111</div> </div> <div> <div>11 052</div> </div> <div> <div>11 067</div> </div> <div> <div>11 080</div> </div> <div> <div>11 113</div> </div> <div> <div>11 124</div> </div>

Lifting stations for wastewater with or without sewage

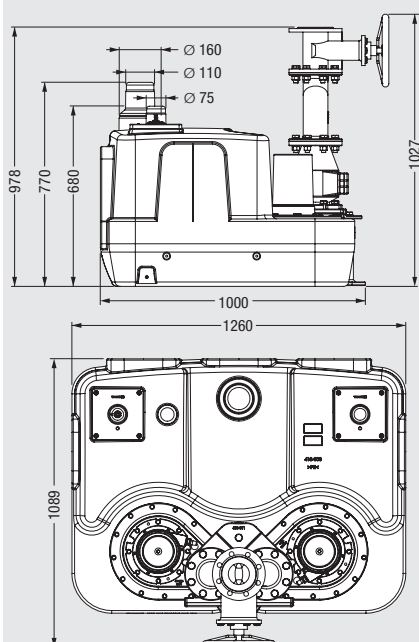
Aqualift F XL 450 liters

Products

Illustration and dimensioned drawing



Illustration shows Art. # 11 127



Lifting station **Aqualift F XL** for free standing installation

Tank volume: 450 liters
Pump volume: 250 liters

Twin station with two SPF pumps for wastewater with or without sewage for free-standing installation in frost-free rooms

Consisting of:

Polyethylene storage chamber, with air pressure level detector, clean-out opening.
Spigots for vertical inlet Ø 110 mm/160 mm, ventilation Ø 75 mm and for manual diaphragm pump Ø 32 mm.
Horizontal inlet Ø 50 mm to Ø 200 mm by sawing.

Pressure sensor controlled **twin wastewater pumps** with non-chokable impeller to pump wastewater with or without sewage (open channel passage 40 mm).
Pump is rated submersible (IP 68), power cable length 10 m.

Operating mode:

S1: Continuous duty

S3: 30 % power on duration

Vertical/ horizontal outlet with integrated non-return valve, with/without closure valve (provided loose), with hose section or flange.

3 without closure valve (vertical pressure outlet)

4 with plastic closure valve
(horizontal pressure outlet Ø 110)

5 with cast iron closure valve
(vertical pressure outlet DN 80)

Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook; control unit is splash proof (IP 65), wall mounted, voltage 230 V or 400 V at 50 Hz.
With potential-free/BMS contact (optional at 230 V).

CE EN 12050-1

Voltage

SPF

Article

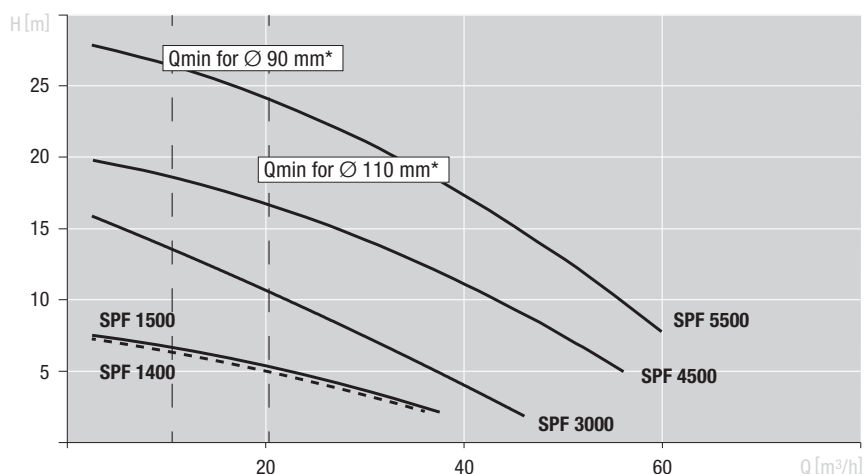
3	400 V	3000-S3	11 054
	400 V	3000-S1	11 115
4	400 V	3000-S3	11 055
	400 V	3000-S1	11 116
5	400 V	3000-S3	11 057
	400 V	4500-S3	11 070
	400 V	5500-S3	11 083
	400 V	4500-S1	11 127

Lifting stations for wastewater with or without sewage

Installation example *Aqualift F XL*



The wastewater is drained by the *Aqualift F XL* ① lifting station fully automatically upwards via the backwater loop to the sewage system. A greater pumping capacity if more wastewater occurs is guaranteed by a second pump switching on automatically. Long pump service life thanks to alternating operation. The lifting stations of the *Aqualift F XL* series are particularly suitable for industrial and municipal applications, such as downstream from a grease separator ②.



* according to EN 12056-4

Type	SPF 1400	SPF 1500	SPF 3000	SPF 4500	SPF 5500
Input Power (P1)	1.6 kW	1.4 kW	3.2 kW	4.5 kW	5.7 kW
Power (P2)	1.1 kW	1.1 kW	2.7 kW	3.7 kW	4.7 kW
Voltage	230 V	400 V	400 V	400 V	400 V
Amperage	7.3 A	2.7 A	5.4 A	7.4 A	9.1 A
Operating mode	S1	S1	S1	S1	S3 30 % power on duration
Weight	99 kg	98 kg	188 kg	189 kg	211 kg

Professional advantages

■ Inlet connection

Size Ø 110 mm or
Ø 160 mm selected
on-site



■ Additional inlet connections on-site

Inlets from size
Ø 50 mm to
Ø 200 mm
inlets can be easily installed.



■ Polymer gate closure valves and fittings for SPF 1400, 1500, 3000 models. Cast iron gate closure valves and fittings for SPF 4500 and 5500 models.

Cast iron systems also available for other pump models where excessive return pressures are expected

■ Compact dimensioned bodies offer large storage capacities but still allow access through 800 mm wide doorways.

■ Single or Twin Pump Lifting Stations Includes digital display control unit and non-return valve.



Comfort control unit

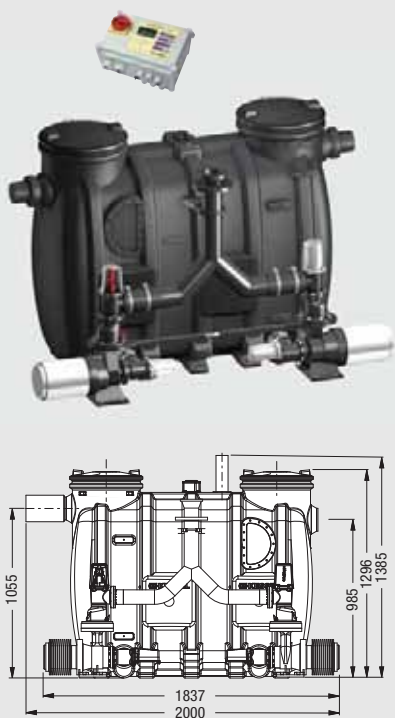
- User friendly navigation in multi-line display
- With self-diagnosis system SDS and memory function for the next service
- Displays current operational status
- Simple setting of parameters relevant for the function
- Operating hours counter
- Optional forwarding of alarm and general fault signals via a GSM interface
- Multilingual display (EN, DE, FR, IT, PL, NL)

Lifting stations for wastewater with or without sewage

Aqualift F Duo XXL 750 liters

Products

Illustration and dimensioned drawing



Lifting station Aqualift F Duo XXL twin lifting station with closure valve for wastewater with or without sewage
(For use with grease separators size NS 10 and larger) for free standing installation in frost free areas

Consists of:

Polyethylene collection chambers, storage volume 750 liter, pumping volume 300 liter, twin 420 mm OD access / maintenance covers, Ø 160 inlet (Ø 200 available upon request), inlet height 1055 mm, ventilation connection size Ø 110.

Pressure sensor controlled **twin wastewater pumps** with macerating (cutting assembly) for pumping wastewater with or without raw sewage, IP 68 submersible pumps, Duty / Standby operation, 10 meter power cable length.

Vertical pressure outlet with Ø 110 connection and flange, with closure valve and integrated backflow preventer.

Comfort control unit with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook, IP 54 splash proof control unit housing, for wall mounting, operational voltage - 400 V DC, with potential free contact (BMS) connections.

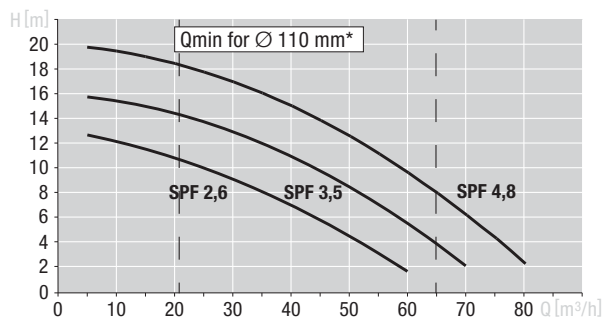
Total weight empty: approx 220 kg

Float switch resistant to fatty acids available on request at no extra charge.













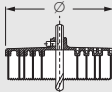
EN 12050-1

Power	Voltage	Article #
2.6 kW	400 V	28 638
3.5 kW	400 V	28 639
4.8 kW	400 V	28 640








* according to EN 12056-4

Type	SPF260KE	SPF400KE	SPF550KE
Power (P2)	2.6 kW	3.5 kW	4.8 kW
Input Power (P1)	3.3 kW	4.2 kW	5.6 kW
Voltage	400 V	400 V	400 V
Frequency	50 Hz	50 Hz	50 Hz
Amperage	5.6 A	8.2 A	10.2 A
Cable connections	5 m Length, 7 x 1.5 mm ²	5 m Length, 7 x 1.5 mm ²	5 m Length, 7 x 1.5 mm ²
Media temperature	40°C	40°C	40°C
Protection	IP 68	IP 68	IP 68

Aqualift F / Aqualift F XL / Aqualift F Duo XXL			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Audible alarm <input type="checkbox"/> 20 m cable length suitable for all control units	-	20 162
	Potential-free contact suitable for all control units 230 V: Wastewater station Aqualift F , Lifting station Aqualift F Mono 230 V	-	80 072
	Compressor set for bubble formation for use in combination with lifting stations and pumping stations with pressure control: <input type="checkbox"/> prevents soiling, compensates leaks, avoids condensate forming in the pressure hose, makes operation of systems possible with pressure hose lengths > 10 m, including connection T-piece, including 10 m pressure hose.	-	28 048
 	Closure valve for all lifting stations Aqualift F	Ø 110	28 683
	Closure valve made of polymer for installation on inlet side (no pressure) for all lifting stations Aqualift F	Ø 110 Ø 160	28 698 28 699
	Manual diaphragm pump 1 1/2 inch for manually pumping wastewater. With a ball valve on inlet and outlet side	1 1/2 inch	28 680
	Sound absorption sound-absorbing underlay mat (10 mm thick) <input type="checkbox"/> for lifting stations Aqualift F Mono	-	28 692
	<input type="checkbox"/> for lifting stations Aqualift F Duo	-	28 693
	<input type="checkbox"/> for lifting stations Aqualift F XL 200 liter	-	28 057
	300 liter	-	28 058
	450 liter	-	28 059
 	Pipe sealing gasket (EPDM) Use KESSEL hole saw when drilling. for lifting stations Aqualift F	Ø 50	850 114
		Ø 75	850 116
		Ø 110	850 117
		Ø 125	850 118
		Ø 160	850 119
		Ø 200	850 123
 	Hole saw for drilling lateral surfaces for inlets and outlets Ø 50, 75, 110, 125 and 160 (Saw blade holder Ø = 190 mm) Ø 200 (Use a drill with at least 1000 W)	-	50 100
		-	50 102

Aqualift F XL NEW			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Backflow preventer in cast iron with DN 80 flange according to DIN 2501; Backflow preventer with flap and flap opening lever	DN 80	28 021
	Flange adaptor from DN 80 to DN 100 in PE, flanges according to DIN 2501 For use with PE and SML pressure pipes, includes two gaskets	-	28 018
	Polyethylene connection adaptor in PE, for connection from <i>Aqualift F XL</i> to on-site pressure pipe For use with PE and SML pressure pipes, with DIN 2501 flange, includes single gasket	Ø 90 Ø 110	28 019 28 020
	Flexible pressure pipe connection Length – 200 mm <input type="checkbox"/> for PE and SML pipe connections For use with KESSEL <i>Aqualift F, Aqualift F XL</i> lifting stations <input type="checkbox"/> for cast iron pipe connections For use with KESSEL <i>Aqualift F XL</i> lifting stations	Ø 90 Ø 110 Ø 100 Ø 120	28 662 28 663 28 664 28 665
	Flange adaptor from DN 80 to DN 100 in cast iron Flange according to DIN 2501 For use with cast iron pressure pipes	-	28 068
	Cast iron connection adaptor in cast iron For connection from <i>Aqualift F XL</i> to on-site pressure pipe For use with cast iron pressure pipes, with DIN 2501 flange PN 16, includes single gasket	Ø 100 Ø 120	28 069 28 072

Aqualift F XL NEW			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Gate closure valve in cast iron With DN 80 flange according to DIN 2501, gate closure valve including closure wheel	DN 80	28 041
	Y-Coupling in cast iron With DN 80 flange according to DIN 2501, Y-coupling for use with <i>Aqualift F XL</i> twin pump lifting stations	Ø 80	28 042
	Sealing gasket (rubber) according to DIN 2501 For pressure pipe connections	DN 80 DN 100	28 043 28 044
	Alarm float switch upgrade set for <i>Aqualift F XL</i> lifting station For use with 230 V and 400 V Comfort control units. Consists of float switch, support plate, cover and 5 meter connection cable.	-	28 014
	Alarm float switch upgrade set for <i>Aqualift F</i> and <i>F Duo</i> lifting stations For use with 230 V and 400 V Comfort control units. Consists of float switch, support plate, cover and 5 meter connection cable.	-	28 015
	TeleControl telemetric system for connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.	-	28 792
	TeleControl antenna booster for <i>TeleControl</i> telemetric system incl. 2.5 m cable to improve reception. With magnetic base.	-	28 793
	Antenna booster extension cable cable length 2.5 m	-	28 794



SmartSelect simply makes planning easier - calculation module for lifting stations at smartselect.kessel.de



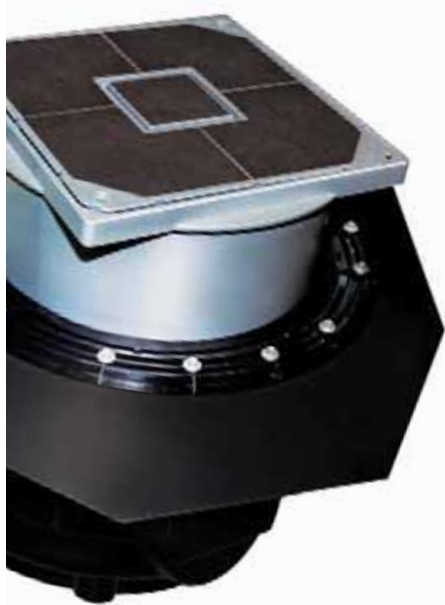
Scan this QR code to directly view the corresponding product video.



The hygienic alternative to a pump sump

Lifting stations

3



Aqualift S lifting stations for installation in a concrete slab / floor dispose of penetrating high water or surface water resulting from burst pipes through fully automatic pump control.

Aqualift S lifting stations for free-standing installation are particularly suitable for connection to grease separator systems.

Minilift lifting stations - compact lifting stations for renovation work.



Single or twin pump lifting stations with additional surface drainage

Lifting stations **Aqualift S** for installation in a concrete slab/floor

SYSTEM ADVANTAGES

Aqualift S

INSTALLATION IN THE CONCRETE SLAB/FLOOR

Installation in waterproof concrete with sealing gasket set optional.



DRAIN FUNCTION

Telescopic upper section can be twisted, tilted, height-adjusted. Integrated drain function (Fig. 2) for drainage of surface water.

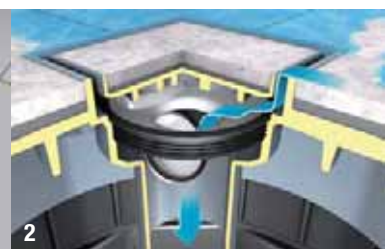
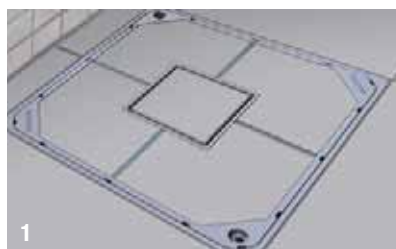
CONNECTIONS

Connection of further inlets to drain body of Ø 110, above the compression flange and in the extension section up to Ø 75.

COMFORT CONTROL UNIT

SELF-DIAGNOSIS SYSTEM SDS

Plug-and-play 230 Volt control units with self-diagnosis system SDS. Comfort version with menu navigation in six languages with multi-line display (Fig. 3).





Twin pump system
for connection downstream from small grease separator systems

Lifting station **Aqualift S**
for free-standing installation



Single pump systems
Ideal for renovation work

Lifting stations **Minilift**
for free-standing installation /
installation in concrete slab/floor

Aqualift S FREE-STANDING INSTALLATION

Particularly suitable as a lifting station for connection to small grease separator systems (with maximum pumping height of 3 m).

LONG SERVICE LIFE

Long service life thanks to alternating operation.

SNAP CLOSURE

Pump removal without tool thanks to "one-handed snap closure" (Fig. 4), also suitable for mobile use.

CONNECTIONS

Connection of further inlets Ø 50 and Ø 75.

COMFORT CONTROL UNIT

SELF-DIAGNOSIS SYSTEM SDS

Plug-and-play 230 Volt control units with self-diagnosis system SDS. Comfort version with menu navigation in six languages with multi-line display (Fig. 3).

Minilift FREE-STANDING INSTALLATION / INSTALLATION IN CONCRETE SLAB/FLOOR

The mobile **Minilift** lifting station for free-standing installation fits under any sink; a washing machine, shower or other inlets can all be connected at the same time.

SNAP CLOSURE

Pump removal without tool thanks to "one-handed snap closure" (Fig. 5), also suitable for mobile use.

FURTHER INLETS





Connection of further inlets Ø 50 and Ø 75 directly on site.

FLEXIBLE INSTALLATION

Recessed installation in the concrete slab/floor up to 220 mm optional.

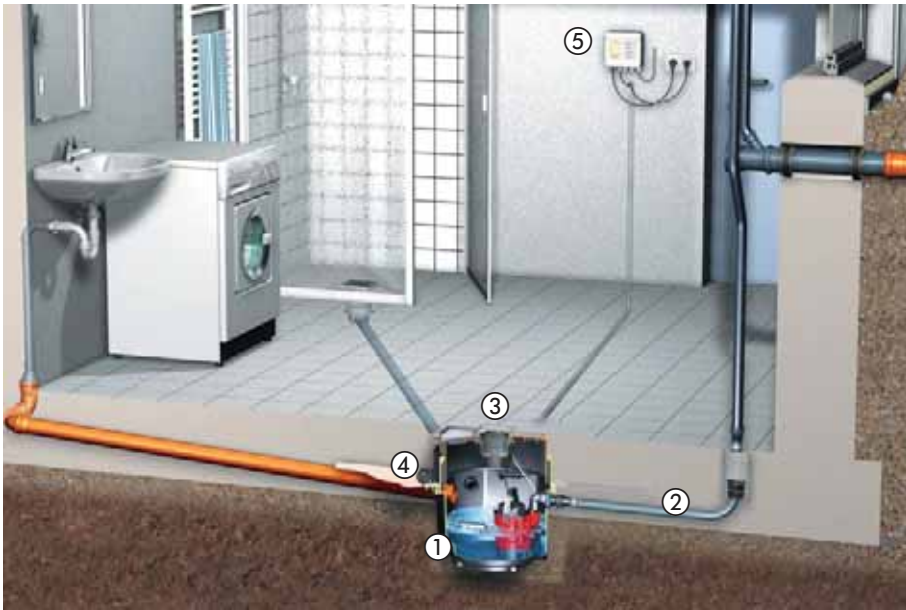


Lifting stations for wastewater without sewage

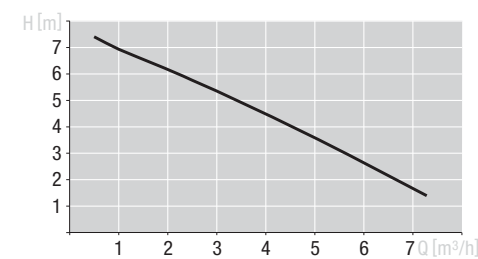
Aqualift S Installation in a concrete slab/floor			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Installation area 700 x 700 mm</p>	<p>Lifting station Aqualift S for wastewater without sewage, made of polymer</p> <p>For installation in a concrete slab/floor, Installation depth (D) 481 mm to 656 mm</p> <p>With telescopic upper section for continuous height and level adjustment, recessed cover for on-site tiling, made of polymer, class A 15, with moisture protective sealing flange, with removable, float switch controlled pump and integrated backwater flap.</p> <p>Pressure connection: 1½ inch outer thread, Pressure pipe Ø 40 mm for PVC glued connection or pressure pipe set.</p> <p>max. pumping height: 8 m Voltage: 230 V ~ 50 Hz Input power: 0.48 kW Pump on level: 200 mm Pump off level: 85 mm Max. particle size: 10 mm Power cable: 5 m Weight: ca. 19 kg</p> <p>Optional: Hair filter page 90</p> <p>  EN 12050-2</p>	Ø 40	28 500
Aqualift S Tronic / Aqualift S Duo Installation in a concrete slab/floor			Products
 <p>Illustration shows Art. # 28 530-C</p> <p>Installation area 700 x 700 mm</p>	<p>Lifting station Aqualift S Tronic / Aqualift S Duo for wastewater without sewage, made of polymer</p> <p>For installation in a concrete slab/floor, Installation depth (D) 481 mm to 656 mm</p> <p>With telescopic upper section for continuous height and level adjustment, recessed cover for on-site tiling, made of polymer, class A 15, with moisture protective sealing flange, integrated backwater flap.</p> <p>Pressure connection: 1½ inch outer thread, Pressure pipe Ø 40 mm for PVC glued connection or pressure pipe set.</p> <p>Max. particle size: 10 mm. max. pumping height: 7 m. Voltage: 230 V ~ 50 Hz.</p> <hr/> <p>Aqualift S Tronic with removable, pressure sensor controlled pump, optical alarm probe,</p> <p>Input power: 0.48 kW. Power cable: 5 m. Weight: approx. 19 kg.</p> <hr/> <p>Aqualift S Duo with two removable, pressure sensor controlled pumps,</p> <p>Input power: 2 x 0.48 kW. Power cable: 5 m. Weight: approx. 26 kg.</p> <p>Comfort control unit with multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook, IP 54 splash proof control unit housing, for wall mounting, operational voltage - 230 V DC, with potential free contact (BMS) connections.</p> <p>Optional: Audible alarm page 91 Hair filter page 90</p> <p>  EN 12050-2</p>	<p>Ø 40</p> <p>Ø 40</p>	<p>28 550-C</p> <p>28 530-C</p>

Lifting stations
for wastewater without sewage

Installation example *Aqualift S*



The lifting station *Aqualift S* ① pumps wastewater without sewage through the pressure pipe set ② upwards via the backwater loop to the sewage system. In addition, surface water can be drained via the integrated drain ③ following a burst pipe or high water penetration and be disposed of by the pump. The ready-to-install chamber can also be installed in waterproof concrete with the aid of the sealing gasket set ④. The system is controlled by means of the control unit ⑤ provided.



Current type	Voltage	Current	Power P ₁ / P ₂	RPM	Motor protection	Plug
Alternating current	230 V	2.12 A	480 W / 320 W	2800 min ⁻¹	integrated	Schuko 5 m cable

Professional advantages

- **Chamber ready to be installed**, recessed installation in the concrete slab/floor possible with extension section.

**D max. = 800 mm
from 661 - 836 mm**

Extension section Art. # 83 071

H = 468 - 648 mm

- **Integrated drain function** to drain surface water. Continual drainage even in the event of incoming flood water or a pipe burst.
- **Variable upper section** rotatable, tiltable and height adjustable
- **Installation in waterproof concrete.** Gasket set (Art. # 83 023) to prevent groundwater infiltration.
- **Elegant optical appearance even for basement rooms which are used as living accommodation:** The up-to-date alternative to the pump chamber.
- **Optional safety** Cover with drain and *Multistop* odour, foam and rodent trap optional.

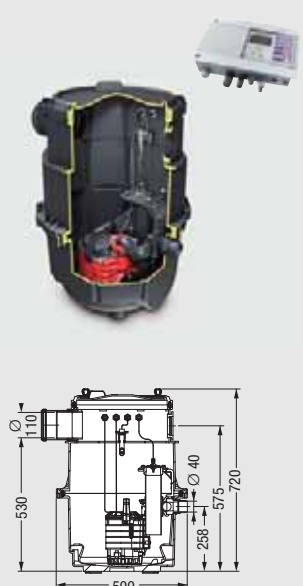


Scan this QR code to directly view the corresponding product video.

YouTube

Lifting stations for wastewater without sewage

Aqualift S for free-standing installation

Products

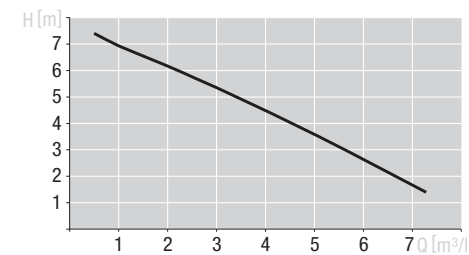
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>The illustration shows the Aqualift S lifting station components: a black polymer chamber, a twin pump unit, and a control unit. Below the components is a detailed dimensioned drawing of the chamber. The drawing shows a cross-section of the chamber with the following dimensions: Inlet diameter Ø 110 mm, total height 720 mm, outlet diameter Ø 40 mm, and a base width of 500 mm. The drawing also indicates a height of 530 mm for the inlet section and 258 mm for the pump section.</p>	<p>Twin lifting station Aqualift S made of polymer for free-standing installation With twin removable, pressure sensor controlled pumps, integrated backwater flap, Inlet Ø 110, ventilation connection Ø 75 (incl. pipe sealing gasket), Comfort control unit with multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook, IP 54 splash proof control unit housing, for wall mounting, operational voltage - 230 V DC, with potential free contact (BMS) connections.</p> <p>Pressure connection: 1½ inch outer thread or pressure pipe Ø 40 mm for PVC glued connection. Inlet height: 530 mm Total height: 720 mm, Ø 500 mm Voltage: 230 V ~ 50 Hz Max. chamber size: 55 l max. pumping height: 8 m Input power: 2 x 0.48 kW Power cable: 5 m Weight: ca. 25 kg</p> <p>Ideal for connection downstream from small grease separator systems.</p> <p>  EN 12050-2</p>	Ø 40	28 541-C

Lifting stations
for wastewater without sewage

Installation example *Aqualift S*



The *Aqualift S* ① lifting station is particularly suitable for connection to grease separator systems of the nominal sizes NS 1 - NS 4. A greater pumping capacity if more wastewater occurs is guaranteed by a second pump switching on automatically. Monitoring and control of the system are managed by the Comfort control unit ②.



Current type	Voltage	Current	Power P ₁ / P ₂	RPM	Motor protection	Plug
Alternating current	230 V	2.12 A	480 W / 320 W	2800 min ⁻¹	integrated	Schuko 5 m cable




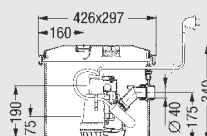


Professional advantages

- **Connection of several inlets**
Alongside the standard inlet Ø 110, further inlets (Ø 50, Ø 75) can be connected following scoring using a hole saw (Art. # 50 101).
- **Long pump service life** thanks to alternating operation.
- **Particularly suitable as a lifting station connected downstream from grease separator systems** (nominal size 1, 2 and 4 with maximum pumping height of 3 m). The second pump is switched on automatically where there is increased wastewater occurrence.



- Comfort control unit**
- User friendly navigation in multi-line display
 - With self-diagnosis system SDS and memory function for the next service
 - Displays current operational status
 - Simple setting of the parameters relevant for the function
 - Operating hours counter
 - Optional forwarding of alarm and general fault signals via a GSM interface
 - Multilingual display (EN, DE, FR, IT, PL, NL)

Lifting stations for wastewater without sewage

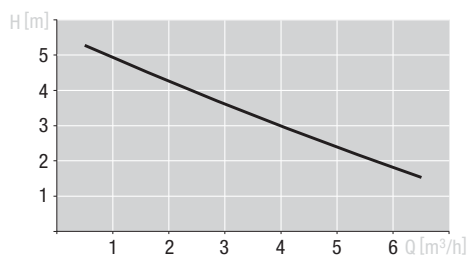
Minilift Installation in a concrete slab/floor			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Connection electrical cable</p> <p>438x332 396x290 190 75 Ø 40 300</p> <p>Installation area 500 x 400 mm</p>	<p>Lifting station <i>Minilift</i> made of polymer for underground installation</p> <p>With removable, float switch controlled pump, backwater flap, grating and cover plate class L 15. Certified for wastewater.</p> <p>Pressure connection: 1½ inch outer thread, Pressure pipe Ø 40 mm for PVC glued connection or pressure pipe set.</p> <p>Pumping height: 6 m Voltage: 230 V ~ 50 Hz Input power: 0.34 kW Power cable: 5 m Max. particle size: 10 mm Pump on level: 180 mm Pump off level: 80 mm</p> <p>  EN 12050-2</p>	Ø 40	28 570
Minilift for free-standing installation			Products
 <p>426x297 160 190 75 Ø 40 340</p>	<p>Lifting station <i>Minilift</i> made of polymer for underground installation</p> <p>With removable, float switch controlled pump and backwater flap. Certified for wastewater.</p> <p>Pressure connection: 1½ inch outer thread or pressure pipe Ø 40 mm for PVC glued connection</p> <p>Pumping height: 6 m Voltage: 230 V ~ 50 Hz Input power: 0.34 kW Power cable: 5 m Max. particle size: 10 mm Pump on level: 180 mm Pump off level: 80 mm</p> <p>With activated charcoal filter</p> <p>  EN 12050-2</p>	Ø 40	28 560

Lifting stations for wastewater without sewage

Installation example *Minilift*



The lifting station *Minilift* ① is made up of a chamber for installation in the concrete slab/floor, a 300 W wastewater pump ②, a closed cover plate and a slotted cover. The chamber can be concreted in directly during building shell work or inserted into a recess later and then connected. Any installation depths can be realised using the extension section ③.

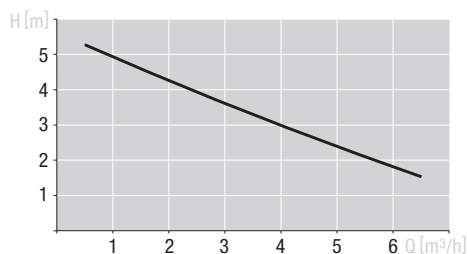


Current type	Voltage	Current	RPM	Motor protection	Plug
Alternating current	230 V	2.27 A	2800 min ⁻¹	integrated	Schuko 5 m cable

Installation example *Minilift*



The *Minilift* lifting station ① fits easily underneath any washbasin; it can also be connected to a washing machine, shower or other inlets. The station is equipped with a 300 W wastewater pump ② with a float control. The pressure pipe can be a PVC pipe Ø 40 mm. It is also possible using a screw connection 1 1/2 inch to connect the pressure pipe to the lifting station.



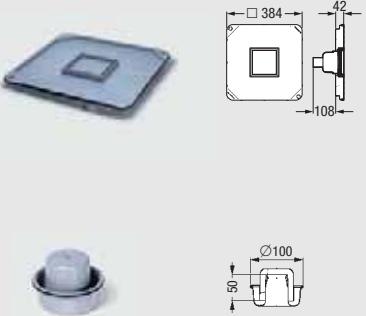
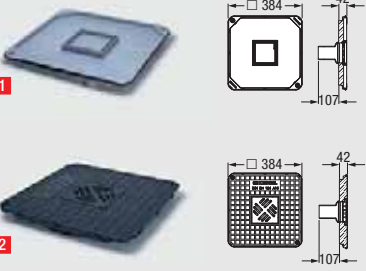

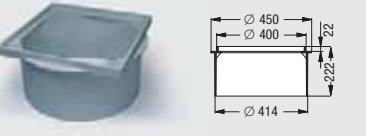
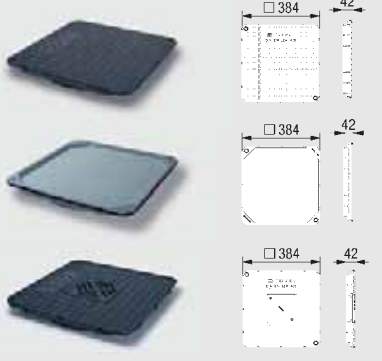


Current type	Voltage	Current	RPM	Motor protection	Plug
Alternating current	230 V	2.27 A	2800 min ⁻¹	integrated	Schuko 5 m cable

Professional advantages

- **Chamber ready to be installed**, recessed installation in the concrete slab/floor possible with extension section (Art. # 32 500).
- **Integrated drain function** to drain surface water. Continual drainage even in the event of incoming flood water or a pipe burst.
- **Tool-free pump removal**
The "one-hand snap closure" feature means that no tools are required to remove the pump for cleaning and maintenance.

Professional advantages

- **Space-saving**
The compact dimensions of the *Minilift* lifting station allow problem-free installation under a standard sink.
- **Tool-free pump removal**
The "one-hand snap closure" feature means that no tools are required to remove the pump for cleaning and maintenance.
- **Connection of further inlets**
Alongside the standard inlet in the cover, inlets can be attached at the side through the pre-scored areas.
- **Ventilation**
No further ventilation pipes are required thanks to the integrated activated carbon filter.

Aqualift S		Accessories	
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Cover plate, surface water tight Class A 15 With drain Ø 75, incl. gasket <input type="checkbox"/> recessed for on-site tiling, grey , for tile thicknesses of 18 mm for article numbers: 28 500, 28 550-C, 28 530-C	-	83 055
	Odour trap 50 mm seal water height For cover plate Art. # 83 055. Ventilation always required when in use! for article numbers: 28 500, 28 550-C, 28 530-C	-	47 200
For models made on or after Jan 2011			
	Cover plate, surface water tight Class A 15 With drain Ø 75, includes Multistop odour, foam, rodent and insect stop incl. gasket <input checked="" type="checkbox"/> recessed for on-site tiling, grey , for tile thicknesses of 18 mm	-	83 045
	<input checked="" type="checkbox"/> with integrated grating, black for article numbers: 28 500, 28 550-C, 28 530-C	-	83 046
	Hair filter made of polymer for article numbers: 83 045 and 83 046	-	43 700
	Upper section made of polymer, max. extension 180 mm, height adjustable for article numbers: 28 500, 28 550-C, 28 530-C	-	83 061
	Cover plate, surface water tight Class A 15 made of polymer, incl. gasket Art. # 173-145 <input type="checkbox"/> black Ventilation always required when in use!	-	83 050
	<input type="checkbox"/> recessed for on-site tiling, grey , for tile thicknesses of 18 mm Ventilation always required when in use!	-	83 052
	<input type="checkbox"/> with integrated grating, black for article numbers: 28 500, 28 550-C, 28 530-C	-	83 053
	Extension section with centre flange with elastomer sealing sheet made of NK/SBR Ø 800 mm, incl. screws for article numbers: 28 500, 28 550-C, 28 530-C	-	83 075
 Waterproof concrete installation tested by MFPA Leipzig UB 5.1/11-452-1	Gasket set for installation in waterproof concrete Consisting of: Counter flange made of polymer, incl. screws, elastomer waterproof membrane in NK/SBR Ø 800 mm for article numbers: 28 500, 28 550-C, 28 530-C	-	83 023

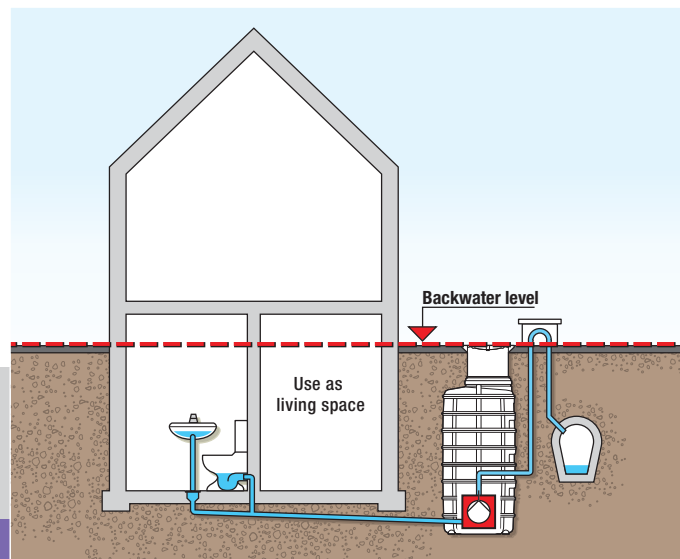
Aqualift S / Minilift			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 	Extension section with flange made of polymer, max. extension 180 mm For gasket set Art. # 83 023 for article numbers: 28 500, 28 550-C, 28 530-C When multiple extension sections are used make sure that access to valve is still possible!	-	83071
 	Extension section made of polymer, max. extension 180 mm, incl. gasket for article numbers: 28 500, 28 550-C, 28 530-C When multiple extension sections are used make sure that access to valve is still possible!	-	83070
 	Cover plate Class A 15 <input type="checkbox"/> grey <input type="checkbox"/> black for article numbers: 28 570	- -	30003 W 30003 S
 	Cover with grating Class A 15 <input type="checkbox"/> grey <input type="checkbox"/> black for article numbers: 28 570	- -	30001 W 30001 S
 	Extension section made of polymer Height = 220 mm for deep installation for article numbers: 28 570	-	32500
 	Alarm <input type="checkbox"/> with electrode probe <input type="checkbox"/> with optical probe for article numbers: 28 500	- -	20 220 20 221
	Audible alarm <input type="checkbox"/> 20 m cable length suitable for all control units with SDS function: <i>Aqualift S Tronic</i>	-	20 162
	Potential-free contact suitable for all control units with SDS function: <i>Aqualift S Tronic</i>	-	80072
	Pressure pipe set incl. 5 m pressure pipe hose Ø 40 for article numbers: 28 500, 28 550-C, 28 530-C	Ø 40	28 040
 	Hole saw Ø 50, 75, 110 (Saw blade holder Ø = 145 mm)	-	50 101
 	Hole saw Ø 50, 75, 110, 125 and 160 (Saw blade holder Ø = 190 mm)	-	50 100
 	Pipe sealing gasket (EPDM) Use KESSEL hole saw when drilling. for article numbers: 28 500, 28 550-C, 28 530-C, 28 560, 28 541-C	Ø 50 Ø 75 Ø 110 Ø 125 Ø 160	850 114 850 116 850 117 850 118 850 119



SmartSelect simply makes planning easier - calculation module for lifting stations at smartselect.kessel.de

Lifting stations for underground installation

Lifting stations



Lifting station outside the building in the KESSEL system chamber

SYSTEM ADVANTAGES / INSTALLATION

CONVENIENCE

Expensive living or useful space is not lost. No system noises in the building. No odour pollution and soiling in the building (Fig. 1).

SAFETY

High pumping volume and additional reserve volume if the system should fail e.g. in the event of a power cut. 20-year guarantee for PE material.



CONTROL UNITS

Plug-and-play control units with self-diagnosis system SDS and monthly self-test. Comfort version with multi-line display for operating state and maintenance instructions (Fig. 2).

INSTALLATION

Straightforward installation thanks to low weight of the individual chamber parts with safe fastening technology (Fig. 3) and variable upper section for adaptation to the ground level (Fig. 4).



Installing lifting stations within the home often wastes valuable living/storage space as well as potentially causing nuisance operational noise. New solutions are now available giving the home/building owner decisive advantages.





Komfort chamber system Ø 1000

Komfort chamber system Ø 600 / 800 / 1000

Komfort chamber system Ø 600 / 1000

Lifting station **Aqualift F**
for wastewater with or without sewage

Pumping station **Aqualift F**
for wastewater with or without sewage

Pumping station **Aqualift S**
for wastewater without sewage /
rain water

SELECTION CRITERIA

LIFTING / PUMPING STATIONS

	Lifting station Aqualift F Ø 1000	Pumping station Aqualift F Ø 600	Pumping station Aqualift F Ø 800/1000	Pumping station Aqualift F Ø 1000	Pumping station Aqualift S Ø 600	Pumping station Aqualift S Ø 1000
Wastewater	with sewage	with sewage	with sewage	with sewage	without sewage	without sewage
Pump	SPF 1400 - 3000	SPZ 1000	AP 501	TPF	KTP 500 / GTF 1000	KTP 500 / GTF 1000
Power (P2)	1.1 / 2.2 kW	0.6 kW	0.75 kW	1.3 / 1.9 kW	0.3 / 0.7 kW	0.3 / 0.7 kW
Pumping height	7 / 16 m	9 m	11 m	15 / 30 m	7 / 9 m	7 / 9 m
Pressure pipe connection Ø	110 mm	40 mm	63 / 90 mm	63 / 90 mm	40 mm	40 mm
Installation depth	1630 - 5130 mm	800 - 2250 mm	1480 - 3130 mm	1630 - 5130 mm	800 - 2250 mm	1630 - 5130 mm
ATEX*	-	-	-	✓	-	-
Products see page	95	96	98	100	102	104

* The product is suitable for installation in potentially explosive atmospheres

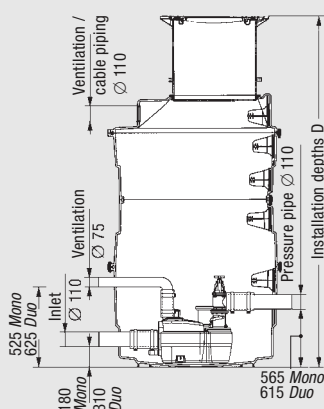


Lifting stations for underground installation according to EN 752

Lifting station *Aqualift F* Ø 1000

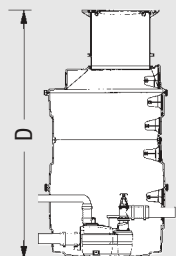
Products

Illustration and dimensioned drawing



Installation depths (D):

D 1	1630 - 2130 mm
D 2	2130 - 2630 mm
D 3	2630 - 3130 mm
D 4	3130 - 3630 mm
D 5	3630 - 4130 mm
D 6	4130 - 4630 mm
D 7	4630 - 5130 mm



Lifting station *Aqualift F* in **Komfort** inspection chamber system Ø 1000 in PE-HD

Single station/twin station

for wastewater with or without sewage
with closure valve

For underground installation (dry installation)

1 Single station

2 Twin station

☐ Cover plate class A/B (Version B)

☐ Cover plate class D (Version D)

Lifting station with PE storage chamber,

Chamber volume *Mono* approx. 50 liters/
Duo approx. 120 liters

Pumping volume *Mono* approx. 20 liters/
Duo approx. 50 liters

with clean-out opening.

Connection coupling for inlet Ø 110

(Inlet height *Mono* 180 mm / *Duo* 310 mm) and

for ventilation Ø 75, *Mono* 525 mm / *Duo* 625 mm

Connection coupling for manual diaphragm

pump Ø 32.

Pressure sensor controlled **wastewater pump**
with non-chokable impeller to pump wastewater
with or without sewage (open channel passage
40 mm). Pump is rated submersible (IP 68),
power cable length 10 m.

Horizontal pressure outlet with integrated
backwater flap, connection coupling Ø 110
Mono 565 mm / *Duo* 615 mm hose section and
closure valve.

Comfort control unit with mains power ON / OFF
switch and multilingual digital display (EN, DE,
FR, IT, PL, NL) showing current operational status,
settings and logbook; control unit is splash proof
(IP 65), wall mounted, voltage 230 / 400 V at
50 Hz. With potential-free contact.

Ready mounted in the

Inspection chamber system Ø 1000 in PE-HD,
incl. access steps, water-tight, with continuous
height and level adjustment, cover class A/B, D
in cast iron according to EN 124, inlet Ø 110,
cable conduit connection Ø 110,
Installation depth from 1.5 to 5 m (see table),

Pressure pipe Ø 110 ready mounted
with closure valve.

Handles groundwater depths up to 500 mm
(greater groundwater resistance on request)

Continuous duty pumps (S1) on request

Accessories see page 112

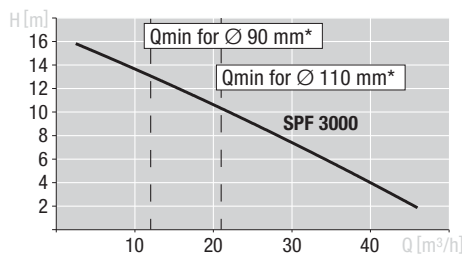
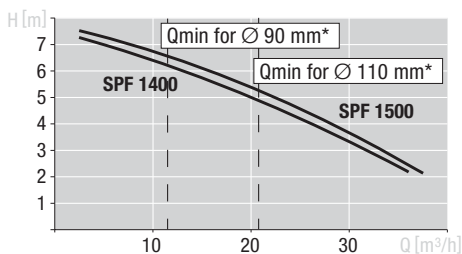
Pump SPF	Voltage	Article # Class B	Article # Class D
1400	D1: 230 V	867 611 B	867 611 D
1400	D2: 230 V	867 621 B	867 621 D
1500	D1: 400 V	866 611 B	866 611 D
1500	D2: 400 V	866 621 B	866 621 D
1500	D3: 400 V	866 631 B	866 631 D
1500	D4: 400 V	866 641 B	866 641 D
1500	D5: 400 V	866 651 B	866 651 D
3000	D1: 400 V	866 711 B	866 711 D
3000	D2: 400 V	866 721 B	866 721 D
3000	D3: 400 V	866 731 B	866 731 D
3000	D4: 400 V	866 741 B	866 741 D
3000	D5: 400 V	866 751 B	866 751 D
3000	D6: 400 V	866 761 B	866 761 D
3000	D7: 400 V	866 771 B	866 771 D
1400	D1: 230 V	868 661 B	868 661 D
1400	D2: 230 V	868 671 B	868 671 D
1500	D1: 400 V	868 611 B	868 611 D
1500	D2: 400 V	868 621 B	868 621 D
1500	D3: 400 V	868 631 B	868 631 D
1500	D4: 400 V	868 641 B	868 641 D
1500	D5: 400 V	868 651 B	868 651 D
3000	D1: 400 V	868 711 B	868 711 D
3000	D2: 400 V	868 721 B	868 721 D
3000	D3: 400 V	868 731 B	868 731 D
3000	D4: 400 V	868 741 B	868 741 D
3000	D5: 400 V	868 751 B	868 751 D
3000	D6: 400 V	868 761 B	868 761 D
3000	D7: 400 V	868 771 B	868 771 D

Lifting stations for underground installation according to EN 752

Installation example lifting station *Aqualift F* Ø 1000



Domestic wastewater from toilets and drainage fixtures flows with natural gradient to the Komfort chamber ① and is pumped by the integrated *Aqualift F* ② lifting station via the backwater loop to a higher-level sewage channel. The pressure pipe ③ should always be laid frost-free. The Comfort control unit takes over the fully automatic pump control from within the building.



* according to EN 12056-4

Type	SPF 1400	SPF 1500	SPF 3000
Power (P2)	1.1 kW	1.1 kW	2.7 kW
Input Power (P1)	1.6 kW	1.4 kW	3.2 kW
Voltage	230 V	400 V	400 V
Frequency	50 Hz	50 Hz	50 Hz
Amperage	7.3 A	2.7 A	5.4 A
Fuses	16 A surge-proof	3x16A surge-proof	3x16A surge-proof
Cable connections	10 m Length, 7 x 1.5 mm ²	10 m Length, 7 x 1.5 mm ²	10 m Length, 7 x 1.5 mm ²
Media temperature	35°C	35°C	35°C
Weight (Pump)	30 kg	30 kg	31 kg
Protection	IP 68	IP 68	IP 68
Operating mode	S3 60 % power on duration	S3 60 % power on duration	S3 30 % power on duration

Professional advantages

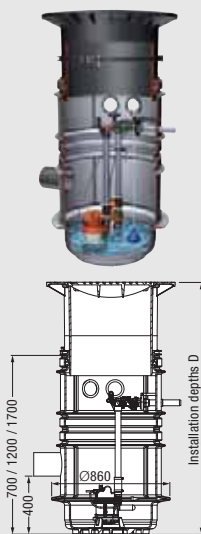

- **Variable upper section**
inclined and height adjustable from 100 to 600 mm
- **Comfort control unit**
with mains power ON / OFF switch and multilingual digital display (EN, DE, FR, IT, PL, NL) showing current operational status, settings and logbook
- **Simple to assemble** with light-weight inspection chamber components and easy connection technique.
- **Quick to mount** with a high level of pre-fabrication (bottom part of inspection chamber with pressure pipe) **and easy connection** using fixed couplings for inlet and pressure pipe and bores with lip gaskets for ventilation and cable piping.
- **Long-term reliability** with an absolute water-tight inspection chamber system which is resistant to sedimentary deposits and aggressive media as well as root infiltration.
- **Fully automated operation** with an electrical control unit with manual, off and automatic mode, optical and audible warning and alarm notification, detailed operation and warning display, integrated pump rotation check, anti-blocking function, variable pump on and pump off settings.
- **Clean and straightforward maintenance and repair work** thanks to the closed pump tank.
- Ideal for use with short pressure pipes (single system approx. 10 m, double system approx. 20 m).
- The wastewater does not remain in the tank for long, thus avoiding decomposition and outgassing.



Pumping stations for underground installation according to EN 752

Pumping station *Aqualift F* Ø 600

Products

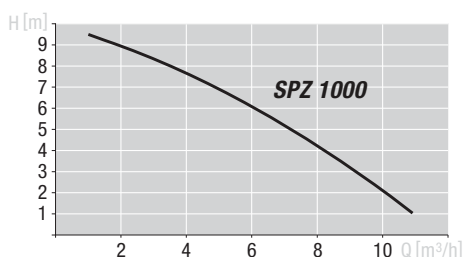
Illustration and dimensioned drawing	Article description	Installation depths	Article # Class B	Article # Class D								
	<p>Pumping station <i>Aqualift F</i> with macerating / cutting pumps in inspection chamber system Ø 600 in PE-LLD Single station/twin station for wastewater with or without sewage For underground installation</p> <p>1 <i>SPZ 1000</i> float switch controlled, removable pump, plug in ready (230 V / 50Hz)</p> <p>2 <i>SPZ 1000</i> pressure sensor controlled, removable pump, IP 54 SDS control unit (230 V / 50Hz)</p> <p>3 <i>SPZ 1000</i> pressure sensor controlled, removable twin pumps, IP 54 SDS control unit (230 V / 50Hz)</p> <p><input type="checkbox"/> Cover plate class A/B (Version B) <input type="checkbox"/> Cover plate class D (Version D)</p> <p>Resistant to aggressive media, upper section made of polymer, vertically adjustable, cover class A/B, D in cast iron according to EN 124. Groundwater resistant. Inlet Ø 160, connection for pipe gasket for Ø 110 according to EN 1401 and EN 12666-1 - each for ventilation or conduit pipe. Note: Consider frost free depth of pressure pipe. Pressure pipe Ø 40 mm outside diameter for PVC glue connection, with integrated non-return flap. Current: 230 V ~ 50 Hz. Power cable length: 10 m.</p> <p>For installations without explosion proof requirements</p> <p>Handles groundwater depths up to 2000 mm</p>	<p>1 D1: 827 710 B D2: 827 720 B D3: 827 730 B</p> <p>2 D1: 827 711 B D2: 827 721 B D3: 827 731 B</p> <p>3 D1: 826 711 B D2: 826 721 B D3: 826 731 B</p>		<p>827 710 D 827 720 D 827 730 D</p> <p>827 711 D 827 721 D 827 731 D</p> <p>826 711 D 826 721 D 826 731 D</p>								
<table><tr><th colspan="2">Installation depths (D):</th></tr><tr><td>D 1</td><td>800 - 1250 mm</td></tr><tr><td>D 2</td><td>1300 - 1750 mm</td></tr><tr><td>D 3</td><td>1800 - 2250 mm</td></tr></table>	Installation depths (D):		D 1	800 - 1250 mm	D 2	1300 - 1750 mm	D 3	1800 - 2250 mm				
Installation depths (D):												
D 1	800 - 1250 mm											
D 2	1300 - 1750 mm											
D 3	1800 - 2250 mm											
<div> EN 12050 (max 2 WC connections)</div>												

Pumping stations for underground installation according to EN 752

Installation example pumping station *Aqualift F* Ø 600



The pumping station *Aqualift F* Ø 600 ① can be used for the draining of wastewater with or without sewage below the backwater level, as backwater protection for separator systems and for draining basement apartments or driveways. The wastewater flows with natural gradient to the collecting chamber ① and is pumped by the integrated pumps *SPZ 1000* ② via the backwater loop to a higher-level sewage channel. The pressure pipe ③ should always be laid frost-free. A control unit takes over the fully automatic pump control from within the building. Float switches or a pressure sensor ④ are available as level sensors.



Type	<i>SPZ 1000</i>
Current type	Alternating current
Voltage	230 V
Current	4.9 A
Power P1/P2	1080 W / 620 W
RPM	2800 min ⁻¹
Motor protection	integrated
Operating mode	S3 - 30 %

Professional advantages

- Inexpensive complete system
- For draining wastewater with or without sewage
- For backwater protection connected to a separator
- **Simple to assemble** with light-weight inspection chamber components and easy connection technique.
- **Quick to mount** with a high level of pre-fabrication **and easy connection** using fixed couplings for inlet and pressure pipe and bores with lip gaskets for ventilation and cable piping.
- **Variable upper section** inclinable and height adjustable from 100 to 600 mm.
- **Tool-free pump removal**

The "one-hand snap closure" feature means that no tools are required to remove the pump for cleaning and maintenance.

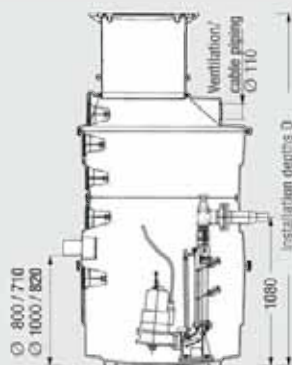
Pumping stations for underground installation according to EN 752

Pumping station Aqualift F Ø 800 / 1000

Products

Illustration and dimensioned drawing

NEW



Installation depths (D) Ø 800

D 1	1480 - 1980 mm
D 2	1980 - 2480 mm
D 3	2480 - 2980 mm

Installation depths (D) Ø 1000

D 1	1630 - 2130 mm
D 2	2130 - 2630 mm
D 3	2630 - 3130 mm

Pumping station Aqualift F (AP 501) in Komfort inspection chamber system Ø 800 / 1000 in PE-HD

Single station/twin station

for wastewater with or without sewage

For underground installation

1 AP 501 with removable, float switch controlled pump, plug in ready (230 V power connection)

2 AP 501 Tronic with removable, float switch controlled pump, 3 floats (OFF, ON, ALARM) with control unit (IP 54), operating voltage 230 or 400 V DC at 50 Hz, with potential-free contact

3 AP 501 Duo with twin removable, float switch controlled pump, 4 floats (OFF, ON 1, ON 2, ALARM), with control unit (IP 54, operating voltage 230 or 400 V DC at 50 Hz, with potential-free contact

☐ Cover plate class A/B (Version B)

☐ Cover plate class D (Version D)

Inspection chamber system KESSEL

Ø 800 / 1000 in PE-HD water-tight, resistant to aggressive media, upper section made of polymer, continuous height and level adjustment, cover class A/B, D in cast iron according to EN 124. Groundwater resistant. Inlet Ø 160, connection for pipe seal for Ø 110 according to EN 1401 for ventilation pipes and cable piping respectively, pumping volume approx. 150 l

Pressure pipe ready mounted with backwater flap, closure valve and float switch for level control with cable length 10 m, pressure pipe connection PE-HD Ø 63 mm and Ø 90 mm.

Single or twin submersible pump(s) AP 501 0.75 kW (without explosion protection), with non-chokable impeller to pump wastewater with or without sewage, submersible (IP 68), electrical cable length 10 m.

For installations without explosion proof requirements

Handles groundwater depths up to 500 mm

Installation depths

Voltage

Article # Class B

Article # Class D

Komfort inspection chamber system Ø 800

D1:	230 V	800-HA1-501B	800-HA1-501D
D2:	230 V	800-HA2-501B	800-HA2-501D
D3:	230 V	800-HA3-501B	800-HA3-501D

D1:	230 V	800-HA1-531B	800-HA1-531D
D2:	230 V	800-HA2-531B	800-HA2-531D
D3:	230 V	800-HA3-531B	800-HA3-531D

D1:	400 V	800-HA1-511B	800-HA1-511D
D2:	400 V	800-HA2-511B	800-HA2-511D
D3:	400 V	800-HA3-511B	800-HA3-511D

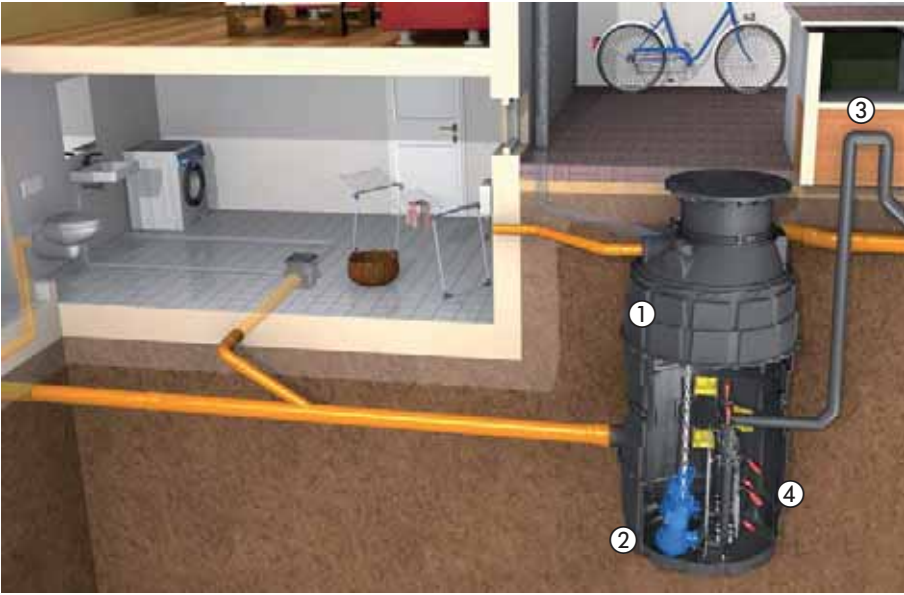
Komfort inspection chamber system Ø 1000

D1:	230 V	1000-HA1-541B	1000-HA1-541D
D2:	230 V	1000-HA2-541B	1000-HA2-541D
D3:	230 V	1000-HA3-541B	1000-HA3-541D

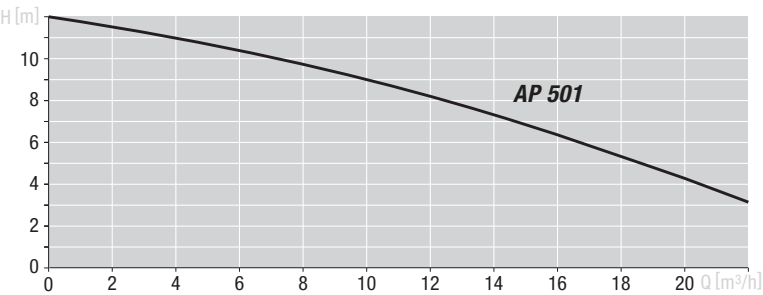
D1:	400 V	1000-HA1-521B	1000-HA1-521D
D2:	400 V	1000-HA2-521B	1000-HA2-521D
D3:	400 V	1000-HA3-521B	1000-HA3-521D

Pumping stations
for underground installation according to EN 752

Installation example pumping station *Aqualift F* Ø 800 / 1000



The pumping station *Aqualift F* ① can be used for the draining of wastewater with or without sewage below the backwater level, as backwater protection for separator systems and for draining basement apartments or driveways. The wastewater flows with natural gradient to the Komfort chamber Ø 800 or 1000 ① and is pumped by the integrated pumps AP 501 ② via the backwater loop to a higher-level sewage channel. The pressure pipe ③ should always be laid frost-free. A control unit takes over the fully automatic pump control from within the building. Float switches ④ are used as level and alarm sensors.



Type	Power	Input power	Current	Voltage	Cable length	Protection
Mono, Tronic, Duo	0.75 kW	1.25 kW	6 A	230 V at 50 Hz	10 m	IP 68; without explosion protection
Tronic, Duo	0.75 kW	1.1 kW	2.8 A	400 V at 50 Hz	10 m	IP 68; without explosion protection


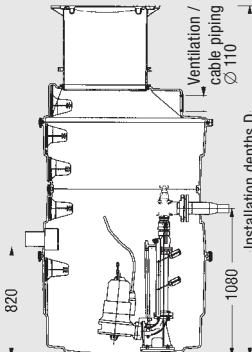
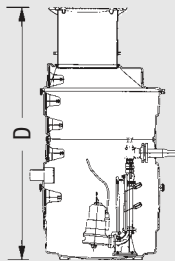
Professional advantages


- Inexpensive complete system
- For draining wastewater with or without sewage. For backwater protection connected to a separator
- For draining basements, yards or driveways
- **Variable upper section** inclinable and height adjustable from 100 to 600 mm
- **Simple to assemble** with light-weight inspection chamber components and easy connection technique.
- **Long-term reliability** with an absolute water-tight inspection chamber system which is resistant to sedimentary deposits and aggressive media as well as root infiltration.
- **Fully automated operation** with an electrical control unit with manual, off and automatic mode, optical and audible warning and alarm notification, detailed operation and warning display, integrated pump rotation check, anti-blocking function, variable pump on and pump off settings.

Pumping stations for underground installation according to EN 752

Pumping station Aqualift F Ø 1000

Products

Illustration and dimensioned drawing	Article description	Pumping capacity	Pressure pipe*	Article # Class B	Article # Class D																
  <table><tr><th colspan="2">Installation depths (D):</th></tr><tr><td>D 1</td><td>1630 - 2130 mm</td></tr><tr><td>D 2</td><td>2130 - 2630 mm</td></tr><tr><td>D 3</td><td>2630 - 3130 mm</td></tr><tr><td>D 4</td><td>3130 - 3630 mm</td></tr><tr><td>D 5</td><td>3630 - 4130 mm</td></tr><tr><td>D 6</td><td>4130 - 4630 mm</td></tr><tr><td>D 7</td><td>4630 - 5130 mm</td></tr></table> 	Installation depths (D):		D 1	1630 - 2130 mm	D 2	2130 - 2630 mm	D 3	2630 - 3130 mm	D 4	3130 - 3630 mm	D 5	3630 - 4130 mm	D 6	4130 - 4630 mm	D 7	4630 - 5130 mm	<p>Pumping station Aqualift F in Komfort inspection chamber system Ø 1000 in PE-HD Single station/twin station for wastewater with or without sewage For underground installation</p> <p>1 Single station 2 Twin station</p> <p><input type="checkbox"/> Cover plate class A/B (Version B) <input type="checkbox"/> Cover plate class D (Version D)</p> <p>Including access steps, water-tight, resistant to aggressive media, upper section made of polymer, continuous height and level adjustment, cover class A/B, D in cast iron according to EN 124, inlet Ø 160, cable conduit connection Ø 110 according to EN 1401 and EN 12666-1 for ventilation pipes and cable piping respectively. Installation depth from 1.5 to 5 m (see table), Pumping volume approx. 180 liters.</p> <p>Pressure pipe ready mounted with backwater flap, closure valve. Single station with three float switches, twin station with four float switches for level control with cable length 10 m, pressure pipe connection PE-HD Ø 63 and Ø 90.</p> <p>Submersible motor pump TPF 1.3 KE / TPF 1.9 KE explosion-proof, with macerating blades for pumping wastewater with or without sewage, submersible (IP 68), electrical cable length 10 m.</p> <p>Electric control unit for fully automated pump operation, control unit is splash proof (IP 65), for wall mounting in dry, frost-free areas, PTB certification for installation in explosion risk areas, voltage 400 V at 50 Hz. With potential-free contact.</p> <p>Handles groundwater depths up to 500 mm (greater groundwater resistance on request)</p> <p>Explosive proof Accessories see page 112</p> <p>*) Ø 90 by sawing off</p> <p>Optional 400 Volt Comfort control unit Art. # 860 000</p>	<p>1 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 2 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.3 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW 1.9 kW</p>	<p>D1: 63/90 D2: 63/90 D3: 63/90 D4: 63/90 D5: 63/90 D6: 63/90 D7: 63/90 D1: 63/90 D2: 63/90 D3: 63/90 D4: 63/90 D5: 63/90 D6: 63/90 D7: 63/90 D1: 63/90 D2: 63/90 D3: 63/90 D4: 63/90 D5: 63/90 D6: 63/90 D7: 63/90</p>	<p>865 610 B 865 620 B 865 630 B 865 640 B 865 650 B 865 660 B 865 670 B 865 710 B 865 720 B 865 730 B 865 740 B 865 750 B 865 760 B 865 770 B 864 610 B 864 620 B 864 630 B 864 640 B 864 650 B 864 660 B 864 670 B 864 710 B 864 720 B 864 730 B 864 740 B 864 750 B 864 760 B 864 770 B</p>	<p>865 610 D 865 620 D 865 630 D 865 640 D 865 650 D 865 660 D 865 670 D 865 710 D 865 720 D 865 730 D 865 740 D 865 750 D 865 760 D 865 770 D 864 610 D 864 620 D 864 630 D 864 640 D 864 650 D 864 660 D 864 670 D 864 710 D 864 720 D 864 730 D 864 740 D 864 750 D 864 760 D 864 770 D</p>
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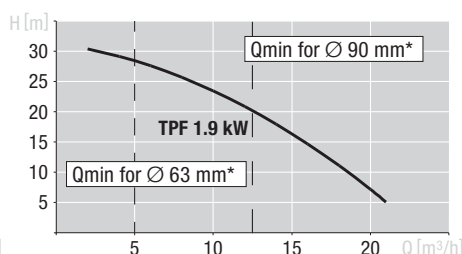
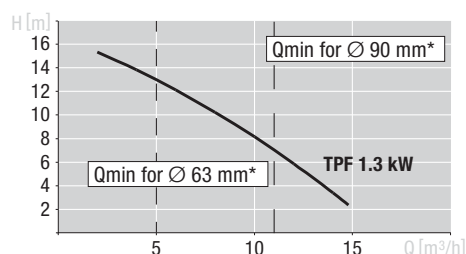
 EN 12050-1

Pumping stations for underground installation according to EN 752

Installation example pumping station *Aqualift F* Ø 1000




Domestic wastewater flows with natural gradient to the pumping station ① and is pumped by the integrated TPF macerator pump ② over long distances (pressure draining) into the sewer. The pressure pipe ③ should always be laid frost-free. A control unit takes over the fully automatic pump control from within the building. Float switches ④ are used as level sensors. The system complies with the ATEX product directive and is suitable for installation in potentially explosive atmospheres.



* according to EN 12056-4

Pump type	TPF 1.3 KE	Pump type	TPF 1.9 KE
Power (P2)	1.3 kW	Power (P2)	1.9 kW
Input power (P1)	1.75 kW	Input power (P1)	2.6 kW
Amperage	3.5 A	Amperage	4.5 A
Fuses	3 x 16 A surge-proof	Fuses	3 x 16 A surge-proof
Voltage	400 V at 50 HZ	Voltage	400 V at 50 HZ
Cable length	10 m Length, 7 x 1.5 mm ²	Cable length	10 m Length, 7 x 1.5 mm ²
Protection	IP 68 Ex-protection	Protection	IP 68 Ex-protection

Professional advantages



- **Variable upper section**
inclinable and height adjustable
from 100 to 600 mm
- **Comfort control unit (optional)**
with mains power ON / OFF
switch and multilingual digital
display (EN, DE, FR, IT, PL, NL) showing
current operational status, settings and
logbook 
- **Simple to assemble** with light-weight
inspection chamber components and easy
connection technique.
- **Quick to mount** with a high level of
pre-fabrication (bottom part of inspection
chamber with pressure pipe) **and easy
connection** using fixed couplings for inlet
and pressure pipe and bores with lip
gaskets for ventilation and cable piping.
- **Long-term reliability** with an absolute
water-tight inspection chamber system
which is resistant to sedimentary deposits
and aggressive media as well as root
infiltration.
- **Fully automated operation** with an
electrical control unit with manual, off
and automatic mode, optical and audible
warning and alarm notification, detailed
operation and warning display, integrated
pump rotation check, anti-blocking
function, variable pump on and pump
off settings.
- **Systems with macerator** - permit the
realisation of smaller dimensioning of the
pressure pipes and longer distances to the
sewage system.
- **High pumping volume** thanks to the pump
chamber.
- **Additional reserve volume** if the system
should fail e.g. in the event of a power cut.
- Further inlets up to Ø 160 can be attached
on site, Ø 200 or larger in the factory.
- Suitable for installation
in explosion risk areas



Pumping stations for underground installation according to EN 752

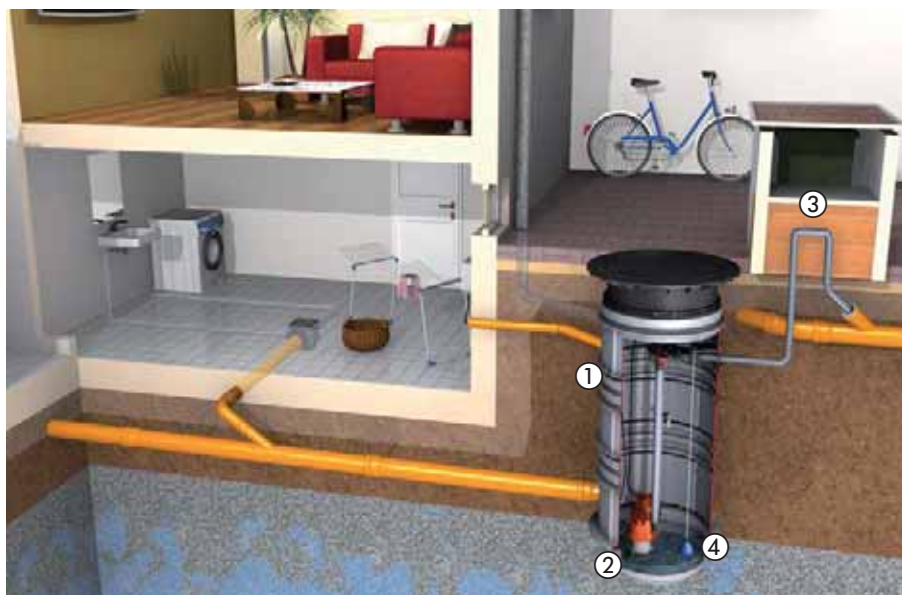
Pumping station *Aqualift S* Ø 600

Products

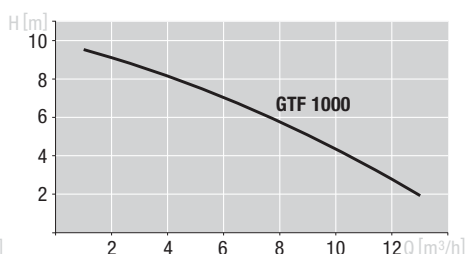
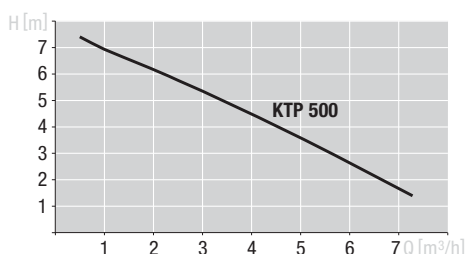
Illustration and dimensioned drawing	Article description	Pump KTP / GTF	Article # Class B	Article # Class D								
	Pumping station <i>Aqualift S</i> in inspection chamber system Ø 600 in PE-LLD Single station/twin station for wastewater without sewage / rainwater For underground installation	1 D1: KTP 500 D2: KTP 500 D3: KTP 500 D1: GTF 1000 D2: GTF 1000 D3: GTF 1000	825 810 B 825 820 B 825 830 B 827 810 B 827 820 B 827 830 B	825 810 D 825 820 D 825 830 D 827 810 D 827 820 D 827 830 D								
	1 <i>KTP 500/GTF 1000 float switch controlled removable pump for conductive or non-conductive fluids.</i> Input power (P1): 0.48 /1.18 kW. 2 <i>KTP 500/GTF 1000 Tronic with removable, pressure sensor controlled pump for conductive or non-conductive fluids, with SDS control unit. Input power (P1): 0.48 /1.18 kW.</i> 3 <i>KTP 500/GTF 1000 Duo with removable, pressure sensor controlled twin pumps for conductive or non-conductive fluids, with SDS control unit. Input power (P1): 2 x 0.48 /1.18 kW.</i> <input type="checkbox"/> Cover plate class A/B (Version B) <input type="checkbox"/> Cover plate class D (Version D)	2 D1: KTP 500 D2: KTP 500 D3: KTP 500 D1: GTF 1000 D2: GTF 1000 D3: GTF 1000 3 D1: KTP 500 D2: KTP 500 D3: KTP 500 D1: GTF 1000 D2: GTF 1000 D3: GTF 1000	825 811 B 825 821 B 825 831 B 827 811 B 827 821 B 827 831 B 824 811 B 824 821 B 824 831 B 826 811 B 826 821 B 826 831 B	825 811 D 825 821 D 825 831 D 827 811 D 827 821 D 827 831 D 824 811 D 824 821 D 824 831 D 826 811 D 826 821 D 826 831 D								
<table><tr><th colspan="2">Installation depths (D):</th></tr><tr><td>D 1</td><td>800 - 1250 mm</td></tr><tr><td>D 2</td><td>1300 - 1750 mm</td></tr><tr><td>D 3</td><td>1800 - 2250 mm</td></tr></table>	Installation depths (D):		D 1	800 - 1250 mm	D 2	1300 - 1750 mm	D 3	1800 - 2250 mm	Inspection chamber system Ø 600 in PE-LLD , resistant to aggressive media, upper section made of polymer, vertically adjustable, cover class A/B, D in cast iron according to EN 124. Groundwater resistant. Inlet Ø 110 (<i>KTP 500</i>), Ø 160 (<i>GTF 1000</i>), connection for pipe seal for Ø 110 according to EN 1401 and EN 12666-1 - each for ventilation or cable pipe, Note: Consider frost free depth of pressure pipe Pressure pipe Ø 40 mm outside diameter for PVC glue connection, with integrated non-return flap, 10 mm max solid size, Current: 230 V ~ 50 Hz. Power cable length: 10 m. Handles groundwater depths up to 2000 mm			
Installation depths (D):												
D 1	800 - 1250 mm											
D 2	1300 - 1750 mm											
D 3	1800 - 2250 mm											
 EN 12050-2												

Pumping stations for underground installation according to EN 752

Installation example pumping station *Aqualift S* Ø 600



The pumping station *Aqualift S* Ø 600 ① can be used for the draining of wastewater without sewage below the backwater level, as backwater protection for separator systems and for draining basement apartments or driveways. The wastewater flows with natural gradient to the collecting chamber ① and is pumped by the integrated pumps *KTP 500* / *GTF 1000* ② via the backwater loop to a higher-level sewage channel. The pressure pipe ③ should always be laid frost-free. A control unit takes over the fully automatic pump control from within the building. Float switches or a pressure sensor ④ are available as level sensors.



	<i>KTP 500</i>	<i>GTF 1000</i>
Current type	Alternating current	Alternating current
Voltage	230 V	230 V
Current	2.12 A	4.9 A
Power P1/P2	480 W / 310 W	1180 W / 720 W
RPM	2800 min ⁻¹	2800 min ⁻¹
Motor protection	integrated	integrated
Operating mode	S1	S3 - 30 %

Professional advantages

- Inexpensive complete system
- For draining wastewater with or without sewage
- For backwater protection connected to a separator
- **Simple to assemble** with light-weight inspection chamber components and easy connection technique.
- **Quick to mount** with a high level of pre-fabrication **and easy connection** using fixed couplings for inlet and pressure pipe and bores with lip gaskets for ventilation and cable piping.
- **Variable upper section** inclinable and height adjustable from 100 to 600 mm.
- **Tool-free pump removal**

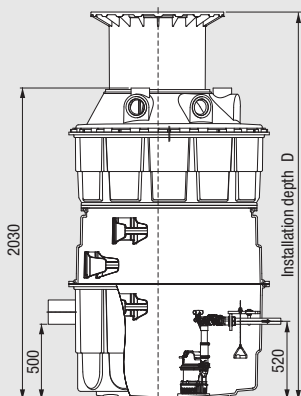
The "one-hand snap closure" feature means that no tools are required to remove the pump for cleaning and maintenance. (see *Minilift*)

Pumping stations for underground installation according to EN 752

Pumping station Aqualift S Ø 1000

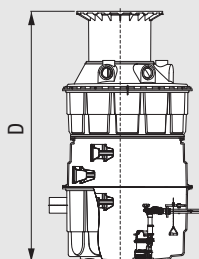
Products

Illustration and dimensioned drawing



Installation depths (D):

D 1	1630 - 2130 mm
D 2	2130 - 2630 mm
D 3	2630 - 3130 mm
D 4	3130 - 3630 mm
D 5	3630 - 4130 mm
D 6	4130 - 4630 mm
D 7	4630 - 5130 mm



Pumping station Aqualift S
in Komfort inspection chamber system
Ø 1000 in PE-HD
Single station/twin station
for wastewater without sewage / rainwater
For underground installation

1 **KTP 500/GTF 1000** float switch controlled removable pump for conductive or non-conductive fluids.
Input power (P1): 0.48 /1.18 kW.

2 **KTP 500/GTF 1000 Tronic** with removable, pressure sensor controlled pump for conductive or non-conductive fluids, with SDS control unit. Input power (P1): 0.48 /1.18 kW.

3 **KTP 500/GTF 1000 Duo** with removable, pressure sensor controlled twin pumps for conductive or non-conductive fluids, with SDS control unit. Input power (P1): 2 x 0.48 /1.18 kW.

☐ Cover plate class A/B (Version B)

☐ Cover plate class D (Version D)

Inspection chamber system Ø 1000 in PE-HD, including access steps, water-tight, resistant to aggressive media, upper section made of polymer, continuous height and level adjustment, cover class A/B, D in cast iron according to EN 124. Inlet Ø 110, connection drilling with gasket for Ø 110 according to EN 1401 and EN 12666-1 for ventilation pipes and cable piping respectively, Installation depth from 1.5 to 5 m (see table), Pumping volume approx. 180 liters.

Pressure pipe outlet connection: 1½ inch exterior thread, pressure pipe Ø 40 mm outside diameter for PVC glue connection, with integrated non-return flap, 10 mm max solid size. Current: 230 V ~ 50 Hz. Power cable length: 10 m.

Handles groundwater depths up to 500 mm
(greater groundwater resistance on request)

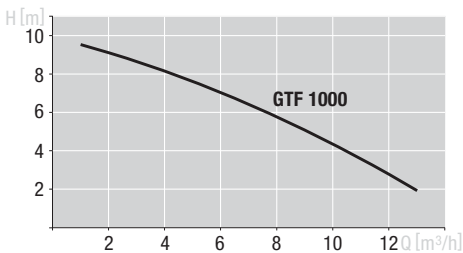
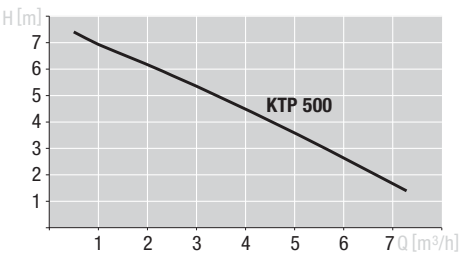
Pump KTP / GTF	Article # Class B	Article # Class D
1 D1: KTP 500	865 810 B	865 810 D
D2: KTP 500	865 820 B	865 820 D
D3: KTP 500	865 830 B	865 830 D
D4: KTP 500	865 840 B	865 840 D
D5: KTP 500	865 850 B	865 850 D
D6: KTP 500	865 860 B	865 860 D
D7: KTP 500	865 870 B	865 870 D
D1: GTF 1000	867 810 B	867 810 D
D2: GTF 1000	867 820 B	867 820 D
D3: GTF 1000	867 830 B	867 830 D
D4: GTF 1000	867 840 B	867 840 D
D5: GTF 1000	867 850 B	867 850 D
D6: GTF 1000	867 860 B	867 860 D
D7: GTF 1000	867 870 B	867 870 D
2 D1: KTP 500	865 811 B	865 811 D
D2: KTP 500	865 821 B	865 821 D
D3: KTP 500	865 831 B	865 831 D
D4: KTP 500	865 841 B	865 841 D
D5: KTP 500	865 851 B	865 851 D
D6: KTP 500	865 861 B	865 861 D
D7: KTP 500	865 871 B	865 871 D
D1: GTF 1000	867 811 B	867 811 D
D2: GTF 1000	867 821 B	867 821 D
D3: GTF 1000	867 831 B	867 831 D
D4: GTF 1000	867 841 B	867 841 D
D5: GTF 1000	867 851 B	867 851 D
D6: GTF 1000	867 861 B	867 861 D
D7: GTF 1000	867 871 B	867 871 D
3 D1: KTP 500	864 811 B	864 811 D
D2: KTP 500	864 821 B	864 821 D
D3: KTP 500	864 831 B	864 831 D
D4: KTP 500	864 841 B	864 841 D
D5: KTP 500	864 851 B	864 851 D
D6: KTP 500	864 861 B	864 861 D
D7: KTP 500	864 871 B	864 871 D
D1: GTF 1000	866 811 B	866 811 D
D2: GTF 1000	866 821 B	866 821 D
D3: GTF 1000	866 831 B	866 831 D
D4: GTF 1000	866 841 B	866 841 D
D5: GTF 1000	866 851 B	866 851 D
D6: GTF 1000	866 861 B	866 861 D
D7: GTF 1000	866 871 B	866 871 D

Pumping stations
for underground installation according to EN 752

Installation example pumping station *Aqualift S* Ø 1000



Ideal for direct rainwater disposal to the sewage system. The wastewater flows into the gutter drain ① and then under natural gravity to the *Aqualift S* pumping station ② and is pumped by the integrated pumps KTP 500 / GTF 1000 ③ into the sewage system. A float switch ④ is used as a level sensor.


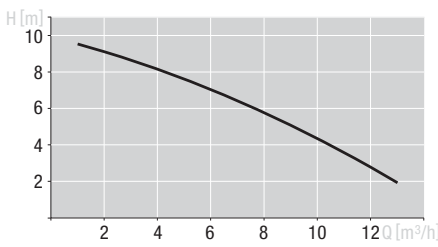




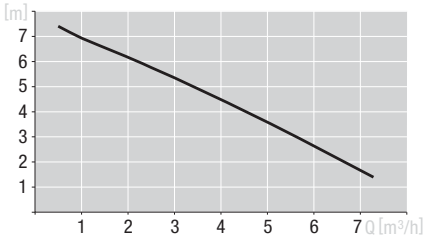

	<i>KTP 500</i>	<i>GTF 1000</i>
Current type	Alternating current	Alternating current
Voltage	230 V	230 V
Current	2.12 A	4.9 A
Power P1/P2	480 W / 310 W	1180 W / 720 W
RPM	2800 min ⁻¹	2800 min ⁻¹
Motor protection	integrated	integrated
Operating mode	S1	S3 - 30 %

Professional advantages

- **Variable upper section**
inclinable and height adjustable
from 100 to 600 mm
- **Simple to assemble** with light-weight
inspection chamber components and easy
connection technique.
- **Quick to mount** with a high level of
pre-fabrication (bottom part of inspection
chamber with pressure pipe) **and easy
connection** using fixed couplings for inlet
and pressure pipe and bores with lip
gaskets for ventilation and cable piping.
- **Long-term reliability** with an absolute
water-tight inspection chamber system
which is resistant to sedimentary deposits
and aggressive media as well as root
infiltration.

Submersible pumps for wastewater without sewage

GTF 1000			Products																
Illustration and dimensioned drawing	Article description	Pressure connection	Article #																
	Submersible pump GTF 1000 for wastewater without sewage with/without float switch Connection to pressure pipe 1 1/4 inch. Outlet side / vertical, without macerator, cable length 10 m	1 1 1/4 inch 2 1 1/4 inch	28 760 28 860																
	1 without float switch 2 with float switch Voltage: 230 V ~ 50 Hz Input power (P1): 1080 W Max. pumping height: 10 m Max. pumping capacity: 11,5 m³/h Max. submersible depth: 10 m Max. particle size: 10 mm Pressure connection: 1 1/4 inch side / vertical																		
 		<table><tr><th></th><th>GTF 1000</th></tr><tr><td>Current type</td><td>Alternating current</td></tr><tr><td>Voltage</td><td>230 V</td></tr><tr><td>Current</td><td>4.9 A</td></tr><tr><td>Power P1/P2</td><td>1080 W / 620 W</td></tr><tr><td>RPM</td><td>2800 min⁻¹</td></tr><tr><td>Motor protection</td><td>integrated</td></tr><tr><td>Operating mode</td><td>S3 - 30 %</td></tr></table>			GTF 1000	Current type	Alternating current	Voltage	230 V	Current	4.9 A	Power P1/P2	1080 W / 620 W	RPM	2800 min ⁻¹	Motor protection	integrated	Operating mode	S3 - 30 %
	GTF 1000																		
Current type	Alternating current																		
Voltage	230 V																		
Current	4.9 A																		
Power P1/P2	1080 W / 620 W																		
RPM	2800 min ⁻¹																		
Motor protection	integrated																		
Operating mode	S3 - 30 %																		

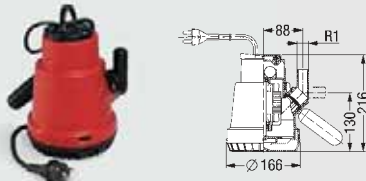
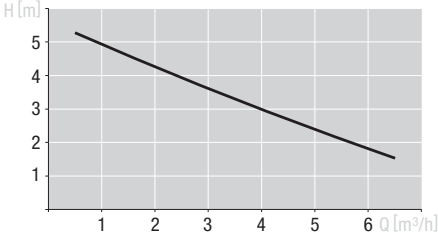

KTP 500		Products	
Illustration and dimensioned drawing	Article description	Pressure connection	Article #
	Submersible pump <i>KTP 500</i> / <i>KTP 500 TITAN</i> for wastewater without sewage with/without float switch Connection to pressure pipe 1 1/4 inch. Outlet side / vertical, cable length 10 m	<i>KTP 500</i>	
	1 without float switch	1 1 1/4 inch	28 710
	2 with float switch	2 1 1/4 inch	28 810
		<i>KTP 500 TITAN</i>	
		1 1 1/4 inch	28 750
		2 1 1/4 inch	28 850
	Voltage: 230 V ~ 50 Hz Input power (P1): 480 W Max. pumping height: 8 m Max. pumping capacity: 8 m³/h Max. submersible depth: 10 m Max. particle size: 10 mm Pressure connection: 1 1/4 inch side / vertical		
	Special model with titanium shaft Suitable for mechanical and chemical polluted media. Also resistant to chloride-containing media. Not to be used for nitro- and trichloroethylene		
			
			

	KTP 500
Current type	Alternating current
Voltage	230 V
Current	2.12 A
Power P1/P2	480 W / 320 W
RPM	2800 min ⁻¹
Motor protection	integrated
Operating mode	S1

Submersible pumps for wastewater with/without sewage

KTP 300


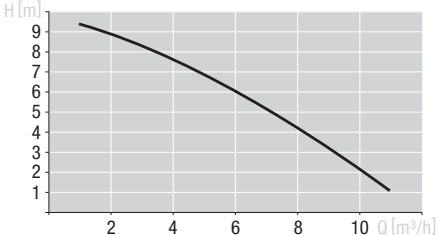

Products

Illustration and dimensioned drawing	Article description	Pressure connection	Article #
	Submersible pump KTP 300 (300 W) for wastewater without sewage with/without float switch With backwater flap, pivotable connection, cable length 10 m	1 1 inch 2 1 inch	28 740 28 840
	1 without float switch 2 with float switch Input power (P1): 280 W. Voltage: 230 V ~ 50 Hz. Max. pumping height: 6 m. Max. pumping capacity: 8 m ³ /h. Max. submersible depth: 10 m. max. particle size: 10 mm. Pressure connection: 1 inch side / vertical Removable input basket - reduction in the water level to 8 mm possible.		
			
			

	KTP 300
Current type	Alternating current
Voltage	230 V
Current	1.9 A
Power P1/P2	280 W / 114 W
RPM	2800 min ⁻¹
Motor protection	integrated
Plug	Schuko

SPZ 1000

Products

Illustration and dimensioned drawing	Article description	Pressure connection	Article #
	Submersible pump SPZ 1000 for wastewater containing raw sewage with/without float switch with macerator. Connection to pressure pipe 1 1/4 inch. Outlet side / vertical, cable length 10 m	1 1 1/4 inch 2 1 1/4 inch	28 778 28 779
	1 without float switch 2 with float switch Voltage: 230 V ~ 50 Hz Input power (P1): 1080 W Max. pumping height: 10 m Max. pumping capacity: 12 m ³ /h Max. submersible depth: 10 m Max. particle size: 10 mm Pressure connection: 1 1/4 inch side / vertical		
			
			

	SPZ 1000
Current type	Alternating current
Voltage	230 V
Current	4.9 A
Power P1/P2	1080 W / 620 W
RPM	2800 min ⁻¹
Motor protection	integrated
Operating mode	S3 - 30 %

Warning and control units for versatile uses



The warning and control units can be used for a wide range of purposes e.g. as warning devices in household and industrial systems as well as for connection to a remote signal sensor. The warning and control units with potential-free contact can be connected to the building management system (BMS). The electronic sensors react to all conductive fluids and the optical sensors to all conductive and non-conductive fluids.



Comfort control units

READY FOR CONNECTION

230 Volt control unit ready for connection by coded connectors (Fig. 1) for pumps and pressure sensor - no need for a qualified electrician for connection.

MENU NAVIGATION

User-friendly menu navigation in six languages with multi-lingual display (Fig. 2).

INTEGRATED SELF-DIAGNOSIS-SYSTEM

With integrated Self-Diagnosis-System and battery buffering continually monitors all electronic functions.

OPERATIONAL PARAMETERS

Operational parameters can easily be custom set by operator - Control unit also for use with pumps from other manufacturers.

ELECTRONIC LOG-BOOK

Electronic log-book function past history of pump operation is shown on digital control unit display.





Read-out of the electronic operating log and simple parameter adjustments

→ store read-out data on USB flash drive → load to PC and transmit by e-mail → read in optimised data again

USB--CONNECTION PORT

Includes internal USB connection port (Fig. 3) for 230 Volt control units. For read-out of electrical logbook and down / uploading of operational parameters (Fig. 4).

GSM-INTERFACE

Relaying of collective error messages via potential-free contacts and GSM-interface optional.

PROBES

Connection possibilities for numerous probes for level measurement, float switches, conductance probes (230 V only), plungers, optical probe (230 V only), level probe (on clamping strip).

POTENTIAL-FREE CONTACT

BMS (Building Management System) connection standard with all 400 Volt systems (optional with 230 Volt systems).

REMOTE SIGNAL ALARM

Remote alarm available.

FUNCTION KEYS

Key for manual pump(s) test.

Key for the acknowledgement of alarm messages.

POWER FAILURE

Battery for monitoring the alarm level during power failure.


ATEX VERSION




400 Volt control unit available in ATEX versions suitable for installation in potentially explosive atmospheres.


TeleControl TELEMETRIC SYSTEM








For connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.



230 V Comfort control unit		NEW		Products	
Illustration	Article description	Article # Mono	Article # Duo		
	230 V Comfort control units				
	Mono-/Duo control unit				
	<input type="checkbox"/> extremely versatile sensor system for measuring the level of wastewater with and without sewage. Including plunger for pneumatic level measurement. For greasy wastewater or wastewater at higher temperature only in connection with a small compressor for bubble formation (Art. # 28 048)				
	1 with pressure sensor*/without extra alarm probe 10 m pressure hose (can be extended to 15 m)	1 28 731 D	28 746 D		
	2 with pressure sensor*/conductance probe with separate conductance probe for alarm level measurement 10 m pressure hose (can be extended to 15 m) 5 m cable (cannot be extended)	2 28 731 DL	28 746 DL		
	3 with pressure sensor*/float switch with separate float switch for alarm level measurement 10 m pressure hose (can be extended to 15 m, up to 30 m on request) 10 m float switch cable (can be extended to 30 m)	3 28 731 DS	28 746 DS		
	4 with pressure sensor*/optical probe with separate optical probe for alarm level measurement and failure detection of the optical probe via the control unit 10 m pressure hose (can be extended to 15, up to 30 m on request) 5 m cable for optical probe (can be extended to 30 m)	4 28 731 DO	28 746 DO		
	Mono-/Duo control unit				
	<input type="checkbox"/> sensor system for level measurement for wastewater without sewage. With float switches to measure ON 1, ON 2 (only 28 746-S) and OFF levels.				
	5 with float switch/without extra alarm probe 10 m float switch cable (can be extended to 30 m)	5 28 731 S	28 746 S		
6 with float switch*/float switch with separate float switch for alarm level measurement 10 m float switch cable (can be extended to 30 m)	6 28 731 SX	28 746 SX			
*with compressor for air bubbling					

230 V Comfort control unit NEW			Products
Illustration	Article description	Article # Mono	Article # Duo
	230 V Comfort control units Mono-/Duo control unit <input type="checkbox"/> Extremely versatile sensor system for measuring the level of wastewater with and without sewage. Including level probe for pneumatic level measurement and failure detection of the level probe via the control unit. For greasy wastewater or wastewater at higher temperature, the use of a small compressor is not necessary. 7 with level probe/without extra alarm probe 10 m level probe cable (can be extended to 30 m) 8 with level probe/float switch with float switch for alarm level measurement 10 m level probe cable (can be extended to 30 m) 10 m float switch cable (can be extended to 30 m)	7 28 731 P	28 746 P
		8 28 731 PS	28 746 PS
	Mono-/Duo control unit <input type="checkbox"/> sensor system for level measurement for wastewater without sewage. Including alarm level measurement. Not suitable for rainwater or non-diluted condensate. Including conductance probes for the measuring of ON 1, ON 2 (28 746-LLF/28746-LLV only), OFF and ALARM level. Switching points cannot be adjusted freely.		
	Mono control unit 9 with conductance probe/conductance probe Level ON/OFF fixed, alarm level can be adjusted 5 m cable for conductance probe	9 28 731 LL	-
	Duo control units 10 with conductance probe/conductance probe ON 1 fixed/ON 2 variable/ALARM with fixed distance to ON 2 5 m cable for conductance probe 11 with conductance probe/conductance probe ON 1 variable/ON 2 fixed/ALARM with fixed distance to ON 2 5 m cable for conductance probe	10 - 11 -	28 746 LLF 28 746 LLV
	Level probe	28 082	28 082
	Float switch		
	float switch cable 10 m float switch cable 20 m	185-043 185-045	185-043 185-045

400 V Comfort control unit			Products
Illustration	Article description	Article # Mono	Article # Duo
	400 V Comfort control unit		
	suitable for max. switching current from - to		
	2.5 - 4.0 A Mono	28 755	-
	4.0 - 6.3 A Mono	28 756	-
	6.3 - 10.0 A Mono	28 781	-
	2 x 2.5 - 4.0 A Duo	-	28 757
	2 x 4.0 - 6.3 A Duo	-	28 758
	2 x 6.3 - 10.0 A Duo	-	28 783
	2.5 - 4.0 A ATEX version, Mono	28 759	-
	4.0 - 6.3 A ATEX version, Mono	28 761	-
	2 x 2.5 - 4.0 A ATEX version, Duo	-	28 762
	2 x 4.0 - 6.3 A ATEX version, Duo	-	28 763

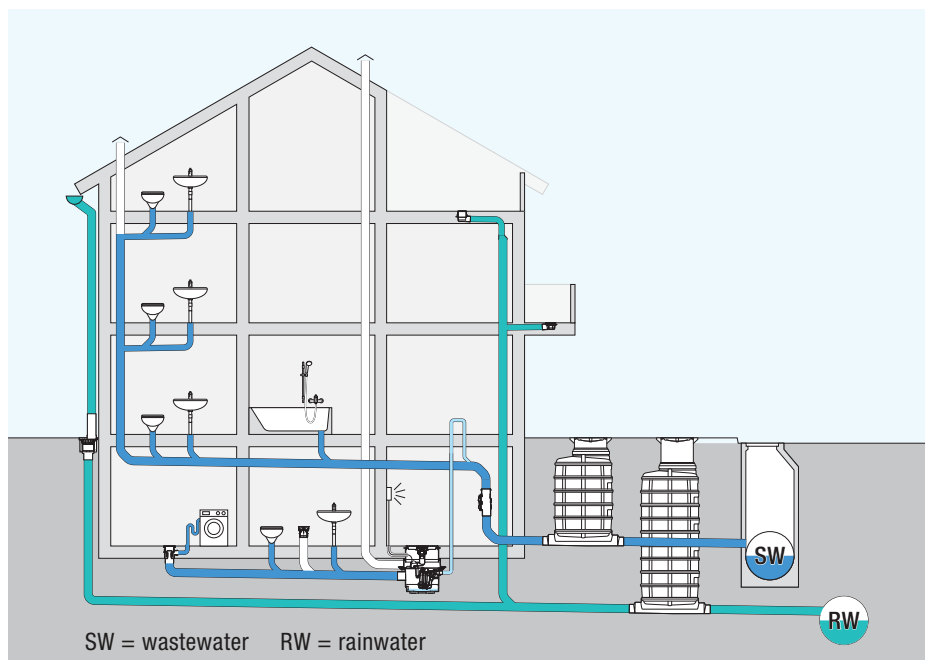
Warning units / 230 V Comfort control units / 400 V Comfort control units			Accessories
Illustration	Article description	Article #	
	Connector set for connection to pump/probe cables for connection to the coded connectors from 28 731 / 28 746	80 893	
	Audible alarm <input type="checkbox"/> cable length 20 m suitable for all warning- and control units	20162	
	Potential-free contact suitable for all warning- and control units	80072	
	USB housing socket for routing the USB connection to the outside of the housing suitable for 230 Volt Comfort control units Mono/Duo	28 785	
	Cable extension set (for motor) 10 m cable length A maximum of two cable extension sets can be connected	80 890	
	Cable extension set (for probe) 10 m cable length A maximum of two cable extension sets can be connected	80 889	
	Compressor set for air bubbling for use in combination with lifting stations and pumping stations with pressure control: <input type="checkbox"/> prevents soiling, compensates leaks, avoids the formation of condensate in the pressure hose, makes operation of systems possible with pressure hose lengths > 10 m, including T-piece connection, including 10 m pressure hose	28 048	
	TeleControl telemetric system for connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.	28 792	
	TeleControl antenna booster for TeleControl telemetric system incl. 2.5 m cable to improve reception. With magnetic base.	28 793	
	Antenna booster extension cable cable length 2.5 m	28 794	



4 Drains and channels

Project drains	Page 124 – 139
Bathroom / Shower drains	Page 140 – 155
Shower channels	Page 158 – 172
Wall drains	Page 174 – 178
Basement drains	Page 180 – 187
Stainless steel drains and channels	Page 190 – 202
Parking deck / Balcony / Roof / Gutter / Yard drains	Page 204 – 226

Drainage: how it works



Dimensioning

The outlet (Ø in mm) used for floor drains and drain pipes must be selected in such a way that the draining capacity corresponds to the occurrence of wastewater.

Connection values of drainage fixtures and diameters for individual connection pipes are summarised in DIN 1986-100. According to this, the following values can be taken as a basis for floor drains:

Floor drains

- Ø 50 = 1.0 l/sec.
- Ø 75 = 1.5 l/sec.
- Ø 110 = 2.0 l/sec.

How it works:

Drains are designed to collect, receive and convey wastewater. These can be bathroom, floor, ceiling, roof or special drains and also include balcony and yard drains. One important aspect is that usually only the outlet side needs to be considered, not the inlet side. The inlet fittings do dispense a certain amount of water, but this is only rarely or never decisive for the dimensioning of drains because the water is collected by most draining points and temporarily stored. Once this approach has been agreed, the regulations governing draining points become easier to understand. The specific function also results in the rule that the draining point must be sealed using an odour trap. Exceptions are only permitted where there are no wastewater gases in the pipes or where gases cannot occur.

Accordingly, in compliance with EN 1253, section 6.1.4 or DIN 19541 drains must have the following odour trap heights:

- Drains with sealing water replacement - bathroom drains: 50 mm (Euro standard)
- Drains with rainwater - gutter drains: 100 mm

Larger trap heights are necessary for rooms with a slight vacuum or overpressure in order to avoid the water seal being broken and wastewater gases being siphoned into the room. If a sealing water height suitable for the pressures cannot be achieved, the route should pass via a connecting pipe with shut-off function.

When drains are installed outdoors they must be frost-free. The easily accessible cleaning opening required for drains must be achieved using removable odour traps.

The right cover whatever the job

Load classes for drains, covers and upper sections

Drains, covers and upper sections must be properly selected so that they are able to handle the loads at the installation point. The two standards EN 1253-1 (building drains) and EN 124 (upper sections and covers for traffic areas) are applicable here. In cases of doubt, the higher class must always be chosen.

In accordance with EN 1253-1 – inside buildings		In accordance with EN 124 – outside buildings	
K 3	Class K 3 for max. load of 300 kg: Areas without traffic, such as in bathrooms at home, in nursing homes, hotels, schools, swimming baths, public washing and shower facilities, balconies, loggias, patios and green roofs.	A 15	Class A 15 for max. load of 1.5 tonnes: Areas that can only be used by pedestrians and cyclists.
L 15	Class L 15 for max. load of 1.5 tonnes: Areas driven over by light traffic, without forklift trucks, in industrial buildings.	B 125	Class B 125 for max. load of 12.5 tonnes: Pavements, pedestrian areas and comparable areas, parking lots or multi-storey car parks for cars.
M 125	Class M 125 for max. load of 12.5 tonnes: Areas driven over by traffic, such as multi-storey car parks, factories and workshops.	C 250	Class C 250 for max. load of 25 tonnes: Upper sections in the gutter area which, measured from the edge of the kerb, extended up to max. 0.5 m into the road and max. 0.5 m onto the pavement.
		D 400	Class D 400 for max. load of 40 tonnes: Road surfaces (including pedestrian areas), hard shoulders and parking areas which are approved for use by all types of road vehicles.



Material selection, drains made of PP and ABS

Overview of resistance values

Drains are offered in a range of different materials. Which material is used depends on the requirements set by the type of wastewater to be discharged. Drains made of polymer are generally characterised by their high impact resistance, light weight and simple design.

PP				ABS			
Medium	Concentration	Temperature in °C	Resistance	Medium	Concentration	Temperature in °C	Resistance
Acetone	100.00 %	23°	+	Acetone	technically pure	23°	-
Formic acid	98.00 %	23°	+	Formic acid	40.00 %	to 50°	+
Ammonium sulphate		to 100°	+	Ammonium sulphate	saturated	to 100°	+
Amyl alcohol		60°	+	Amyl alcohol		23°	+
Petrol/benzene mixture		23°	o	Petrol/benzene mixture	80 to 20	23°	-
Brake fluid		to 60°	+	Brake fluid		23°	-
Bromine		23°	-	Bromine, liquid		23°	-
Butane		to 60°	+	Butane		23°	o
Calcium hypochlorite	12.5 % active Cl	to 60°	+	Calcium hypochlorite	saturated	to 50°	+
Chlorine, liquid		23°	-	Chlorine, liquid		23°	-
Citric acid	saturated	to 100°	+	Citric acid	saturated	to 50°	+
Acetic acid	100.00 %	23°	+	Acetic acid	to 50.00 %	to 50°	+
Hydrofluoric acid	40.00 %	to 60°	+	Hydrofluoric acid	40.00 %	23°	+
Formaldehyde		to 60°	+	Formaldehyde	30.00 %	to 50°	+
Glycerine	100.00 %	to 60°	+	Glycerine		to 50°	+
Magnesium chloride	saturated	to 100°	+	Magnesium chloride	saturated	to 50°	+
Methanol	100.00 %	to 60°	+	Methanol	technically pure	to 20°	+
Lactic acid	10.00 %	to 60°	+	Lactic acid	10.00 %	to 50°	+
Motor oil		23°	+	Motor oil		to 50°	+
Sodium chloride	saturated	to 100°	+	Sodium chloride	saturated	to 50°	+
Sodium thiosulphate	saturated	to 60°	+	Sodium thiosulphate	saturated	to 50°	+
Nitrobenzene	100.00 %	60°	o	Nitrobenzene		23°	-
Perchloroethylene		23°	o	Perchloroethylene		23°	-
Phenol	saturated	to 60°	+	Phenol	10.00 %	50°	o
Propanol	100.00 %	to 60°	+	Propanol		to 50°	+
Nitric acid	50.00 %	23°	o	Nitric acid	30.00 %	23°	+
Hydrochloric acid		to 60°	+	Hydrochloric acid	37.00 %	23°	+
Sulphuric acid	to 10 %	to 100°	+	Sulphuric acid	to 50 %	to 50°	-
Detergent	ready to use	to 60°	+	Detergent	ready to use	23°	+
Nitrogen peroxide	3.00 %	to 100°	+	Nitrogen peroxide	3.00 %	to 50°	+

+ extremely resistant o moderately resistant - not for use

Drains made of *Ecoguss*

Overview of resistance values

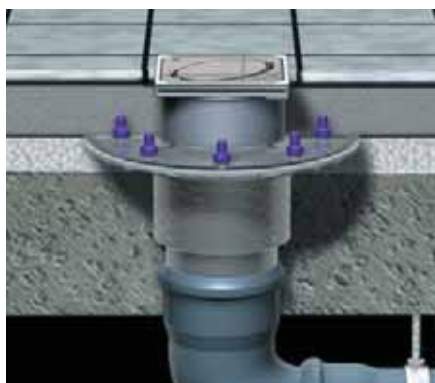
Building drains made of the composite material *Ecoguss* are naturally hygienic and highly resistant to chemicals on account of their smooth and corrosion-free surface. Additional protective coatings are not necessary. Weight approx. 70 % lower than cast drains, no electrical grounding necessary and suitable for installation in hot bitumen thanks to high-temperature resistance properties.

Medium	Temperature in °C	Resistance	Medium	Temperature in °C	Resistance
1,1,1-trichloroethane	RT	+	Methanol	RT	+
Acetone	RT	+	Methyl-tert.-butyl ether	RT	+
Formic acid 85 %	RT	+	Lactic acid 90 %	RT	+
Ammoniac 24.5 %	RT	+	Motor oil (150°)	150°	+
Petrol	RT	+	Sodium chloride, saturated	RT	+
Brake fluid (Toyota)	RT	+	Sodium hypochlorite (80°)	80°	o
Butyl alcohol, n-butanol	RT	+	Sodium base liquor 30 %	RT	+
Calcium chloride	RT	+	Sodium base liquor 50 %	RT	+
Calcium base liquor	RT	+	n-butyl acetate	RT	+
25 % chlorine solution	RT	+	n-hexane	RT	+
Diesel	RT	+	Phosphoric acid 40 %	RT	+
Diethyl ether	RT	+	Rapeseed methyl ester	RT	+
Acetic acid 99 %	RT	+	Reference petrol C, ASTM D-471	RT	+
Ethanol	RT	+	Nitric acid 10 %	RT	+
Ethylene glycol	RT	+	Nitric acid 65 %	RT	+
FAM-DIN 51604-A	RT	+	Hydrochloric acid 10 %	RT	+
FAM-DIN 51604-B	RT	+	Hydrochloric acid 37 %	RT	+
FAM-DIN 51604-C	RT	+	Sulphuric acid 10 %	RT	+
Frigene 114 (tetrafluorodichloroethane)	RT	+	Sulphuric acid 37 % (battery acid)	RT	+
Frigene R134 + 5 % Aral Alur EE32	RT	+	Silicone oil	RT	+
Hydraulic fluid	RT	+	Toluol	RT	+
Isopropanol	RT	+	Water 90°C up to 1000 h	90°	+
Potassium chromate 30 %	RT	+	Water, cold	RT	+
Potassium base liquor 45 %	RT	+	Xylene	RT	+
Potassium permanganate 6 % (80°)	RT	o	Zinc chloride solution (50 wt.%)	RT	+
Kerosine	RT	+	Zinc chloride solution 10 %	RT	+
			Citric acid (50 wt.%)	RT	+

+ extremely resistant o moderately resistant RT = Room temperature

Waterproofing options

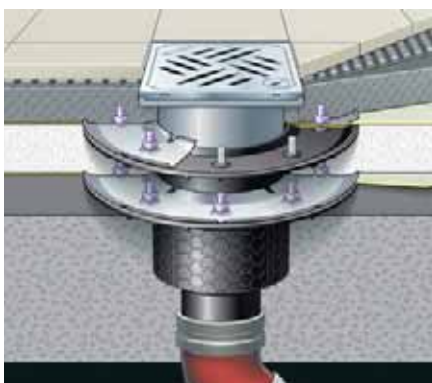
In rooms with a high moisture level, such as bathrooms, spas, washrooms or industrial kitchens in particular, high demands are made on waterproofing. The assumption that ceramic floors are watertight is often a mistake. The resulting decision to do without sealing measures frequently leads to unpredictable consequences such as soaked components, cracked joints, frost damage, mould formation or corrosion. For this reason, the EN 1253 standard requires a waterproofing seal to be installed under ceramic and natural stone floors in wet rooms.



Drain sealed with a sealing strip

Can be used as waterproofing in all wet and damp rooms.

The sealing strips used that are made of elastomer or synthetic materials and also bitumen sealing strips can be installed loosely, adhered with bitumen or attached using other hot polymer adhesive compounds.

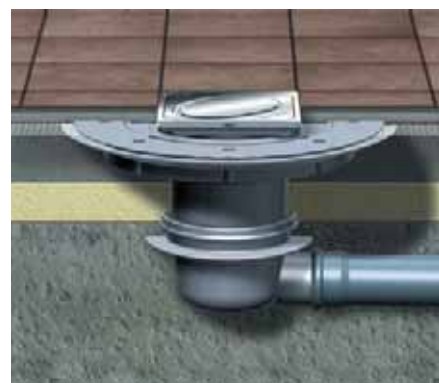


Drain sealed with two sealing strips

This can be used to seal against moisture in all wet and damp rooms.

The elastomer or polymer sealing sheets and bituminous sheeting can be laid loosely, be bonded with bitumen or other polymer hot glue materials.

The upper sealing level serves as a waterproofing layer against seeping water, the lower waterproofing layer protects the floor from moisture rising from below.



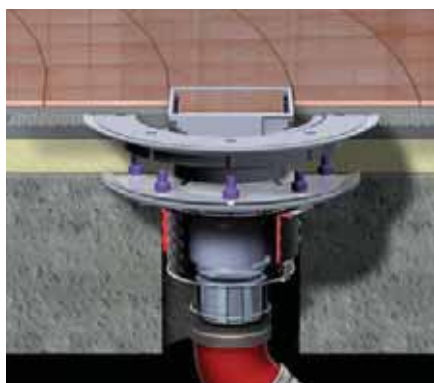
Drain with shallow bed gasket

Can be used in wet rooms with non-pressurised water e.g. bathroom, shower, kitchen).

The manufacturers of chemical building products have come up with a safe and economic alternative to sub-screed seals - in the shape of special ready-to-use spreadable sealing materials. These sealing materials (e.g. PCI, Schomburg, Deitermann) form a flexible seal that is watertight and that can also bridge cracks. KESSEL supplies the *Variofix* shallow bed upper section as an optimum solution for very critical details when connecting drainage points in shallow bed constructions. Shallow bed upper section can also be used in combination with epoxy resin seals.



SmartSelect makes planning quite simply quicker - visit **smartselect.kessel.de** for the configurator for alternative waterproofing layers in the system



Drain with shallow bed gasket and lip seal

Used for waterproofing in all wet and damp rooms with seepage water and non-pressurised water from below.

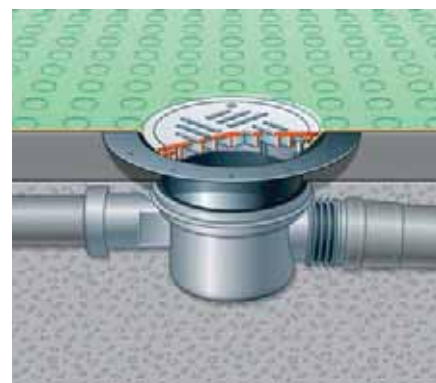
The shallow bed gasket used is applied above the screed with special ready-to-use and spreadable sealing materials in compliance with the ZDB information sheet. This is governed uniformly in the building regulations of all German states. The consequence of this is that structural works, such as bathrooms, need to be protected from moisture penetration. Parts exposed to moisture are usually covered with tiles and slabs. Ceramic materials are resistant to moisture and are water-repellent but they are not waterproof. In this case they are water-permeable which means they require additional sealing.

The second seal must be positioned e.g. on the concrete slab. In this case, a lip seal is used. The lower seal level prevents moisture from rising. Professional installation must comply with the standard DIN 18195-4.



Waterproofing layer for impermeable concrete

In accordance with EN 206-1 and DIN 1045-2 constructional elements made of impermeable concrete. Impermeable concrete constructional elements are structures which are prepared without an additional outer laminar waterproofing layer and prevent water penetration solely on account of the concrete used and design measures such as joint sealing and crack width restriction. Impermeable concrete construction elements belong to the group of rigid waterproofing layers and adopt both the load-bearing and sealing function in one. Floor slab and outer walls are cast as concrete tanking with a high water penetration resistance in accordance with EN 206-1 and DIN 1045-2.



Waterproof flooring

Since the floor covering takes over the function of the sealing level in this case, the drain must be firmly fixed to the floor covering using a clamping flange. The clamping flange upper section can be combined with all the drain bodies suitable for the respective system.

Fire protection

Fire protection

Every year, many people die in fires. Preventative fire protection requirements have been tightened over the past few years because of large-scale fires.

Floor drains and barrier-free shower systems with non-combustible and combustible drain pipes are installed in space-closing ceilings and present a fire hazard, since the fire can spread to adjacent fire zones through the pipes. Construction measures are required here in particular in order to minimise the risk of any fire spreading.

The German State Building Code defines the required fire resistance period in classes as follows:

Fire resistance class	F30	F60	F90	F120
Fire resistance period (minutes)	> 30	> 60	> 90	> 120

All KESSEL drain systems with a fire protection feature comply with fire resistance class F120. There is no need for preventative fire protection for floor drains:

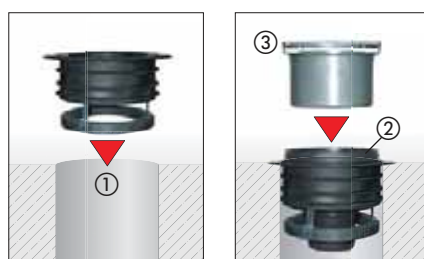
- in single- and two-family homes
- in basements
- with horizontal outlets (under certain conditions).

How it works

KESSEL offers *Quick-Fit* and *Fire-Kit* for System 125 and for System 200 floor drains with vertical outlets:

Quick-Fit passage seal including fire protection, with approval Z-19.17-1719

The fire-protection mass provides the necessary fire protection. This is attached by a metal hoop on the lower end of the installation aid. In the event of a fire, the fire protection mass swells up and closes the gap resulting from the melting seal. This guarantees a smoke-tight closure and stops the fire getting through.



- ① Insert **Quick-Fit** in core hole (Ø 160 mm).
- ② Lower the **Ecoguss** (2) drain body with vertical outlet into **Quick-Fit**.
- ③ Fit the upper section.

Fire-Kit fire protection insert (certification no. Z-19.17-1719)



Fire burns away all exposed plastic pipe. The flames then reach the outlet of the drain body.



The odour trap built into the drain body combines with sealing water to prevent smoke and gas reaching storeys higher up.



The *Fire-Kit* fire protection insert expands due to the heat and completely seals off the openings in the concrete floor, preventing fire from spreading to the floor above.

Sound protection / Maintenance and repairs

Sound protection

Oscillations are induced in a building structure via the contact points of a sanitary object with the building. The structure-borne sound is passed on and emitted from the ceilings and walls in the adjacent rooms as audible airborne sound. Particular care is taken during building planning to ensure noise annoyance caused by floor drains is kept to a minimum.

The Fraunhofer Institute in Stuttgart measured the following noise levels for KESSEL floor/ceiling drains:

Drains	DIN 4109	VDI 4100 SST III
Project drains <i>Ecoguss</i> <i>Practicus</i>	≥ 16 dB (A) ≥ 18 dB (A)	≥ 14 dB (A) ≥ 15 dB (A)
Bathroom drains <i>"The Ultraflat"</i>	≥ 12 dB (A)	≥ 10 dB (A)
Shower channels <i>Linearis Comfort</i> <i>Linearis Compact</i>	≥ 17 dB (A) ≥ 14 dB (A)	≥ 13 dB (A) ≥ 10 dB (A)
<i>Scada</i> wall drains	≥ 17 dB (A)	≥ 14 dB (A)

Maintenance and repairs in accordance with EN 12056

Installation is never the end of the story of course. Regular and thorough maintenance is a pre-condition for the permanent problem-free use of drains. This is one of the requirements in EN 12056 Part 1. During this test, the draining performance of the individual draining products also has to be observed. Malfunctions can be a sign of changes in the draining system which can then be diagnosed and eliminated in good time. The term malfunctions includes reduced draining performance, louder draining noises, odour traps being drained empty and odour pollution. Drains with removable odour traps have proved their worth in practice. Removal of the unit provides good access, allowing all the functional parts to be checked easily by means of a visual inspection.

Tip: Many KESSEL drains have the integrated locking system *Lock & Lift*. This allows the cover to be opened easily for maintenance, removed and locked again safely. The cleaning time required is reduced by about 70 % compared with covers which are locked in the conventional manner using two screws.



INFORMATION

Do you require more detailed information? Our Service Centre will be happy to help.

You can find your personal KESSEL contact on page 3 of this catalog!

Complete System Solution

In addition to individual stainless steel drains and channels for kitchens or the food processing industry, KESSEL also offers complete separator packages consisting of separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.

- Lifting and pumping stations for free standing and underground installation see chapter 3 "lifting stations".
- Grease separators for free standing and underground installation see chapter 5 "separators".

Individual Solutions

Thanks to it's knowledge and possibilities, KESSEL is not only able to manufacture series products, but also special solutions in accordance with project-specific requirements. For additional information please take a look at the Individual Solutions section of this catalogue on page 283.

References

Over the past decades, KESSEL products have proven themselves countless times in destinations all over the world. Scan the following QR code to directly view our list of references.



www.kessel.com/references

KESSEL - Modular Systems

KESSEL offers a large selection of fully complete bathroom drains and shower channels ready for installation. In the case that you have not found the exact drain to meet your requirements KESSEL offers our modular component system. This system allows you to choose the individual drain body, cover and accessory that you like and 'build your own' bathroom drain or shower channel.

System 125

The optimal solution

Floor drain *Practicus*
with pressure sealing flange



Individual parts System 125



Upper section in ABS
with design cover *Oval*
□ 120 mm
in stainless steel AISI 304
Art. # 48 202



Hair filter
Art. # 48 700



Pressure sealing flange
in stainless steel AISI 304
Art. # 48 402



Drain body *Practicus*
in PP
Art. # 45 210

= Complete article



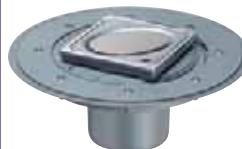
System 100

The optimal solution

Bathroom drain *Classic*
with shallow bed upper section
and design cover *Oval*



Individual parts System 100



Variofix
shallow bed upper section
in ABS
with design cover *Oval*
□ 120 mm
in stainless steel AISI 304
Art. # 47 905

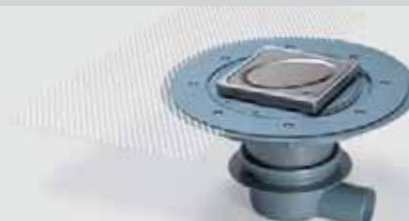


Hair filter
Art. # 43 700



Drain body *Classic*
in ABS
with removable odour trap
Art. # 40 150

= Complete article





Project drains

Floor / Roof drains *Ecoguss* Page 127 – 139

Drains made of *Ecoguss* guaranteeing the highest level of safety in the building.

Floor / Roof drains *Practicus* Page 127 – 139

Practicus heavy duty drains, designed for use in public, industrial and private buildings.

Bathroom / Shower drains

Bathroom drains System 125

“The Ultraflat” Page 140 – 147

Minimum installation height for renovation and construction

“The Vertical” Page 140 – 147

Compact drain body with vertical outlet makes it ideal for renovations

Giro Page 148 – 155

The ones with the special twist

Bathroom drains System 100

“The Superflat” Page 148 – 155

Bathroom drain with flexible outlet and low installation height

Classic Page 148 – 155

Our classical products - compact with high performance



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

Ecoguss is the future – the days of cast iron are over



Ecoguss and *Practicus* building drains for all floor structures and types of waterproofing layers.

New: drains with shallow bed upper sections and upper sections with grate covers made of stainless steel AISI 316L for aggressive media.



Floor drains *Ecoguss*
with pressure sealing flange

HIGH-TECH-MATERIAL *Ecoguss*

FIRE PROTECTION

Fire and smoke protection insert *Fire-Kit* and *Quick-Fit* passage seal with fire protection (Fig. 4) with approval Z-19.17-1719:

Ecoguss drains with a vertical outlet can be equipped with the fire protection insert *Fire-Kit*, which is compliant with the highest fire resistance class R 120.

Only use *Fire-Kit* in combination with an odour trap.

SOUND PROTECTION

Measurements carried out by the Fraunhofer Institute in Stuttgart:

Ecoguss floor/ceiling drain

- ≥ 16 dB(A) according to DIN 4109

- ≥ 14 dB(A) according to VDI 4100 SST III

HYGIENE

Ecoguss drains do not require coating. They are naturally hygienic and absolutely corrosion-free.

ASSEMBLY

Ecoguss drains are three times lighter than cast iron despite being just as sturdy, thus making transport and installation much easier. There is no longer any need for complex electrical grounding. The drain body requires a core hole with a diameter of only 160 mm.





Floor drains **Ecoguss**

with glue flange



Floor drains **Practicus**

with pressure sealing flange and shallow bed upper section

INSTALLATION AID

Cheaper and faster installation for drains with vertical outlet:
Quick-Fit passage seal for core holes with a diameter of only 160 mm (around 2/3 cost saving).
 Additional sound decoupling and smoke-tight closure with the version with fire protection with approval Z-19.17-1719 (Fig. 4).

PERFECT CONNECTION

Honeycomb structure for perfect integration and stability in concrete (Fig. 1).

MODULAR DESIGN

Individual drain composition using the KESSEL modular system (Fig. 2).

VARIABLE

Variable upper sections can be twisted, tilted, height-adjusted. In the case of shallow bed upper sections, the covers can also be moved for adaptation to the tile pattern (Fig. 3).

CONNECTION

Suitable for SML pipes – including Ø 83.

INSTALLATION / SYSTEM ADVANTAGES **Practicus**

MODULAR DESIGN

Individual drain composition using the KESSEL modular system (Fig. 2).

INSTALLATION AID

Cheaper and faster installation for drains with vertical outlet:
Quick-Fit passage seal for core holes with a diameter of only 160 mm.

SOUND PROTECTION

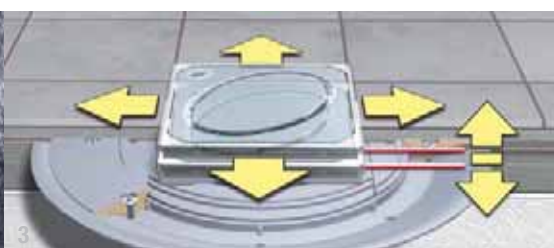
Measurements carried out by the Fraunhofer Institute in Stuttgart:
Practicus floor/ceiling drain
 - ≥ 18 dB(A) according to DIN 4109
 - ≥ 15 dB(A) according to VDI 4100 SST III

FIRE PROTECTION

Fire-Kit fire and smoke protection insert and *Quick-Fit* passage seal including fire protection (Fig. 4) with approval Z-19.17-1719:
Practicus drains with a vertical outlet can be equipped with the fire protection insert *Fire-Kit*, which is compliant with the highest fire resistance class R 120.
 Only use *Fire-Kit* in combination with an odour trap.



2



3



4

Design the drain you need yourself using our practical matrix order system.

- 1 Select the drain body, lateral or vertical outlet and the diameter...
- 2 Select the matching upper section ...
- 3 The Article # for the matching drain is stated in the respective section.

Drains System 125

Project drains *Ecoguss* with connection flange

Matrix order system

Drain body

***Ecoguss* with connection flange**
with odour trap, connection to SML-pipe

Upper sections

Shallow bed upper section in ABS, with mesh fabric

Shallow bed upper section in ABS, with mesh fabric

Upper section in ABS

With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed
Art. # 48 963

With design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System
Art. # 48 904

With design cover Kessel 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System
Art. # 48 201

Complete drain comprising a combination of drain body and upper section

Drain body	Upper section	Complete drain
Ø 58 Lateral outlet Art. # 48 358 Vertical outlet Art. # 48 458	Shallow bed upper section in ABS, with mesh fabric	48 358.51 48 458.51
Ø 78 Lateral outlet Art. # 48 378 Vertical outlet Art. # 48 478	Shallow bed upper section in ABS, with mesh fabric	48 378.51 48 478.51
Ø 83 Lateral outlet Art. # 48 383 Vertical outlet Art. # 48 483	Shallow bed upper section in ABS, with mesh fabric	48 383.51 48 483.51
Ø 110 Lateral outlet Art. # 48 311 Vertical outlet Art. # 48 411	Shallow bed upper section in ABS, with mesh fabric	48 311.51 48 411.51
	Upper section in ABS	48 311.53 48 411.53
	With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed	48 311.53 48 411.53
	With design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System	48 311.53 48 411.53
	With design cover Kessel 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System	48 311.53 48 411.53

For other combinations and accessories see modular system page 136 - 139

KESSEL

EN 1253


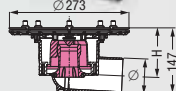



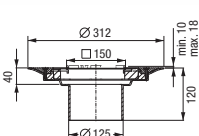

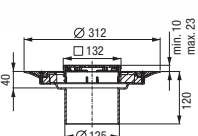

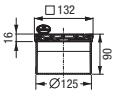

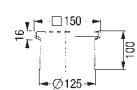
Catalogue 3.0

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For other product combinations and accessories, see the modular system at page 136 - 139

Project drains *Ecoguss* with pressure sealing flange

Matrix order system / Products

Drain body	Upper sections																												
Ecoguss with pressure sealing flange with odour trap, connection to SML-pipe   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>B</td><td>245</td><td>134</td><td>134</td><td>148</td></tr> <tr><td>H</td><td>120</td><td>109</td><td>108</td><td>92</td></tr> </table>   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>H</td><td>100</td><td>110</td><td>110</td><td>110</td></tr> </table>	Ø	58	78	83	110	B	245	134	134	148	H	120	109	108	92	Ø	58	78	83	110	H	100	110	110	110	Shallow bed upper section in ABS, with mesh fabric   <p>With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed</p> <p>Art. # 48 963</p>	Shallow bed upper section in ABS, with mesh fabric   <p>With design cover <i>Kessel</i> 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System</p> <p>Art. # 48 904</p>	Upper section in ABS   <p>With design cover <i>Kessel</i> 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System</p> <p>Art. # 48 201</p>	Upper section in ABS   <p>With slotted cover 138 x 138 mm in stainless steel AISI 304, class K 3, screwed</p> <p>Art. # 48 950</p>
Ø	58	78	83	110																									
B	245	134	134	148																									
H	120	109	108	92																									
Ø	58	78	83	110																									
H	100	110	110	110																									
Complete drain comprising a combination of the drain body and upper section																													
Ø 58																													
Lateral outlet Art. # 48 758	48 758.51	48 758.53	48 758.63	48 758.11																									
Vertical outlet Art. # 48 858	48 858.51	48 858.53	48 858.63	48 858.11																									
Ø 78																													
Lateral outlet Art. # 48 778	48 778.51	48 778.53	48 778.63	48 778.11																									
Vertical outlet Art. # 48 878	48 878.51	48 878.53	48 878.63	48 878.11																									
Ø 83																													
Lateral outlet Art. # 48 783	48 783.51	48 783.53	48 783.63	48 783.11																									
Vertical outlet Art. # 48 883	48 883.51	48 883.53	48 883.63	48 883.11																									
Ø 110																													
Lateral outlet Art. # 48 711	48 711.51	48 711.53	48 711.63	48 711.11																									
Vertical outlet Art. # 48 811	48 811.51	48 811.53	48 811.63	48 811.11																									


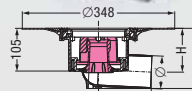



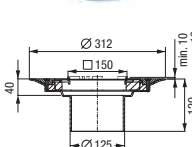

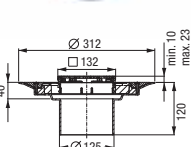

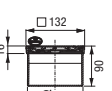

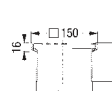
For other combinations and accessories see modular system page 136 - 139



EN 1253

Project drains *Ecoguss* with glue flange

Matrix order system / Products

Drain body	Upper sections																												
<i>Ecoguss</i> with glue flange with odour trap, connection to SML-pipe   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>B</td><td>245</td><td>134</td><td>134</td><td>148</td></tr> <tr><td>H</td><td>120</td><td>107</td><td>106</td><td>90</td></tr> </table>   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>H</td><td>100</td><td>110</td><td>110</td><td>110</td></tr> </table>	Ø	58	78	83	110	B	245	134	134	148	H	120	107	106	90	Ø	58	78	83	110	H	100	110	110	110	Shallow bed upper section in ABS, with mesh fabric   With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed Art. # 48 963	Shallow bed upper section in ABS, with mesh fabric   With design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System Art. # 48 904	Upper section in ABS   With design cover Kessel 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System Art. # 48 201	Upper section in ABS   With slotted cover 138 x 138 mm in stainless steel AISI 304, class K 3, screwed Art. # 48 950
Ø	58	78	83	110																									
B	245	134	134	148																									
H	120	107	106	90																									
Ø	58	78	83	110																									
H	100	110	110	110																									
Ø 58 Lateral outlet Art. # 48 558 Vertical outlet Art. # 48 658	Complete drain comprising a combination of the drain body and upper section																												
Ø 78 Lateral outlet Art. # 48 578 Vertical outlet Art. # 48 678	48 558.51	48 558.53	48 558.63	48 558.11																									
Ø 83 Lateral outlet Art. # 48 583 Vertical outlet Art. # 48 683	48 658.51	48 658.53	48 658.63	48 658.11																									
Ø 110 Lateral outlet Art. # 48 511 Vertical outlet Art. # 48 611	48 578.51	48 578.53	48 578.63	48 578.11																									
	48 678.51	48 678.53	48 678.63	48 678.11																									
	48 583.51	48 583.53	48 583.63	48 583.11																									
	48 683.51	48 683.53	48 683.63	48 683.11																									
	48 511.51	48 511.53	48 511.63	48 511.11																									
	48 611.51	48 611.53	48 611.63	48 611.11																									


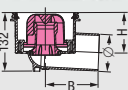

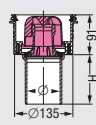

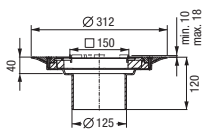

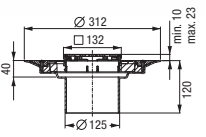

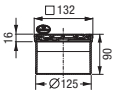

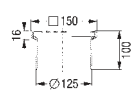
For other combinations and accessories see modular system page 136 - 139



EN 1253

Project drains *Ecoguss* with connection flange

Matrix order system / Products

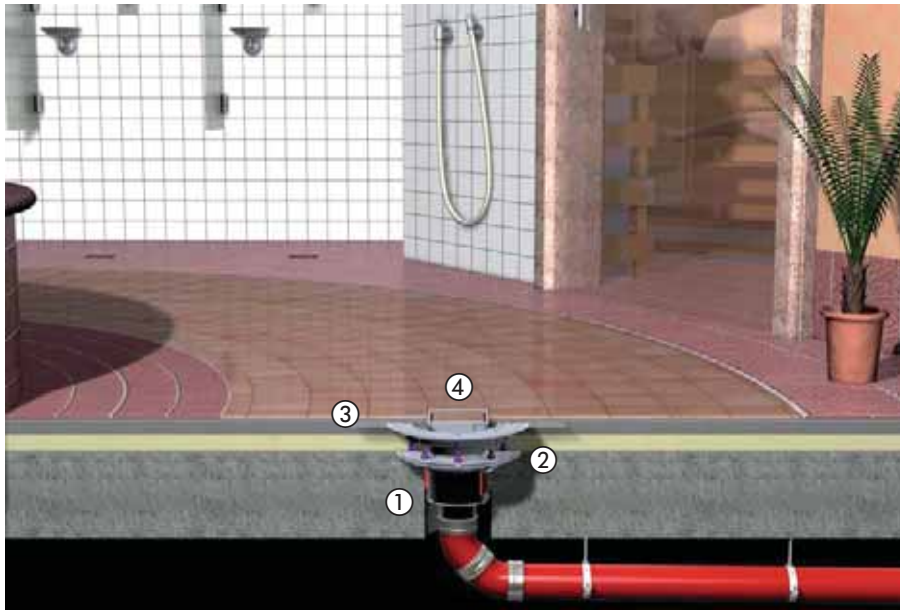
Drain body	Upper sections																												
Ecoguss with connection flange with odour trap, connection to SML-pipe   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>B</td><td>245</td><td>134</td><td>134</td><td>148</td></tr> <tr><td>H</td><td>120</td><td>109</td><td>108</td><td>92</td></tr> </table>   <table border="1"> <tr><td>Ø</td><td>58</td><td>78</td><td>83</td><td>110</td></tr> <tr><td>H</td><td>100</td><td>110</td><td>110</td><td>110</td></tr> </table>	Ø	58	78	83	110	B	245	134	134	148	H	120	109	108	92	Ø	58	78	83	110	H	100	110	110	110	Shallow bed upper section in ABS, with mesh fabric   With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed Art. # 48 963 ▼	Shallow bed upper section in ABS, with mesh fabric   With design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System Art. # 48 904 ▼	Upper section in ABS   With design cover Kessel 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System Art. # 48 201 ▼	Upper section in ABS   With slotted cover 138 x 138 mm in stainless steel AISI 304, class K 3, screwed Art. # 48 950 ▼
Ø	58	78	83	110																									
B	245	134	134	148																									
H	120	109	108	92																									
Ø	58	78	83	110																									
H	100	110	110	110																									
Ø 58	Complete drain comprising a combination of the drain body and upper section																												
Lateral outlet Art. # 48 358	48 358.51	48 358.53	48 358.63	48 358.11																									
Vertical outlet Art. # 48 458	48 458.51	48 458.53	48 458.63	48 458.11																									
Ø 78																													
Lateral outlet Art. # 48 378	48 378.51	48 378.53	48 378.63	48 378.11																									
Vertical outlet Art. # 48 478	48 478.51	48 478.53	48 478.63	48 478.11																									
Ø 83																													
Lateral outlet Art. # 48 383	48 383.51	48 383.53	48 383.63	48 383.11																									
Vertical outlet Art. # 48 483	48 483.51	48 483.53	48 483.63	48 483.11																									
Ø 110																													
Lateral outlet Art. # 48 311	48 311.51	48 311.53	48 311.63	48 311.11																									
Vertical outlet Art. # 48 411	48 411.51	48 411.53	48 411.63	48 411.11																									

For other combinations and accessories see modular system page 136 - 139



EN 1253

Installation example *Ecoguss*



The *Ecoguss* drain ① collects, receives and conveys the wastewater in a section of the building. The lower waterproofing layer, which provides protection against water load from below, is connected to the drain body by means of the pressure sealing flange ②. The upper waterproofing layer serves as a seal against seeping water and is connected via the shallow bed flange ③. The only visible drain element is the cover ④, which can be tiled over and thus blends almost invisibly into the tile pattern in the room.

No-compromise fire protection

Floor drains are critical when it comes to spreading of fire in a building. *Ecoguss* drains combined with KESSEL fire protection elements meet all the requirements for fire resistance class R 120.

■ The determining factor is the Fire Resistance Class, not the building material class!

The *Ecoguss* drains with vertical outlets are designed specifically for use with the KESSEL **Fire-Kit** fire protection insert which offers the highest fire resistance class - R 120. As soon as fire enters the lower portion of the *Ecoguss* drain, the Fire-Kit expands and completely seals the opening to prevent fire and smoke from reaching the above floor.



■ **Quick-Fit** passage seal including fire protection ring for Fire Resistance Class R 120.

Additional security for fire protection is offered by the KESSEL **Quick-Fit** passage seal including fire protection ring. If floor drains are not poured into the concrete floor but inserted later into cored holes in the concrete slab, the space between the cored hole and the exterior of the drain body also needs to be secured against fire. In the case of a fire, the fire protection ring expands and completely seals the opening between the exterior of the drain body and the cored hole - preventing fire and smoke from reaching the above floor.

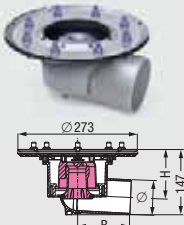
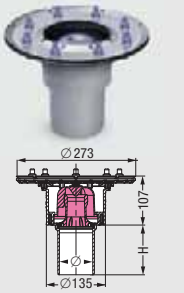

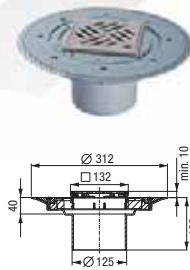




Professional advantages

- **Metallic composite material**
Metallic properties but still non corrosive and non-conductive (**no electrical grounding necessary!**)
- **Honeycomb structure** for perfect concrete bonding
- **High temperature-resistant materials**
Briefly up to 400°C, for processing with hot bitumen according to DIN 18195
- **With SML pipe connection**
Connection to SML pipe according to EN 877 in Ø 58, 78, 110 and Ø 83!
No transition pieces any more!
- **Sound insulation**
 - Sound-absorbent material
 - For increased sound insulation to DIN 4109 < 30 dB (A)
- **Variable upper section**
rotatable, tiltable and height adjustable
- **Chemical resistance**
Extremely high acid/alkali resistance for chemically-polluted wastewater.
- **Unmatched hygiene**
Self-cleaning effect thanks to permanently corrosion-free and smooth surface.
- **Lock & Lift**
Ecoguss drains can be combined with a wide variety of upper sections with integrated locking system *Lock & Lift*. This allows the cover to be twisted open easily for maintenance, removed and locked again safely. The cleaning time required is reduced by about 70 per cent compared with covers which are locked in the conventional manner using two screws. In addition, the system provides protection against vandalism and theft.

Project drains *Practicus* with pressure sealing flange

Matrix order system / Products

Drain body	Upper sections																							
<p>Practicus with pressure sealing flange with odour trap</p>  <table><tr><td>Ø</td><td>50</td><td>75</td><td>110</td></tr><tr><td>B</td><td>245</td><td>134</td><td>148</td></tr><tr><td>H</td><td>120</td><td>107</td><td>90</td></tr></table>  <table><tr><td>Ø</td><td>50</td><td>75</td><td>110</td></tr><tr><td>H</td><td>100</td><td>110</td><td>110</td></tr></table>	Ø	50	75	110	B	245	134	148	H	120	107	90	Ø	50	75	110	H	100	110	110	<p>Shallow bed upper section in ABS, with mesh fabric</p>  <p>With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed</p> <p>Art. # 48 963</p> <p>▼</p>	<p>Shallow bed upper section in ABS, with mesh fabric</p>  <p>With design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, class L 15, Lock & Lift System</p> <p>Art. # 48 904</p> <p>▼</p>	<p>Upper section in ABS</p>  <p>With design cover Kessel 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, Lock & Lift System</p> <p>Art. # 48 201</p> <p>▼</p>	<p>Upper section in ABS</p>  <p>With slotted cover 138 x 138 mm in stainless steel AISI 304, class K 3, screwed</p> <p>Art. # 48 950</p> <p>▼</p>
Ø	50	75	110																					
B	245	134	148																					
H	120	107	90																					
Ø	50	75	110																					
H	100	110	110																					
Ø 50	Complete drain comprising a combination of the drain body and upper section																							
Lateral outlet Art. # 45 159	45 159.51	45 159.53	45 159.63	45 159.11																				
Vertical outlet Art. # 45 259	45 259.51	45 259.53	45 259.63	45 259.11																				
Ø 75																								
Lateral outlet Art. # 45 179	45 179.51	45 179.53	45 179.63	45 179.11																				
Vertical outlet Art. # 45 279	45 279.51	45 279.53	45 279.63	45 279.11																				
Ø 110																								
Lateral outlet Art. # 45 119	45 119.51	45 119.53	45 119.63	45 119.11																				
Vertical outlet Art. # 45 219	45 219.51	45 219.53	45 219.63	45 219.11																				


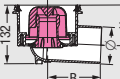

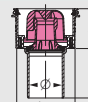

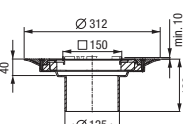

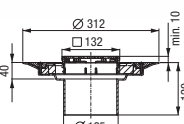




For other combinations and accessories see modular system page 136 - 139



EN 1253

Project drains *Practicus* with connection flange

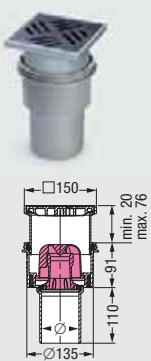


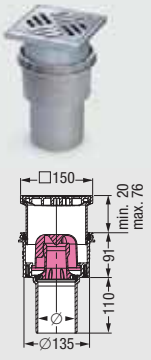

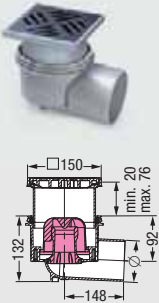


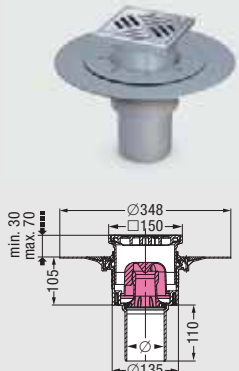


Matrix order system / Products

Drain body	Upper sections																							
Practicus with connection flange with odour trap	Shallow bed upper section in ABS, with mesh fabric	Shallow bed upper section in ABS, with mesh fabric	Upper section in ABS	Upper section in ABS																				
  <table><tr><td>Ø</td><td>50</td><td>75</td><td>110</td></tr><tr><td>B</td><td>245</td><td>134</td><td>148</td></tr><tr><td>H</td><td>120</td><td>109</td><td>92</td></tr></table>   <table><tr><td>Ø</td><td>50</td><td>75</td><td>110</td></tr><tr><td>H</td><td>100</td><td>110</td><td>110</td></tr></table>	Ø	50	75	110	B	245	134	148	H	120	109	92	Ø	50	75	110	H	100	110	110	  With slotted cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15, screwed Art. # 48 963	  With design cover <i>Kessel</i> 120 x 120 mm and rim in stainless steel AISI 304, class L 15, <i>Lock & Lift System</i> Art. # 48 904	  With design cover <i>Kessel</i> 120 x 120 mm, and rim in stainless steel AISI 304, class L 15, <i>Lock & Lift System</i> Art. # 48 201	  With slotted cover 138 x 138 mm in stainless steel AISI 304, class K 3, screwed Art. # 48 950
Ø	50	75	110																					
B	245	134	148																					
H	120	109	92																					
Ø	50	75	110																					
H	100	110	110																					
Ø 50	Complete drain comprising a combination of the drain body and upper section																							
Lateral outlet Art. # 45 150	45 150.51	45 150.53	45 150.63	45 150.11																				
Vertical outlet Art. # 45 250	45 250.51	45 250.53	45 250.63	45 250.11																				
Ø 75																								
Lateral outlet Art. # 45 170	45 170.51	45 170.53	45 170.63	45 170.11																				
Vertical outlet Art. # 45 270	45 270.51	45 270.53	45 270.63	45 270.11																				
Ø 110																								
Lateral outlet Art. # 45 110	45 110.51	45 110.53	45 110.63	45 110.11																				
Vertical outlet Art. # 45 210	45 210.51	45 210.53	45 210.63	45 210.11																				

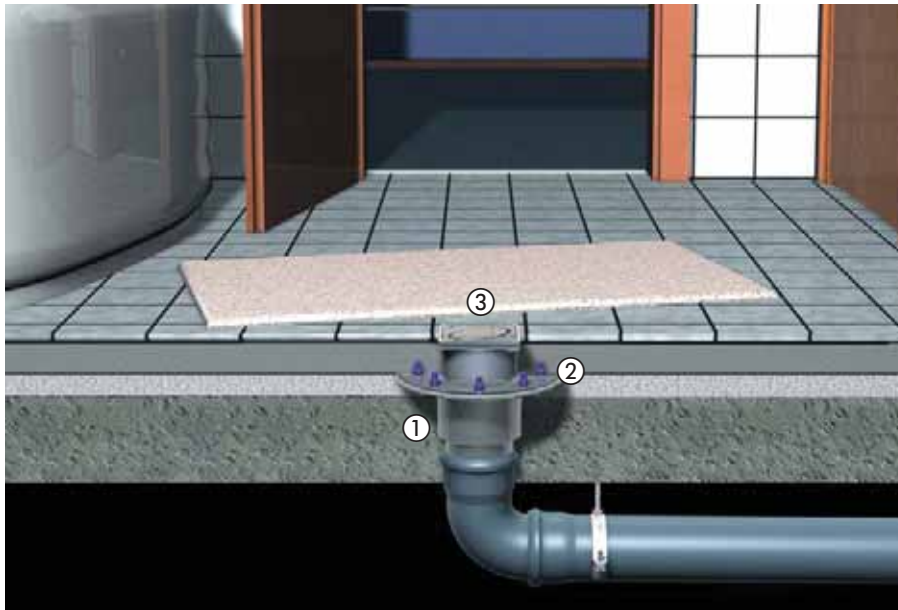
For other combinations and accessories see modular system page 136 - 139



EN 1253

Project drains <i>Practicus</i> Interior installation		Complete article / Products	
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Floor drain <i>Practicus</i> in PP, vertical outlet</p> <p>With removable odour trap. Sealing water height 50 mm. With lip seal and protective cover for use during construction.</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>  EN 1253</p>	Ø 110	45 210.40
 <p>1.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Floor drain <i>Practicus</i> in PP, vertical outlet</p> <p>With removable odour trap. Sealing water height 50 mm. With lip seal and protective cover for use during construction.</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in stainless steel AISI 304, screwed, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>  EN 1253</p>	Ø 110	45 210.11
 <p>1.8 l/sec flow rate Installation area 220 x 180 mm</p>	<p>Floor drain <i>Practicus</i> in PP, lateral outlet 2.5°</p> <p>With removable odour trap. Sealing water height 50 mm. With lip seal and protective cover for use during construction.</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>  EN 1253</p>	Ø 110	45 110.40
 <p>1.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Floor drain <i>Practicus</i> in PP, vertical outlet</p> <p>With removable odour trap. Sealing water height 50 mm. With lip seal and protective cover for use during construction.</p> <p>With glue flange and counter flange.</p> <p>With upper section made of polymer</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in stainless steel AISI 304, screwed, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>  EN 1253</p>	Ø 110	45 218.11

Installation example *Practicus*



The *Practicus* floor drain ① collects, receives and conveys the wastewater in a section of the building. The upper sealing level serves as a waterproofing layer against seeping water and is connected by means of a pressure sealing flange ② for example. There are numerous cover variants ③ available for the floor.

No-compromise fire protection

Floor drains are critical when it comes to spreading of fire in a building. *Practicus* drains combined with KESSEL fire protection elements meet all the requirements for fire resistance class R 120.

■ The determining factor is the Fire Resistance Class, not the building material class!

The *Practicus* drains with vertical outlets are designed specifically for use with the KESSEL **Fire-Kit** fire protection insert which offers the highest fire resistance class - R 120. As soon as fire enters the lower portion of the Ecoguss drain, the Fire-Kit expands and completely seals the opening to prevent fire and smoke from reaching the above floor.



■ **Quick-Fit** passage seal including fire protection ring for Fire Resistance Class R 120.

Additional security for fire protection is offered by the KESSEL **Quick-Fit** passage seal including fire protection ring. If floor drains are not poured into the concrete floor but inserted later into cored holes in the concrete slab, the space between the cored hole and the exterior of the drain body also needs to be secured against fire. In the case of a fire, the fire protection ring expands and completely seals the opening between the exterior of the drain body and the cored hole - preventing fire and smoke from reaching the above floor.



Professional advantages

- High flow rate of up to 1.8 l/s



- Honeycomb structure for perfect concrete bonding



- Ideal for connection to plastic pipes.



- Variable upper section rotatable, tiltable and height adjustable



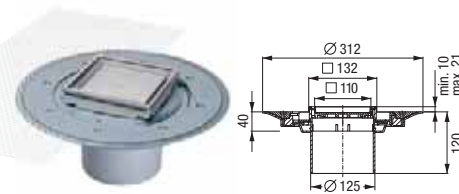
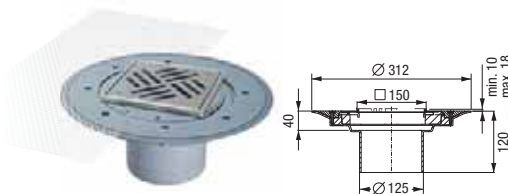
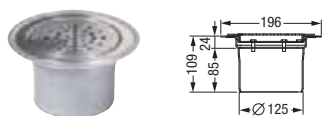
■ Lock & Lift

Practicus drains can be combined with a wide variety of upper sections with integrated locking system *Lock & Lift*. This allows the cover to be twisted opened easily for maintenance, removed and locked again safely. The cleaning time required is reduced by about 70 per cent compared with covers which are locked in the conventional manner using two screws. In addition, the system provides protection against vandalism and theft.

Upper section for PVC floorings

Variofix shallow bed upper sections

NEW



in stainless steel AISI 304

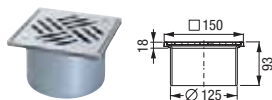
with cover Ø 133 mm
in stainless steel AISI 304,
class L 15, screwed.
For use with 1-4 mm PVC / vinyl flooring.
Art. # 48 192-V2A

in ABS, incl. mesh fabric

with slotted cover/rim □ 138 mm
in stainless steel AISI 304, class L 15,
screwed.
For tile thickness of 8-16 mm.
Art. # 48 963

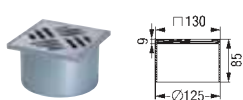
with recessed polymer cover
for on-site tiling □ 110 mm
and rim in stainless steel AISI 304,
class K 3, with locking system
Art. # 48 906

Upper sections



in ABS...

with slotted cover/rim
□ 138 mm
in stainless steel AISI 304
screwed, class L 15
Art. # 48 951



in ABS...

with slotted cover
□ 120 mm
in stainless steel AISI 304
screwed, class K 3
Art. # 48 165



in ABS...

with slotted cover □ 138 mm, class K 3,
in stainless steel
AISI 304, screwed
Art. # 48 950

in ABS,
black
Art. # 48 193

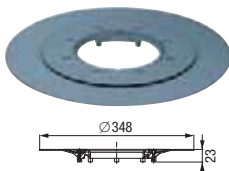


in ABS, tileable...

□ 110 mm, made of polymer, class K 3
with rim
in stainless steel
AISI 304
Art. # 48 211

with rim
in polymer
Art. # 48 210

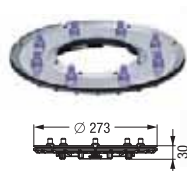
Accessories



Glue flange with counter flange

in ABS, Ø 348 mm
(also for compound seal)
Art.Nr. 48 410
can be combined with drain bodies
and extension sections

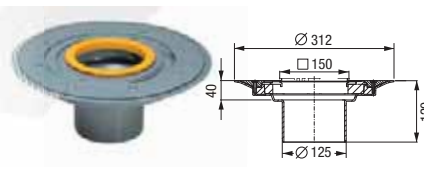
Mesh fabric
for Art. # 48 410
Art. # 046-056



Pressure sealing flange

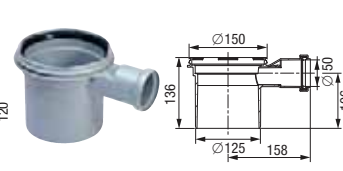
in stainless steel AISI 304, Ø 273 mm,
with seeping water opening
Art. # 48 402
can be combined with drain bodies
and extension sections

Elastomer waterproof membrane in NBR
for Art. # 48 402
Art. # 48 981



Intermediate section with glue flange

in ABS, for shallow bed gasket
incl. mesh fabric
Art. # 48 900

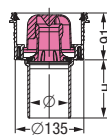
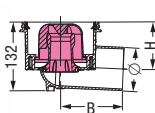


Extension section

in PP, with lip seal
without lateral inlet
Art. # 48 987
with lateral inlet Ø 50
Art. # 48 989

Drain bodies *Ecoguss* and *Practicus*

All drain bodies:
1.8 l/sec flow rate
Sealing water height 50 mm



Ecoguss

with removable odour trap

Lateral outlet

Ø	B	H	Article #
58	245	120	48 358
78	134	109	48 378
83	134	108	48 383
110	148	92	48 311

Vertical outlet

Ø	B	Article #
58	100	48 458
78	110	48 478
83	110	48 483
110	110	48 411

Variofix shallow bed upper sections with design cover



in ABS, incl. mesh fabric

design covers □ 120 mm and rim in stainless steel AISI 304, class K 3 / L 15. For tile thickness of 8-21 mm, with or without Lock & Lift System

		<i>Kessel</i> (Cl. L 15)	<i>Oval</i> (Cl. L 15)	<i>Spot</i> (Cl. K 3)	<i>Cross</i> (Cl. K 3)	<i>Festival</i> (Cl. K 3)	<i>Parade</i> (Cl. K 3)	<i>Slot</i> (Cl. K 3)	<i>Sticks</i> (Cl. K 3)
with <i>Lock & Lift</i> ...	Art. #	48 904	48 905	48 621	48 613	48 615	48 624	48 619	48 617
without <i>Lock & Lift</i> ...	Art. #	48 625	48 626	48 620	48 612	48 614	48 623	48 618	48 616

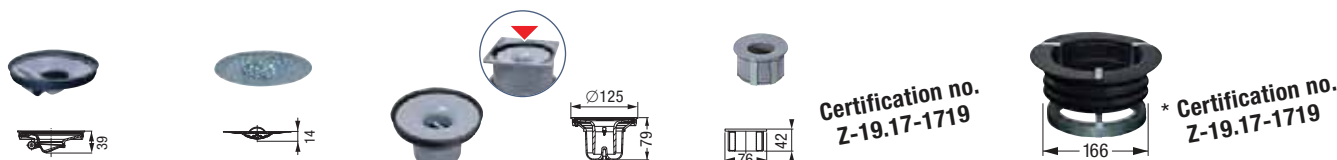
Upper section with design cover



in ABS

design covers □ 120 mm and rim in stainless steel AISI 304, class K 3 / L 15 with or without Lock & Lift System

		<i>Kessel</i> (Cl. L 15)	<i>Oval</i> (Cl. L 15)	<i>Spot</i> (Cl. K 3)	<i>Cross</i> (Cl. K 3)	<i>Festival</i> (Cl. K 3)	<i>Parade</i> (Cl. K 3)	<i>Slot</i> (Cl. K 3)	<i>Sticks</i> (Cl. K 3)
with <i>Lock & Lift</i> ...	Art. #	48 201	48 202	48 221	48 213	48 215	48 224	48 219	48 217
without <i>Lock & Lift</i> ...	Art. #	48 225	48 226	48 220	48 212	48 214	48 223	48 218	48 216



Multistop

odour, foam, rodent and insect stop
Art. # 48 500

Hair filter

made of polymer
Art. # 48 700

Odour trap

for all upper sections System 125, sealing water height 50 mm according to norm
Art. # 48 600

Fire-Kit Fire protection insert

Only for *Ecoguss* / *Practicus* drains with vertical outlet and odour trap
Ø 58/78/83 Art. # 48 099
Ø 50/75 Art. # 48 099
Ø 110 Art. # 48 100

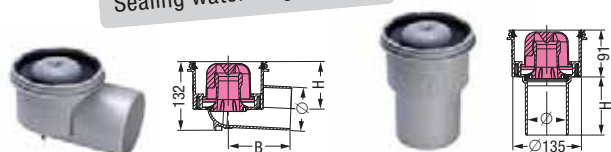
Quick-Fit the passage seal

for core drillings for drain bodies with vertical outlet
*with fire protection Art. # 48 990 (only in combination with *Fire-Kit* protection insert)
without fire protection Art. # 48 991

Sludge trap

Art. # 48 168 see page 147

All drain bodies:
1.8 l/sec flow rate
Sealing water height 50 mm



Practicus in PP

with removable odour trap

Lateral outlet			
Ø	B	H	Article #
50	245	120	45 150
75	134	109	45 170
110	148	92	45 110
Vertical outlet			
50	100		45 250
75	110		45 270
110	110		45 210



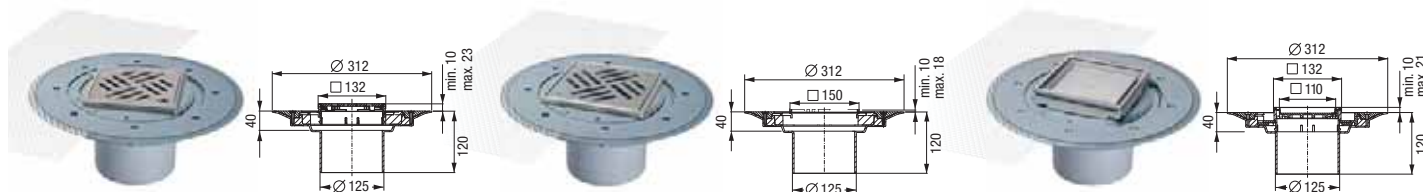
Insulating body

fits all *Ecoguss* / *Practicus* drain bodies with vertical outlet
Art. # 48 952

Floor / Bathroom drains *Ecoguss*, *Practicus*, "The Ultraflat" and "The Vertical" System 125

Variofix shallow bed upper sections

Covers made fully from AISI 316L stainless steel - for high level corrosion resistance requirements!



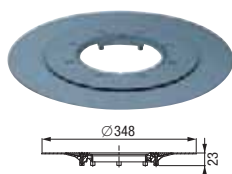
in ABS, incl. mesh fabric

with design covers □ 120 mm and rim in stainless steel AISI 316L, class L 15, with Lock & Lift System.
For tile thickness of 8-21 mm
Art. # 48 204

with slotted cover/rim □ 138 mm in stainless steel AISI 316L, class L 15, screwed.
For tile thickness of 8-16 mm
Art. # 48 206

with recessed polymer cover for on-site tiling □ 110 mm and rim in stainless steel AISI 316L, class K 3, with locking system
Art. # 48 208

Accessories

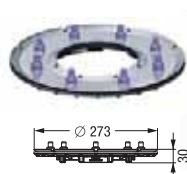


Glue flange with counter flange

in ABS, Ø 348 mm (also for compound seal)

Art.Nr. 48 410

can be combined with drain bodies and extension sections



Pressure sealing flange

in stainless steel AISI 304, Ø 273 mm, with seeping water opening

Art. # 48 402

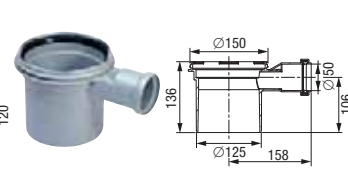
can be combined with drain bodies and extension sections



Intermediate section with glue flange

in ABS, for shallow bed gasket incl. mesh fabric

Art. # 48 900



Extension section

in PP, with lip seal without lateral inlet
Art. # 48 987

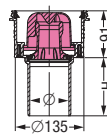
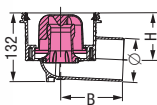
with lateral inlet Ø 50
Art. # 48 989

Mesh fabric
for Art. # 48 410
Art. # 046-056

Elastomer waterproof membrane in NBR
for Art. # 48 402
Art. # 48 981

Drain bodies *Ecoguss* and *Practicus*

All drain bodies:
1.8 l/sec flow rate
Sealing water height 50 mm



Ecoguss

with removable odour trap

Lateral outlet

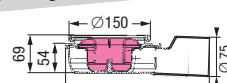
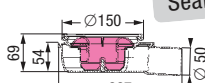
Ø	B	H	Article #
58	245	120	48 358
78	134	109	48 378
83	134	108	48 383
110	148	92	48 311

Vertical outlet

Ø	B	H	Article #
58	100		48 458
78	110		48 478
83	110		48 483
110	110		48 411

Drain bodies "The Ultraflat" and "The Vertical"

1.0 l/sec flow rate *)
Sealing water height 30 mm

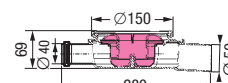


"The Ultraflat" in ABS

Lateral outlet Ø 50/75,
with removable odour trap
Lateral outlet Ø 50
Art. # 45 700

Lateral outlet Ø 75
Art. # 45 770

1.0 l/sec flow rate *)
Sealing water height 30 mm



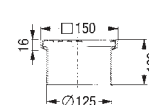
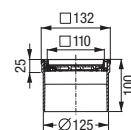
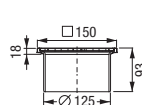
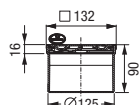
"The Ultraflat" in ABS

Lateral outlet Ø 50,
with removable odour trap
with lateral inlet Ø 40, lateral outlet Ø 50
Art. # 45 701

NEW Modular system with covers in stainless steel AISI 316L

Upper sections

Covers made fully from AISI 316L stainless steel - for high level corrosion resistance requirements!



in ABS...

with design covers □ 120 mm and rim in stainless steel AISI 316L, class L 15, with Lock & Lift System.
Art. # 48 203

in ABS...

with slotted cover/rim □ 138 mm in stainless steel AISI 316L, screwed, class L 15.
Art. # 48 205

in ABS, tileable...

□ 110 mm, made of polymer and rim in stainless steel AISI 316L, class K 3.
Art. # 48 207

in ABS...

with slotted cover □ 138 mm in stainless steel AISI 316L, screwed, class K 3.
Art. # 48 209



Multistop

odour, foam, rodent and insect stop
Art. # 48 500



Hair filter

made of polymer
Art. # 48 700



Odour trap

for all upper sections System 125, sealing water height 50 mm according to norm
Art. # 48 600



Fire-Kit Fire protection insert

Only for Ecoguss / Practicus drains with vertical outlet and odour trap
Certification no. Z-19.17-1719
Ø 58/78/83 Art. # 48 099
Ø 50/75 Art. # 48 099
Ø 110 Art. # 48 100



Quick-Fit the passage seal

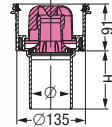
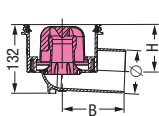
for core drillings for drain bodies with vertical outlet

*with fire protection Art. # 48 990
(only in combination with Fire-Kit protection insert)
without fire protection Art. # 48 991

Sludge trap

Art. # 48 168 see page 147

All drain bodies:
1.8 l/sec flow rate
Sealing water height 50 mm



Practicus in PP

with removable odour trap

Lateral outlet

Ø	B	H	Article #
50	245	120	45 150
75	134	109	45 170
110	148	92	45 110

Vertical outlet

Ø	B	H	Article #
50	100		45 250
75	110		45 270
110	110		45 210



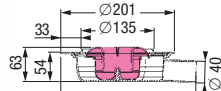
Insulating body

fits all Ecoguss / Practicus drain bodies with vertical outlet
Art. # 48 952

0.6 l/sec flow rate *)
Sealing water height 30 mm

1.0 l/sec flow rate *)
Sealing water height 30 mm

*) according to EN 1253 - 20 mm threshold

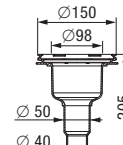


"The Ultraflat" in ABS

with sealing flange for shallow bed gasket,
with removable odour trap
Lateral outlet Ø 40,
Art. # 45 740

Lateral outlet Ø 50,
Art. # 45 750

1.2 l/sec flow rate *)
Sealing water height 50 mm



"The Vertical" in ABS

Vertical outlet Ø 50/40
with removable odour trap
fits all upper sections System 125
Art. # 45 254



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

The bathroom drain collection System 125



The bathroom drains ***“The Vertical”*** and ***“The Ultraflat”*** are ideal for renovating existing buildings and have numerous advantages thanks to the range of waterproofing layer types for all floor structures.

New: drains with shallow bed upper sections and upper sections with covers made of AISI 316L stainless steel for aggressive media.



Bathroom drain ***“The Vertical”***
 compact drain body with vertical outlet
 makes it ideal for renovations

INSTALLATION of *“The Vertical”* bathroom drain

CONNECTION

Compact drain with flexible connection option Ø 40 or Ø 50.

SEALING WATER HEIGHT

Standard version with odour trap 50 mm sealing water height.

CAN BE SHORTENED

Upper sections can be shortened up to a minimum installation height.

Multistop

Ideal odour trap for drains that dry out frequently.

Can be retrofitted to installed drains (Fig. 1).

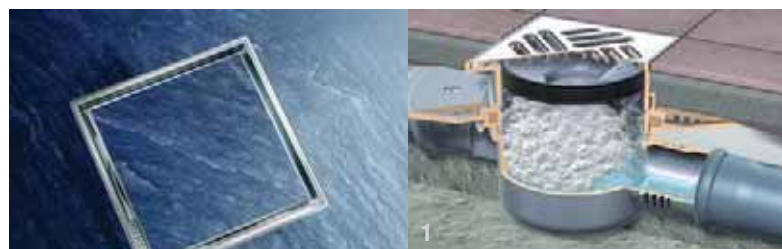
INSTALLATION of *“The Ultraflat”* bathroom drain

EXTREMELY LOW HEIGHT

Overall installation height with flange including cover 69 mm,
 up to top edge of flange only 54 mm.

CAN BE SHORTENED

Upper sections can be shortened up to a minimum installation height.





Bathroom drains **"The Ultraflat"**

minimum installation height, ideal for renovation work and new constructions

OPTIMISED DESIGN AND FUNCTION

Lock & Lift

Simultaneous locking and removal mechanism (Fig. 2).

Multistop

Ideal odour trap for drains that dry out frequently. Can be retrofitted to installed drains (Fig. 1).

VARIABLE

Variable upper sections can be twisted, tilted, height-adjusted. In the case of shallow bed upper sections, the covers can also be moved for adaptation to the tile pattern (Fig. 3).

MODULAR DESIGN

Individual drain composition thanks to the modular system for all standard-compliant floor structures and types of waterproofing layer.

SOUND PROTECTION

Measurements carried out by the Fraunhofer Institute in Stuttgart:

"The Ultraflat" bathroom drain

- ≥ 12 dB(A) according to DIN 4109
- ≥ 10 dB(A) according to VDI 4100 SST III

DESIGN IN A NUTSHELL

DESIGN COVERS FOR BATHROOM DRAINS

Eight different covers made of stainless steel and one tilable version. Each with or without Lock & Lift system.



Kessel

Oval

Spot

Cross

Festival



Parade



Slot



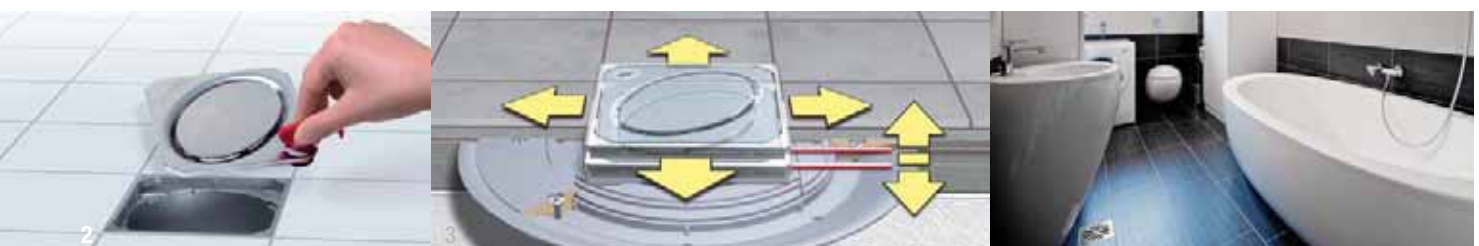
Sticks



Invisible

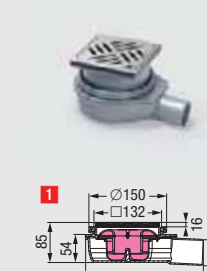
AWARD-WINNING

The award-winning design covers combine aesthetics and technology at the highest level.



"The Ultraflat"

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.0 l/sec flow rate Installation area 350 x 350 mm</p>	<p>Bathroom drain "The Ultraflat" in ABS With lateral outlet, and one lateral inlet Ø 40, with removable odour trap, glue flange and mesh fabric for shallow bed seal</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 120 x 120 mm and rim in stainless steel AISI 304, screwed, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Upper sections can be shortened up to a minimum installation height of 92 mm.</p>	Ø 50	45 700.91
 <p>Flow rate 1 Ø 40: 0.6 l/sec 2 Ø 50: 1 l/sec Installation area 300 x 300 mm</p>	<p>Bathroom drain "The Ultraflat" in ABS for shallow bed gasket with lowest installation height sound-absorbing, Ø ... lateral outlet 2.5°</p> <p>with removable odour trap, flange and mesh fabric for shallow bed seal</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 120 x 120 mm in stainless steel AISI 304, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Upper sections can be shortened up to a minimum installation height of 69 mm.</p>	1 Ø 40 2 Ø 50	45 740.20 45 750.20
 <p>Flow rate 1 Ø 50: 1.0 l/sec 2 Ø 50: 0.9 l/sec Installation area 250 x 300 mm</p>	<p>Bathroom drain "The Ultraflat" in ABS sound-absorbing, Ø 50 lateral outlet 2.5°</p> <p>With upper section in ABS</p> <p>1 with odour trap With lip seal.</p> <p>with design cover Kessel 120 x 120 mm and rim in stainless steel AISI 304, with Lock & Lift System, class L 15 (able to withstand loads up to max. 1.5 tons).</p> <p>Additional design covers see page 133</p> <p>2 with Multistop: Odour, foam, rodent and insect stop</p> <p>with cover in stainless steel AISI 304 120 x 120 mm Class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Upper sections can be shortened up to a minimum installation height of 85 mm.</p>	Ø 50 Ø 50	45 700.63 45 700.71

Installation example *"The Ultraflat"*



Thanks to its minimum overall installation height, *"The Ultraflat"* bathroom drain ① is particularly suitable for flush-to-floor showers, which are one of the latest trends. Body and upper section together are only 69 millimetres high and are thus also suitable for retrofitting. Connection to the shallow bed waterproofing layer is by means of a mesh fabric on the drain flange ②. The wastewater collected is routed to the drain pipe via the Ø 40 or 50 outlets ③. The drain looks impressive too: *"The Ultraflat"* can be combined with any of the System 125 upper sections - tiltable, slotted cover ④ or one of the award-winning design covers.

Professional advantages

- **Minimum installation height 69 mm** - ideal for renovation work in existing buildings
- Also suitable for flush-to-floor showers thanks to the **high draining** capacity of up to 1 litre per second.
- With **removable odour trap** - full access for maintenance and cleaning
- With slotted cover made of AISI 304 stainless steel - timeless design combined with durable material.
- **Flexible modular system** with a large number of design covers (see page 146 - 147).
- **Multistop** accessory - ideal odour, foam and rodent protection for drains that dry out frequently.
- **Variable upper section** rotatable, tiltable and height adjustable
- Select, plan and visualize your own personalized KESSEL Design shower drainage system using the KESSEL Shower Drain Configurator at




www.kessel-design.com



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system



"The Vertical"

Products

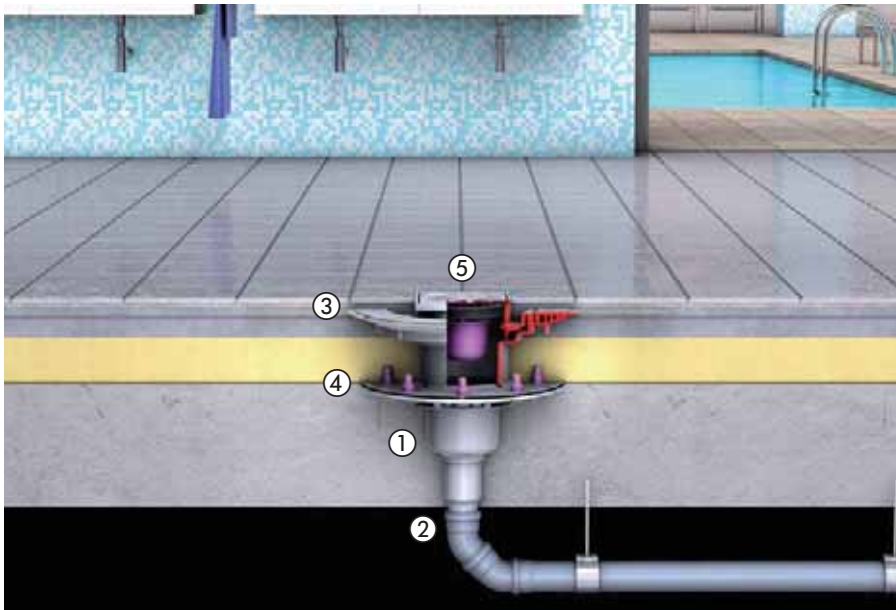
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.2 l/sec flow rate Installation area 160 x 160 mm</p>	<p>Bathroom drain "The Vertical" in ABS</p> <p>With vertical outlet Ø 40/50, with removable odour trap</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 120 x 120 mm in stainless steel AISI 304, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Upper sections can be shortened up to a minimum installation height.</p> <p>   EN 1253 </p>	Ø 40/50	45 254.20

Giro

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.3 l/sec flow rate Installation area 350 x 250 mm</p>	<p>Bathroom drain Giro in PP</p> <p>sound-absorbing, Ø 50, flexible outlet, with rotatable lateral inlet Ø 50, with removable odour trap, fixed lip seal</p> <p>With upper section in ABS</p> <p><input type="checkbox"/> with slotted cover 120 x 120 mm class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Upper sections can be shortened up to a minimum installation height.</p> <p>  EN 1253 </p>	Ø 50	45 101.20

Installation example *"The Vertical"*



Thanks to its compact body, "The Vertical" ① bathroom drain is particularly suitable for renovation work. It has a vertical outlet Ø 40 mm ② which can be cut off and widened to Ø 50 mm. The upper sealing level serves as a waterproofing layer against seeping water and is connected by means of an adhesive flange ③ for example. The lower waterproofing layer against water load is connected by means of a pressure sealing flange ④. The cover is a slotted stainless steel cover ⑤ - but "The Vertical" drain can also be combined with any other upper section from the System 125 range.

Installation example *Giro*



The *Giro* bathroom drain ① has an inlet ② at the side which can be turned through 360 degrees and can thus be used flexibly for the planning of draining objects. It also has a flexible outlet ③ with sound decoupling which has a diameter of 50 mm.

Professional advantages

- **Compact drain body** - ideal for renovation work.
- Also suitable for flush-to-floor showers thanks to the **high draining** capacity of up to 1 litre per second.
- With **removable odour** trap - full access for maintenance and cleaning
- With slotted cover made of AISI 304 stainless steel - timeless design combined with durable material.
- **Multistop** accessory - ideal odour, foam and rodent protection for drains that dry out frequently.
- **Flexible modular system** with a large number of design covers (see page 146 - 147).



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

Professional advantages

- **Variable upper section** rotatable, tiltable and height adjustable
- **Flexible outlet** with sound absorption
- **Sound-absorbing**
- With **removable odour** trap - full access for maintenance and cleaning
- **Sealing system safe to install** The fixed lip seal reliably prevents the upper section from slipping
- Select, plan and visualize your own personalized KESSEL Design shower drainage system using the KESSEL Shower Drain Configurator at



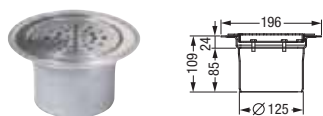
www.kessel-design.com

Bathroom drains "The Ultraflat" and "The Vertical" System 125

Upper section for PVC floorings

Variofix shallow bed upper sections

NEW



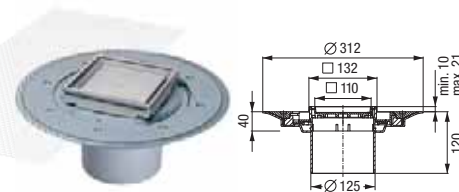
in stainless steel AISI 304

with cover Ø 133 mm
in stainless steel AISI 304,
class L 15, screwed.
For use with 1-4 mm PVC / vinyl flooring.
Art. # 48 192-V2A



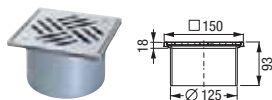
in ABS, incl. mesh fabric

with slotted cover/rim □ 138 mm
in stainless steel AISI 304, class L 15,
screwed.
For tile thickness of 8-16 mm.
Art. # 48 963



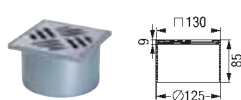
with recessed polymer cover
for on-site tiling □ 110 mm
and rim in stainless steel AISI 304,
class K 3, with locking system
Art. # 48 906

Upper sections



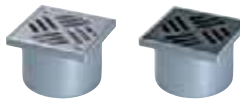
in ABS...

with slotted cover/rim
□ 138 mm
in stainless steel AISI 304
screwed, class L 15
Art. # 48 951



in ABS...

with slotted cover
□ 120 mm
in stainless steel AISI 304
screwed, class K 3
Art. # 48 165



in ABS...

with slotted cover □ 138 mm, class K 3,
in stainless steel
AISI 304, screwed
Art. # 48 950

**in ABS,
black**

Art. # 48 193



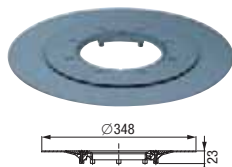
in ABS, tileable...

□ 110 mm, made of polymer, class K 3
with rim
in stainless steel
AISI 304
Art. # 48 211

**with rim
in polymer**

Art. # 48 210

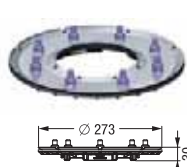
Accessories



Glue flange with counter flange

in ABS, Ø 348 mm (also for compound seal)
Art.Nr. 48 410
can be combined with drain bodies and extension sections

Mesh fabric for Art. # 48 410
Art. # 046-056

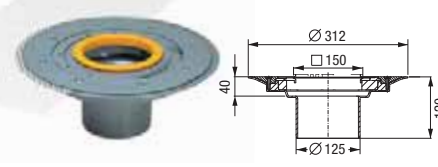


Pressure sealing flange

in stainless steel AISI 304, Ø 273 mm,
with seeping water opening
Art. # 48 402

can be combined with drain bodies and extension sections

Elastomer waterproof membrane in NBR for Art. # 48 402
Art. # 48 981

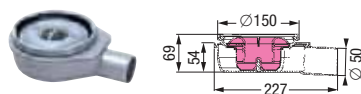


Intermediate section with glue flange

in ABS, for shallow bed gasket
incl. mesh fabric
Art. # 48 900

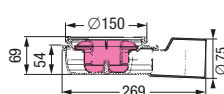
Drain bodies

1.0 l/sec flow rate *)
Sealing water height 30 mm



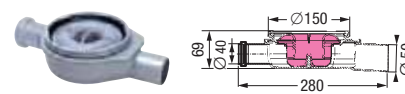
"The Ultraflat" in ABS

with removable odour trap
Lateral outlet Ø 50
Art. # 45 700



Lateral outlet Ø 75
Art. # 45 770

1.0 l/sec flow rate *)
Sealing water height 30 mm



"The Ultraflat" in ABS

with removable odour trap
with lateral inlet Ø 40,
lateral outlet Ø 50
Art. # 45 701

Variofix shallow bed upper sections with design cover



in ABS, incl. mesh fabric

design covers □ 120 mm and rim in stainless steel AISI 304, class K 3 / L 15. For tile thickness of 8-21 mm, with or without *Lock & Lift* System

		<i>Kessel</i> (Cl. L 15)	<i>Oval</i> (Cl. L 15)	<i>Spot</i> (Cl. K 3)	<i>Cross</i> (Cl. K 3)	<i>Festival</i> (Cl. K 3)	<i>Parade</i> (Cl. K 3)	<i>Slot</i> (Cl. K 3)	<i>Sticks</i> (Cl. K 3)
with <i>Lock & Lift</i> ...	Art. #	48 904	48 905	48 621	48 613	48 615	48 624	48 619	48 617
without <i>Lock & Lift</i> ...	Art. #	48 625	48 626	48 620	48 612	48 614	48 623	48 618	48 616

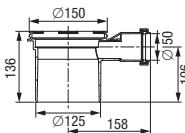
Upper section with design cover



in ABS

design covers □ 120 mm and rim in stainless steel AISI 304, class K 3 / L 15 with or without *Lock & Lift* System

		<i>Kessel</i> (Cl. L 15)	<i>Oval</i> (Cl. L 15)	<i>Spot</i> (Cl. K 3)	<i>Cross</i> (Cl. K 3)	<i>Festival</i> (Cl. K 3)	<i>Parade</i> (Cl. K 3)	<i>Slot</i> (Cl. K 3)	<i>Sticks</i> (Cl. K 3)
with <i>Lock & Lift</i> ...	Art. #	48 201	48 202	48 221	48 213	48 215	48 224	48 219	48 217
without <i>Lock & Lift</i> ...	Art. #	48 225	48 226	48 220	48 212	48 214	48 223	48 218	48 216



Extension section

in PP, with lip seal
without lateral inlet
Art. # 48 987

with lateral inlet Ø 50
Art. # 48 989

Multistop

odour, foam, rodent
and insect stop
Art. # 48 500

Hair filter

made of polymer
Art. # 48 700

Sludge trap

made of polymer
Art. # 48 168

Odour trap

for all upper sections System 125,
sealing water height 50 mm
according to norm
Art. # 48 600

0.6 l/sec flow rate *)
Sealing water height 30 mm

1.0 l/sec flow rate *)
Sealing water height 30 mm

*) according to EN 1253 - 20 mm threshold



"The Ultraflat" in ABS

with sealing flange for shallow bed gasket,
with removable odour trap
Lateral outlet Ø 40,
Art. # 45 740

Lateral outlet Ø 50,
Art. # 45 750

1.2 l/sec flow rate *)
Sealing water height 50 mm



"The Vertical" in ABS

Vertical outlet Ø 50/40
with removable odour trap
fits all upper sections System 125
Art. # 45 254



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The bathroom drain collection System 100



"The Superflat" and **Classic** bathroom drains are designed for bathrooms, showers, spa and wellness oases for private, commercial and public use installed in new, converted or renovated buildings.



... with shallow bed gasket

Bathroom drains **"The Superflat"**
for low installation heights - 95 mm

INSTALLATION of "The Superflat" bathroom drain

LOW OVERALL INSTALLATION HEIGHT

Minimum overall installation height 90 mm including cover.
Depending on requirements, upper sections can be shortened up to a minimum installation height.

INLETS / OUTLET

Also with one or three inlets Ø 40.
Flexible outlet adaptation (max. 5°) (Fig. 2).

SEALING WATER HEIGHT

Standard version with odour trap 30 mm sealing water height.

INSTALLATION of the *Classic* bathroom drain

COMPACT

Compact drain body with lateral or vertical outlet.

SEALING WATER HEIGHT

Standard version with odour trap 50 mm sealing water height.

CAN BE SHORTENED

Upper sections can be shortened up to a minimum installation height.





Bathroom drains **"The Superflat"**
with additional inlet

Bathroom drains **Classic**
compact and high performance

OPTIMISED IN DESIGN AND FUNCTION

MODULAR DESIGN

Individual drain composition thanks to the modular system for all standard-compliant floor structures and types of waterproofing layer.

VARIABLE

Variable upper sections can be twisted, tilted and height-adjusted. In the case of shallow bed upper sections, the covers can also be moved for adaptation to the tile pattern (Fig. 4).

TILEABLE

Cover can be tiled over as an invisible drain with a practical locking system (Fig. 3).

SAFE INSTALLATION

The fixed lip seal reliably prevents the upper section from slipping.

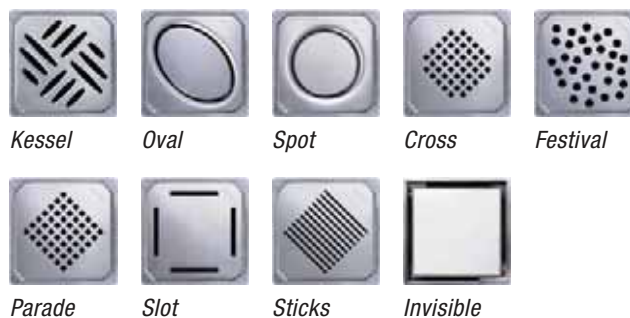
SAFETY

Ideal odour trap for drains that dry out frequently.
Can be retrofitted to installed drains.

DESIGN IN A NUTSHELL

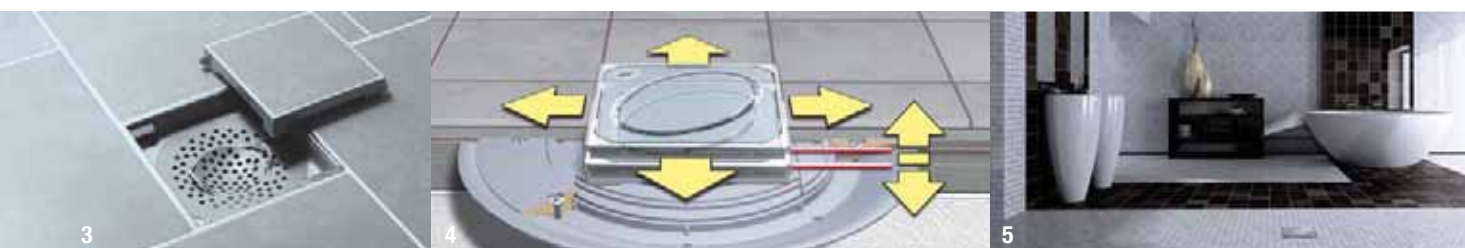
DESIGN COVERS FOR BATHROOM DRAINS

Eight different covers made of stainless steel and one tilable version. Each with or without *Lock & Lift* system (Fig. 1).



AWARD-WINNING

The award-winning design covers combine aesthetics and technology at the highest level.



"The Superflat"

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>0.8 l/sec flow rate Installation area 260 x 180 mm</p>	<p>Bathroom drain "The Superflat" in PP for shallow bed gasket with lowest installation height sound-absorbing, Ø 50 flexible lateral outlet 2.5°, with lateral inlet Ø 40 and fixed lip seal. With removable odour trap, glue flange with mesh fabric for shallow bed sealing No lateral adjustment of the slotted cover With upper section in ABS <input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 50	42 701.91
 <p>Illustration shows design cover <i>Oval</i> 0.8 l/sec flow rate Installation area 260 x 180 mm</p>	<p>Bathroom drain "The Superflat" in PP sound-absorbing, Ø 50 flexible lateral outlet 2.5°, with lateral inlet Ø 40 and fixed lip seal. With Variofix shallow bed upper section in ABS, with removable odour trap, with mesh fabric for shallow bed sealing <input type="checkbox"/> with design cover Oval 120 x 120 mm and rim in stainless steel AISI 304, for tile thicknesses of 8-21 mm, class L 15 (able to withstand loads up to max. 1.5 to), with <i>Lock & Lift</i> System. <input type="checkbox"/> with standard slotted cover 95 x 95 mm in stainless steel AISI 304, for tile thicknesses of 6-14 mm, class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 50 Ø 50	42 701.54 42 701.50
 <p>0.8 l/sec flow rate Installation area 260 x 180 mm</p>	<p>Bathroom drain "The Superflat" in PP sound-absorbing, Ø 50 flexible lateral outlet 2.5°, with lateral inlet Ø 40 and fixed lip seal. With removable odour trap, with glue flange and counter flange With upper section in ABS <input type="checkbox"/> with recessed polymer drain cover for on-site tiling 110 x 110 mm and rim in stainless steel AISI 304, class K 3 (able to withstand loads up to max. 300 kg), with locking system, for tile thickness up to 10 mm.</p>	Ø 50	42 701.95
 <p>0.8 l/sec flow rate Installation area 260 x 180 mm</p>	<p>Bathroom drain "The Superflat" in PP sound-absorbing, Ø 50 flexible lateral outlet 2.5°, with lateral inlet Ø 40 and fixed lip seal. With removable odour trap With upper section in ABS <input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, min. installation height 90 mm, class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 50	42 701.20

Installation example *"The Superflat"*



With its installation height of only 95 mm *"The Superflat"* ① bathroom drain is ideally suitable for both new buildings and renovation work. It has a flexible horizontal outlet Ø 50 mm with sound decoupling ② and a lateral inlet Ø 40 mm ③ for the connection of other draining objects. There is an adhesive flange ④ available as an option for humidity sealing. The cover is a slotted stainless steel cover ⑤ - but *"The Superflat"* drain can also be combined with any other upper section from the System 100 range.

Professional advantages

- **Variable upper section**
rotatable, tiltable and height adjustable
- **Minimum installation height**
- **Flexible outlet** with sound absorption
- With **removable odour trap** - full access for maintenance and cleaning
- Versions with single or triple inlets.
- **Flexible modular system** with a large number of design covers (see page 154 - 155).
- **Sealing system safe to install**
The fixed lip seal reliably prevents the upper section from slipping
- Select, plan and visualize your own personalized KESSEL Design shower drainage system using the KESSEL Shower Drain Configurator at



www.kessel-design.com



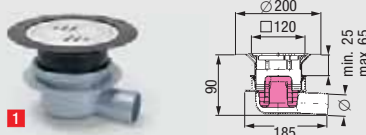
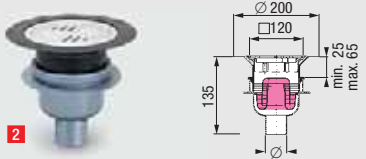



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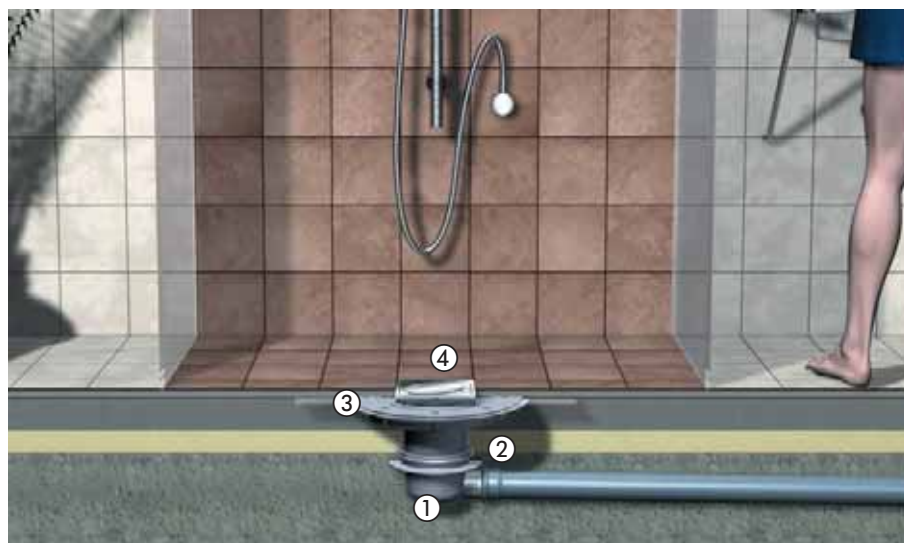
Classic			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Illustration shows design cover <i>Oval</i></p> <p>0.8 l/sec flow rate Installation area 220 x 180 mm</p>	<p>Bathroom drain <i>Classic</i> in ABS with removable odour trap, sealing water height 50 mm, with fixed lip seal, With <i>Variofix</i> shallow bed upper section in ABS, with mesh fabric for shallow bed sealing</p> <p>Lateral outlet</p> <p><input type="checkbox"/> with design cover <i>Oval</i> 120 x 120 mm and rim in stainless steel AISI 304, for tile thicknesses 8-21 mm, with <i>Lock & Lift</i> System, class L 15</p> <p><input type="checkbox"/> with standard slotted cover 95 x 95 mm in stainless steel AISI 304, for tile thicknesses 6-14 mm, class K 3</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, for tile thicknesses 8-16 mm, class L 15</p> <p>Vertical outlet</p> <p><input type="checkbox"/> with design cover <i>Oval</i> 120 x 120 mm and rim in stainless steel AISI 304, for tile thicknesses 8-21 mm, with <i>Lock & Lift</i> System, class L 15</p> <p><input type="checkbox"/> with standard slotted cover 95 x 95 mm in stainless steel AISI 304, for tile thicknesses 6-14 mm, class K 3</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, for tile thicknesses 8-16 mm, class L 15</p> <p> EN 1253</p>	<p>Ø 50 Ø 75</p> <p>Ø 50 Ø 75</p> <p>Ø 50 Ø 75</p> <p>Ø 50 Ø 75</p>	<p>40 150.54 40 170.54</p> <p>40 150.50 40 170.50</p> <p>40 150.51 40 170.51</p> <p>40 250.54 40 270.54</p> <p>40 250.50 40 270.50</p> <p>40 250.51 40 270.51</p>
 <p>0.8 l/sec flow rate Installation area 260 x 180 mm</p>	<p>Bathroom drain <i>Classic</i> in ABS with removable odour trap, sealing water height 50 mm, with fixed lip seal, With <i>Variofix</i> shallow bed upper section in ABS with glue flange and counter flange, with mesh fabric, with two sealing strips</p> <p>Lateral outlet</p> <p><input type="checkbox"/> with slotted cover 95 x 95 mm in stainless steel AISI 304, for tile thickness 6-14 mm, class K 3</p> <p>Vertical outlet</p> <p><input type="checkbox"/> with slotted cover 95 x 95 mm in stainless steel AISI 304, for tile thickness 6-14 mm, class K 3</p> <p> EN 1253</p>	<p>Ø 50 Ø 75</p> <p>Ø 50 Ø 75</p>	<p>40 159.50 40 179.50</p> <p>40 259.50 40 279.50</p>
 <p>0.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Bathroom drain <i>Classic</i> in ABS with removable odour trap, sealing water height 50 mm, with fixed lip seal, with upper section in ABS with glue flange and counter flange</p> <p>Lateral outlet</p> <p><input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, class K 3</p> <p>Vertical outlet</p> <p><input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, class K 3</p> <p> EN 1253</p>	<p>Ø 50 Ø 75</p> <p>Ø 50 Ø 75</p>	<p>40 150.90 40 170.90</p> <p>40 250.90 40 270.90</p>

Classic

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>Illustration with tileable cover</p> <p>0.8 l/sec flow rate Installation area 220 x 180 mm</p>	<p>Bathroom drain <i>Classic</i> in ABS with removable odour trap, sealing water height 50 mm, with fixed lip seal, with connection flange</p> <p>With upper section in ABS</p> <p>Lateral outlet</p> <p><input type="checkbox"/> with recessed polymer drain cover for on-site tiling 110 x 110 mm, class K 3</p> <p><input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, class K 3</p> <p>Vertical outlet</p> <p><input type="checkbox"/> with recessed polymer drain cover for on-site tiling 110 x 110 mm, class K 3</p> <p><input type="checkbox"/> with slotted cover 100 x 100 mm in stainless steel AISI 304, class K 3</p> <p> EN 1253</p>	<p>Ø 50</p> <p>Ø 75</p> <p>Ø 50</p> <p>Ø 75</p> <p>Ø 50</p> <p>Ø 75</p> <p>Ø 50</p> <p>Ø 75</p>	<p>40 150.66</p> <p>40 170.66</p> <p>40 150.20</p> <p>40 170.20</p> <p>40 250.66</p> <p>40 270.66</p> <p>40 250.20</p> <p>40 270.20</p>
 <p>1</p> <p>0.8 l/sec flow rate Installation area 220 x 180 mm</p>  <p>2</p> <p>0.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Bathroom drain <i>Classic</i> in ABS lateral outlet 2.5°/vertical outlet, with removable odour trap, sealing water height 50 mm, with fixed lip seal</p> <p>1 Lateral outlet</p> <p>2 Vertical outlet</p> <p>Upper section with sealing flange for use with 1 - 4 mm vinyl / synthetic flooring</p> <p><input type="checkbox"/> with slotted cover made of polymer, grey, class K 3 (able to withstand loads up to max. 300 kg).</p> <p> EN 1253</p>	<p>1 Ø 50</p> <p>Ø 75</p> <p>2 Ø 50</p> <p>Ø 75</p>	<p>40 150.30</p> <p>40 170.30</p> <p>40 250.30</p> <p>40 270.30</p>

Installation example *Classic*



The *Classic* bathroom drain ① is a compact bathroom drain which is available in many versions. It is available both with a vertical and a horizontal outlet ② in the sizes Ø 50 and Ø 75 mm. There is an adhesive flange ③ available as an option for humidity sealing. The cover is a stainless steel cover in an oval design ④ - but *Classic* bathroom drain can also be combined with any other upper section from the System 100 range.

Professional advantages

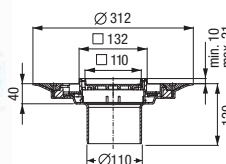
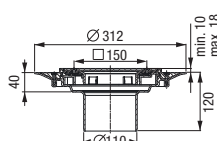
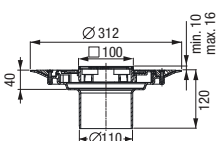
- **Variable upper section**
rotatable, tiltable and height adjustable
- **Sealing system safe to install**
The fixed lip seal reliably prevents the upper section from slipping
- With **removable odour trap** - full access for maintenance and cleaning
- **Flexible modular system** with a large number of design covers.



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Bathroom drains *Classic* and *"The Superflat"* System 100

Variofix shallow bed upper sections



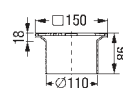
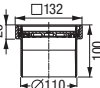
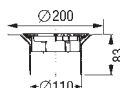
in ABS, incl. mesh fabric

with standard slotted cover □ 95 mm
in stainless steel AISI 304, class K 3.
For tile thickness of 6-14 mm
Art. # 47 901

with slotted cover/rim □ 138 mm
in stainless steel AISI 304,
class L 15, screwed.
For tile thickness of 8-16 mm
Art. # 47 902

with recessed polymer cover
for on-site tiling □ 110 mm
and rim in stainless steel AISI 304,
class K 3, with locking system
Art. # 47 906

Upper sections



in PP...

with sealing flange for use with
1 - 4 mm vinyl / synthetic flooring,
slotted cover made of polymer,
Ø 120 mm, class K 3
Art. # 27 192

in ABS...

with slotted cover □ 100 mm
in stainless steel AISI 304,
class K 3
Art. # 27 165

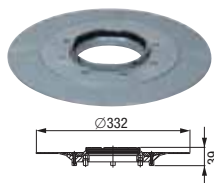
in ABS, tileable...

□ 110 mm, made of polymer, class K 3
with rim
in stainless steel
AISI 304
Art. # 27 211

in ABS...

with slotted cover □ 138 mm
and rim
in stainless steel AISI 304,
class L 15, non-slip
Art. # 27 176

Accessories



Glue flange

with counter flange
(also for compound seal)
Art. # 43 401



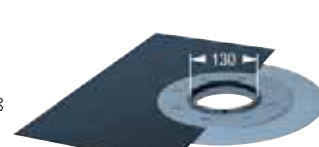
Extension section

in PP, with pressure sealing flange
in stainless steel AISI 304,
flange width 63 mm
Art. # 27 198



Extension section

in ABS, with glue flange and
counter flange
Art. # 27 199



With glue flange and
waterproof membrane

pre-mounted in PVC
1200 x 1200 mm Art. # 43 401.91
1800 x 2000 mm Art. # 43 401.93

Elastomer waterproof membrane □ 500 mm

in PVC Art. # 43 710
in EPDM Art. # 43 730



Mesh fabric

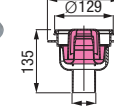
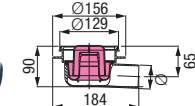
for Art. # 43 401
Art. # 219-153A

The waterproof membrane in PVC and EPDM are
not suitable for connections to asphalt sheeting.

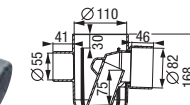
Waterproof membrane in PVC
without punched-out hole
1800 x 2000 mm Art. # 43 711
Glue Art. # 43 719

Drain bodies

0.8 l/sec flow rate *)
Sealing water height 50 mm



1.8 l/sec flow rate *)



Bathroom drain *Classic* in ABS

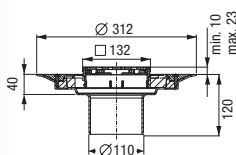
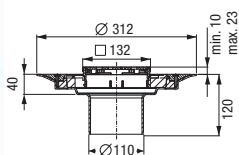
with removable odour trap		
Ø	Lateral outlet	Vertical outlet
50	Art. # 40 150	Art. # 40 250
75	Art. # 40 170	Art. # 40 270

without removable odour trap		
Ø	Lateral outlet	Vertical outlet
50	Art. # 40 151	Art. # 40 251
75	Art. # 40 171	Art. # 40 271

Floordrain ME in ABS

Three lateral inlets Ø 55,
one lateral outlet Ø 82,
with removable odour trap
Glue connection
according to BS 5255
Art. # 37 3001

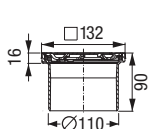
Modular system with covers in stainless steel AISI 304



in ABS, incl. mesh fabric

with design cover **Kessel** □ 120 mm
and rim in stainless steel AISI 304, class L 15.
For tile thickness of 8-21 mm, *Lock & Lift* System
Art. # **47 904**

with design cover **Oval** □ 120 mm
and rim in stainless steel AISI 304, class L 15.
For tile thickness of 8-21 mm, *Lock & Lift* System
Art. # **47 905**

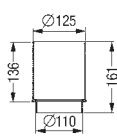


in ABS

design covers □ 120 mm and rim in stainless steel AISI 304, class K 3 / L 15 with or without *Lock & Lift* System.



		Kessel (Cl. L 15)	Oval (Cl. L 15)	Spot (Cl. K 3)	Cross (Cl. K 3)	Festival (Cl. K 3)	Parade (Cl. K 3)	Slot (Cl. K 3)	Sticks (Cl. K 3)
with <i>Lock & Lift</i> ...	Art. #	27 201	27 202	27 221	27 213	27 215	27 224	27 219	27 217
without <i>Lock & Lift</i> ...	Art. #	27 225	27 226	27 220	27 212	27 214	27 223	27 218	27 216



Extension section

in ABS, with lip seal
Art. # **27 146**

Multistop

odour, foam, rodent
and insect stop
Art. # **43 500**

Transition section

with sealing ring Ø 50
Ø 50/75 Art. # **27 126**
Ø 50/40 Art. # **27 118**

Conversion kit, "DIN push-fit connection"

for article numbers: 37 3001
Consist of
3 inlet adapter Ø 50 mm,
1 outlet adapter Ø 75 mm
and 1 push-fit connection
for upper section Ø 110,
EN 1451-1
Art. # **37 3008**

Conversion kit, "DIN glue connection"

for article number: 37 3001
Consist of
3 inlet adapter Ø 50 mm,
and 1 outlet adapter Ø 75,
EN 1451-1
Art. # **37 3007**

Sludge trap

made of polymer
Art. # **27 168**



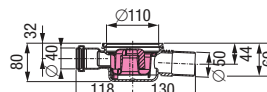
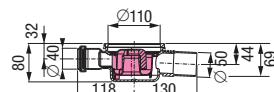
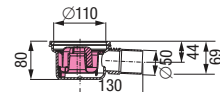
Hair filter

made of polymer, Ø 108 mm
Art. # **43 700**



0.8 l/sec flow rate *)
Sealing water height 30 mm

*) according to EN 1253 - 20 mm threshold



Bathroom drain "The Superflat" in PP

Lateral outlet Ø 50, with removable odour trap

Without lateral inlet
Art. # **42 700**

One lateral inlet Ø 40
Art. # **42 701**

Three lateral inlets Ø 40
Art. # **42 703**



Shower channels

Shower channels

Linearis Comfort

Page **160 – 165**

Variety of different installation options - for an individual bathroom design

Shower channels

Linearis Compact

Page **162 – 163**

Minimum installation height - ideal for flush-to-floor showers and bathroom renovation!

Shower channels

Linearis Super 60

Page **166 – 172**

With tileable access cover - full access for maintenance and cleaning!

Shower channels

Linearis

Extremely narrow channel - elegant appearance!

System 125

Page **166 – 169**

System 100

Page **170 – 172**



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Linearis Comfort - designer shower channels



Ready-to-install complete channel with fix mounted drain body with lateral outlet or as channel for combination with System 125 bodies

Shower channels *Linearis Comfort*

OPTIMISED IN DESIGN AND FUNCTION

COMPLETE SHOWER CHANNELS

Ready-to-install complete shower channels with fix mounted drain body with lateral outlet, minimum overall installation height 93 mm. Flange installation height only 86 mm.

LENGTHS

Five channel lengths: 750, 850, 950, 1050 and 1150 mm.

FLEXIBILITY

Vertically adjustable frame can be adjusted from 7-22 mm to meet on-site tile thicknesses.

INDIVIDUAL

Attractive design covers also available with LED backlighting technology (Fig. 1). Stainless steel cover can be turned over and tiled to offer an "invisible" look. (Fig. 2).

SOUND PROTECTION

Measurements carried out by the Fraunhofer Institute in Stuttgart: shower channel *Linearis Comfort*

- ≥ 17 dB(A) according to DIN 4109
- ≥ 13 dB(A) according to VDI 4100 SST III

FIRE AND SMOKE PROTECTION

Fire-Kit fire and smoke protection insert and *Quick-Fit* passage seal including fire protection for drains with vertical outlet are optionally available.



Linearis shower channels for flush-to-floor installation are leading the modern bathroom design trends. Multiple channel inserts are available including stainless steel, wood-optic for a calm and warm ambience and LED induction technology backlighting





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Ideal for renovation

Shower channels **Linearis Compact**

Linearis Compact - compact shower channels

OPTIMISED IN DESIGN AND FUNCTION

COMPLETE SHOWER CHANNELS

Ready-to-install complete shower channels with welded drain, minimum overall installation height 80 mm for bathroom renovation work. Flange installation height only 65 mm. Installation aid as accessory

LENGTHS

Nine channel lengths: 300, 450, 550, 650, 750, 850, 950, 1050 and 1150 mm.

TILEABLE

Stainless steel cover can be turned over and tiled to offer an "invisible" look.

CLEANING

Easy cleaning and maintenance thanks to simple removal of the channel rim using the removal mechanism (Fig. 3).



SOUND PROTECTION


Measurements carried out by the Fraunhofer Institute in Stuttgart: shower channel *Linearis Compact*

- ≥ 14 dB(A) according to DIN 4109
- ≥ 10 dB(A) according to VDI 4100 SST III



With its minimalist impression, the **Linearis Compact** shower channel fits in elegantly with a purist bathroom design.

Linearis Comfort			Products
Illustration and dimensioned drawing	Article description	Channel length	Article #
 <p>Installation supports and mesh fabric included</p>	Shower channel <i>Linearis Comfort</i> With drain body in ABS, Ø 50, lateral outlet With removable odour trap, sealing water height 22 mm <input type="checkbox"/> cover and rim in stainless steel AISI 304 (Channel cover can be reversed and tiled on site), class K 3, with seeping water opening	750 mm 850 mm 950 mm 1050 mm 1150 mm	45 600.83 45 600.84 45 600.85 45 600.86 45 600.87
	1.0 l/sec flow rate without threshold, 1.1 l/sec flow rate with 10 mm threshold		
	Shower channel <i>Linearis Comfort Light</i> With drain body in ABS, Ø 50, lateral outlet With removable odour trap, sealing water height 22 mm <input type="checkbox"/> cover with maintenance-free induction technology and "white" LED lights (other colours available upon request), 15 m power cable, handles loads up to 100 kg, with seeping water opening	750 mm 850 mm 950 mm 1150 mm	45 600.83 IC 45 600.84 IC 45 600.85 IC 45 600.87 IC
	1.0 l/sec flow rate without threshold, 1.1 l/sec flow rate with 10 mm threshold		
	 <p>Installation supports and mesh fabric included</p>		

Linearis Comfort			Accessories
Illustration and dimensioned drawing	Article description	Channel length	Article #
 <p>Suitable for all channel lengths from 750 to 1150 mm</p>	Installation aid Replaces the screed underlining Including mounting adhesive <input type="checkbox"/> Linearis Comfort Suitable for all lengths, can be shortened on-site	-	48 640
	Collar seal As a seal below the ceramic surfaces made of modified polyethylene membrane with fleece on both sides with printed cutting template suitable for all channel lengths Including mounting adhesive	-	48 638

Installation example *Linearis Comfort*






The *Linearis Comfort* shower channel effortlessly combines engineering and design to offer new and creative design concepts for your bathroom. The reversible channel cover ① can be displayed in the classic stainless steel look or reversed to show the invisible tiled look, also available are custom channel inserts such as wood optic and illuminated versions. The channels are ready-to-install with their welded on drain body ②, including an odour trap and Ø 50 outlet. *Linearis Comfort* can be installed on the room or wall side of the shower. The flexible installation supports ③ are height-adjustable on the feet can be pivoted away as required for wall-side installation.

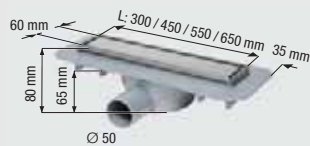
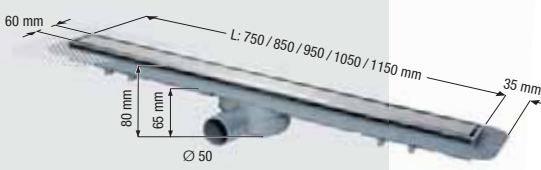

Professional advantages



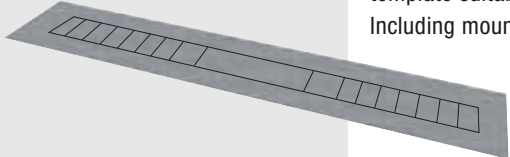
- **Stainless steel cover is reversable and tileable**
- **Vertically adjustable frame**
Stainless steel channel and rim can be adjusted from 7-22 mm to meet on site tile/granite/marble thicknesses.
- **Installation on room or wall side of shower**
Feet can be pivoted away as required for wall-side installation.
- **Exemplary hygiene** - smooth, easy-clean surface, self-cleaning effect
- **Channel length:** 750 mm, 850 mm, 950 mm, 1050 mm, 1150 mm.
- **Channel locking mechanism as standard**
- **Flexible modular system** with a large number of design covers.
- **Hair filter and Multistop** - odour, foam, rodent and insect stop (**optional**)
- **1.1 l/sec flow rate with 10 mm threshold.**
- Select, plan and visualize your own personalized KESSEL Design shower drainage system using the KESSEL Shower Drain Configurator at



www.kessel-design.com

<i>Linearis Comfort</i>			Accessories
Illustration and dimensioned drawing	Article description	Channel length	Article #
 Illustration shows ①	Odour trap ① sealing water height 22 mm ② sealing water height 50 mm only for shower channel <i>Linearis Compact</i> and <i>Linearis Comfort</i>	-	48 603
		-	48 602
	Multistop odour, foam, rodent and insect stop	-	48 400
	Hair filter	-	48 800

Linearis Compact			Products
Illustration and dimensioned drawing	Article description	Channel length	Article #
<p>Installation depth only 80 mm</p>  <p>Channel length from 300 to 650 mm</p>	<p>Shower channel <i>Linearis Compact</i> With drain body in ABS, Ø 50, lateral outlet With removable odour trap, sealing water height 22 mm <input type="checkbox"/> cover and rim in stainless steel AISI 304 (Channel cover can be reversed and tiled on site), class K 3, seeping water openings prepared</p>	300 mm	45 600.59
		450 mm	45 600.60
 <p>Channel length from 750 to 1150 mm</p>		550 mm	45 600.61
		650 mm	45 600.62
	<p>Installation supports and mesh fabric included</p>	750 mm	45 600.63
		850 mm	45 600.64
	<p>0.5 l/sec flow rate without threshold, 0.6 l/sec flow rate with 10 mm threshold</p>	950 mm	45 600.65
		1050 mm	45 600.66
		1150 mm	45 600.67

Linearis Compact			Accessories
Illustration and dimensioned drawing	Article description	Channel length	Article #
 <p>Example: Installation aid can be shortened on-site Suitable for all channel lengths from 300 to 1150 mm</p> 	<p>Installation aid Replaces the screed underlining Including mounting adhesive <input type="checkbox"/> Linearis Compact Suitable for all lengths, can be shortened on-site</p>	-	48 639
	<p>Collar seal As a seal below the ceramic surfaces made of modified polyethylene membrane with fleece on both sides with printed cutting template suitable for all channel lengths Including mounting adhesive</p>	-	48 638

Installation example *Linearis Compact*



Shower channels in a classic, timeless design. Minimalistic impression fits elegantly in a purist bathroom design. The finely finished channel surface in stainless steel ① can be reversed to offer a recessed side where the bathroom tile or natural stone surface can be installed. The channels are ready-to-install with their welded on drain body ②, including an odour trap and Ø 50 outlet. *Linearis Compact* can be installed on the room or wall side of the shower. The flexible installation supports ③ can be shortened for wall-side installation.

Professional advantages

- **Stainless steel cover is reversible and tileable**
- **Installation in the room or on the wall**
The length of the feet can be shortened on the left or right if mounted to the wall.
- **Hygienic design** - single piece body and channel cover
- **Channel length:** 300 mm, 450 mm, 550 mm, 650 mm, 750 mm, 850 mm, 950 mm, 1050 mm, 1150 mm.
- **Flow rate** with counter slope **up to 0.6 l/sec with 10 mm threshold. Flow rate increased to 0.9 l/sec** with use of **Multistop** odour trap.
- **Cover and rim** made of stainless steel.
- **Multistop (optional)** - odour, foam, rodent and insect stop
- **Hair filter (optional)**



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Linearis Compact Accessories

Illustration and dimensioned drawing	Article description	Channel length	Article #
 Illustration shows ①	Odour trap ① sealing water height 22 mm ② sealing water height 50 mm only for shower channel <i>Linearis Compact</i> and <i>Linearis Comfort</i>	- -	48 603 48 602
	Multistop odour, foam, rodent and insect stop	-	48 400
	Hair filter	-	48 800

Shower channel *Linearis Comfort* System 125

Shower channel upper section *Linearis Comfort*

1.0 l/sec flow rate
1.1 l/sec with 10 mm threshold

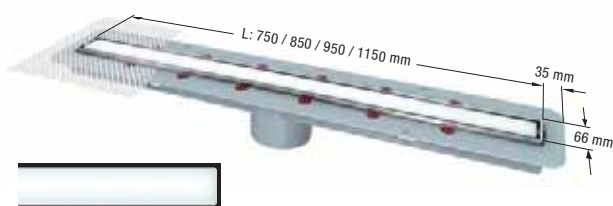


Linearis Comfort in ABS

With removable odour trap, sealing water height 50 mm

- ☐ **cover and rim in stainless steel AISI 304**
(Channel cover can be reversed and tiled on site),
class K 3, with seeping water opening,
installation supports and mesh fabric

Length	Art. #
750 mm	48 928 S
850 mm	48 929 S
950 mm	48 930 S
1050 mm	48 931 S
1150 mm	48 932 S



Linearis Comfort Light in ABS

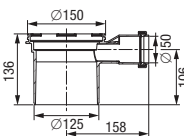
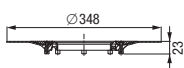
With removable odour trap, sealing water height 50 mm

- ☐ **cover with maintenance-free induction technology and "white" LED lights** (other colours available upon request), 15 m power cable, handles loads up to 100 kg, with seeping water opening, installation supports and mesh fabric

Length	Art. #
750 mm	48 928 IC
850 mm	48 929 IC
950 mm	48 930 IC
1150 mm	48 932 IC

Minimum installation depth of upper section (without drain body) 46 mm

Accessories



Glue flange

with **counter flange**, Ø 348 mm
(also for compound seal)
Art. # **48 410**

Pressure sealing flange

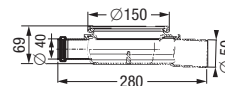
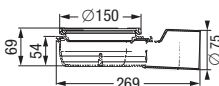
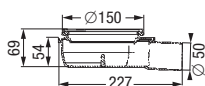
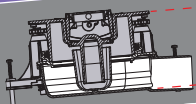
in stainless steel AISI 304, Ø 273 mm,
with seeping water opening
Art. # **48 402**

Extension section

in PP, with lip seal
without lateral inlet Art. # **48 987**
with lateral inlet Art. # **48 989**

Drain bodies

Total installation
height including
upper section



"The Ultraflat" in ABS

with removable odour trap

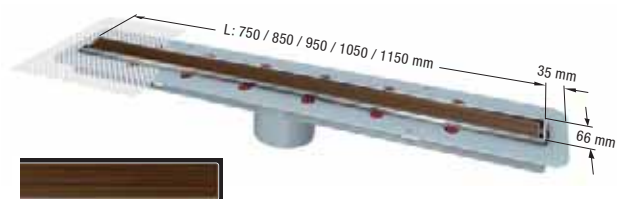
Lateral outlet Ø 50
Art. # **45 700**

Lateral outlet Ø 75
Art. # **45 770**

"The Ultraflat" in ABS

with removable odour trap

with lateral inlet Ø 40,
lateral outlet Ø 50
Art. # **45 701**

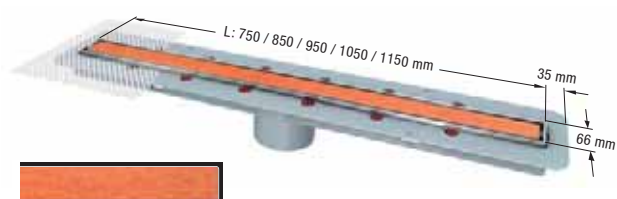


Linearis Comfort "Wengé" in ABS

With removable odour trap, sealing water height 50 mm

- ☐ **Cover in wood look,** handles loads up to 100 kg, with seeping water opening, installation supports and mesh fabric

Length	Art. #
750 mm	on request
850 mm	on request
950 mm	on request
1050 mm	on request
1150 mm	on request



Linearis Comfort "Burlwood" in ABS

With removable odour trap, sealing water height 50 mm

- ☐ **Cover in wood look,** handles loads up to 100 kg, with seeping water opening, installation supports and mesh fabric

750 mm	on request
850 mm	on request
950 mm	on request
1050 mm	on request
1150 mm	on request

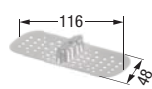
Minimum installation depth of upper section (without drain body) 46 mm

* Approval pending on the basis of test certificate no. 210006415 MPA Erwitte.



Multistop

odour, foam, rodent and insect stop
Art. # 48 400



Hair filter

made of polymer
Art. # 48 800



Fire-Kit Fire protection insert*

Only for *Ecoguss* / *Practicus* drains with vertical outlet and odour trap

- Ø 58/78/83 Art. # 48 099
- Ø 50/75 Art. # 48 099
- Ø 110 Art. # 48 100

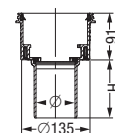
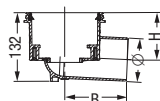


Quick-Fit the passage seal

for core drillings for drain bodies with vertical outlet

- without fire protection** Art. # 48 991
- *with fire protection** Art. # 48 990 (only in combination with *Fire-Kit* protection insert)

The *Linearis Comfort* shower channel inserts already include an odour trap. For this reason, the odour trap must be removed from all drain bodies during installation.



Ecoguss

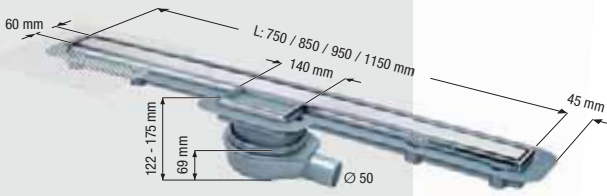
with removable odour trap

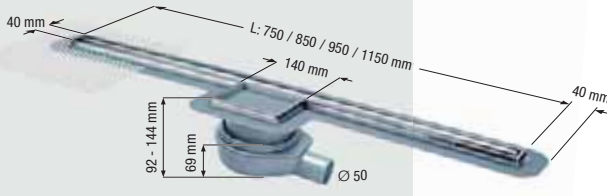
Lateral outlet			Vertical outlet		
Ø	B	H	Article #	H	Article #
58	245	120	48 358	100	48 458
78	134	109	48 378	110	48 478
83	134	108	48 383	110	48 483
110	148	92	48 311	110	48 411

Practicus in PP

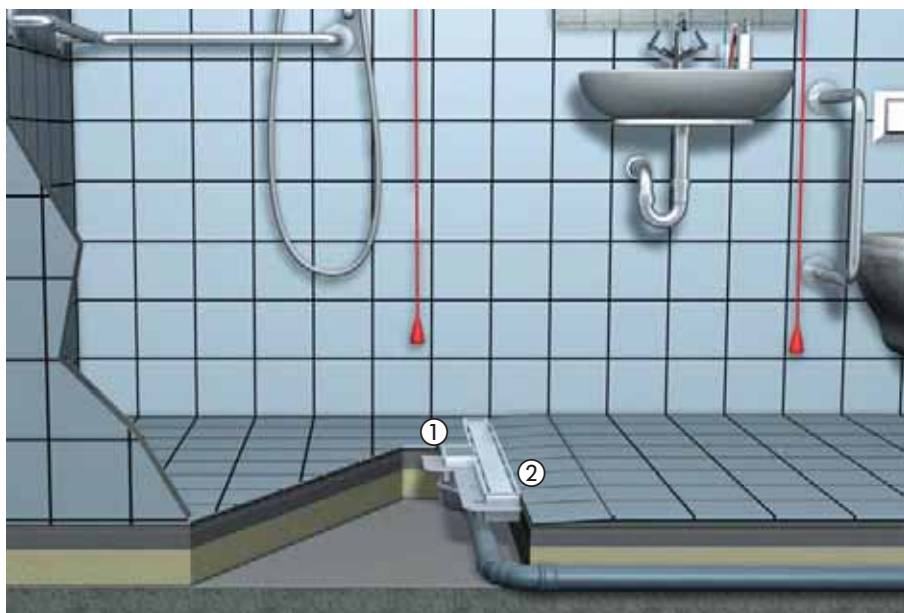
with removable odour trap

Lateral outlet			Vertical outlet		
Ø	B	H	Article #	H	Article #
50	245	120	45 150	100	45 250
75	134	109	45 170	110	45 270
110	148	92	45 110	110	45 210

Linearis Super60			Products
Illustration and dimensioned drawing	Article description	Channel length	Article #
	Shower channel <i>Linearis Super60</i> in ABS with tileable access cover With bathroom drain body “The Ultraflat” in ABS, Ø 50, lateral outlet With removable odour trap, sealing water height 30 mm <input type="checkbox"/> cover and rim in stainless steel AISI 304 (Channel cover can be reversed and tiled on site), class K 3, with seeping water opening	750 mm 850 mm 950 mm 1150 mm	45 700.83 45 700.84 45 700.85 45 700.87
	Installation supports and mesh fabric included		
	1.1 l/sec flow rate without threshold, 1.2 l/sec flow rate with 10 mm threshold		

Linearis			Products
Illustration and dimensioned drawing	Article description	Channel length	Article #
	Shower channel <i>Linearis</i> in ABS with tileable access cover With bathroom drain body “The Ultraflat” in ABS, Ø 50, lateral outlet With removable odour trap, sealing water height 30 mm <input type="checkbox"/> cover and rim in stainless steel AISI 304 class K 3, with seeping water opening	750 mm 850 mm 950 mm 1150 mm	45 700.73 45 700.74 45 700.75 45 700.77
	Installation supports and mesh fabric included		
	0.4 l/sec flow rate with 10 mm threshold		

Installation example *Linearis Super60*



The *Linearis Super60* shower channels offers a very high flow rate of 72 liters per minute making it perfect for use in higher flow applications. The *Linearis Super60* also allows full service access to the odor trap and drain body via the removable channel and access cover ① for cleaning and maintenance purposes. The attractive stainless steel channel ② can also be reversed revealing a recessed area which can be tiled to also offer the “invisible” tiled look. One channel with your choice of two styles - stainless or invisible.

Installation example *Linearis*



The *Linearis* shower channel features a narrow, elegant stainless steel channel ① which can be discreetly integrated into the bathroom design. With a flow capacity of 24 liters per minute the *Linearis* shower channel is ideal for mounting against the wall at the back of the shower. For cleaning and maintenance purposes the stainless steel channel and tileable access cover ② can be removed allowing full access to the odor trap and drain body.

Professional advantages

- **Wide channel with high flow rate** from 1.1 - 1.2 l/sec
- **Easy cleaning**
Access cover for easy cleaning and maintenance
- **Channel cover can be reversed and tiled on site**
- **Channel length:** 750 mm, 850 mm, 950 mm, 1150 mm
- **Also suitable for installation on door side**
- **Flexible modular system** with a large number of components.



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Professional advantages

- **Flow rate 0.4 l/sec**
- **Extremely narrow and elegant channel**
- **Easy cleaning**
Access cover for easy cleaning and maintenance
- **Particularly suitable** for installation on the wall side
- **Channel length:** 750 mm, 850 mm, 950 mm, 1150 mm
- **Flexible modular system** with a large number of components.



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

Shower channel *Linearis Super60* and *Linearis* System 125

Shower channel upper section *Linearis Super60*

1.1 l/sec flow rate
1.2 l/sec with 10 mm threshold

Linearis Super60 in ABS
with tileable access cover

☐ cover and rim in stainless steel AISI 304
(Channel cover can be reversed and tiled on site),
class K 3, with seeping water opening,
installation supports and mesh fabric

Length	Art. #
750 mm	48 908
850 mm	48 909
950 mm	48 910
1150 mm	48 912

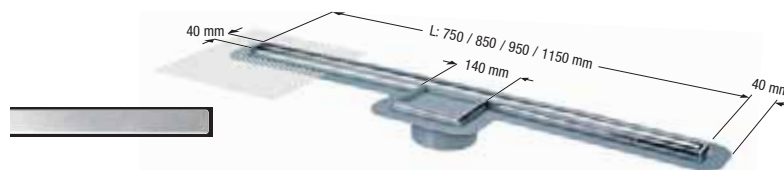
Linearis Super60 Light in ABS
with tileable access cover

☐ cover with maintenance-free induction
technology and "white" LED lights (other colours
available upon request), 15 m power cable,
handles loads up to 100 kg,
with seeping water opening, installation supports
and mesh fabric

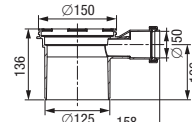
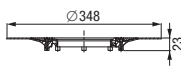
750 mm	48 908 IC
850 mm	48 909 IC
950 mm	48 910 IC
1150 mm	48 912 IC

Minimum installation depth of upper section (without drain body) 46 mm

Shower channel upper section *Linearis*



Accessories



Glue flange

with counter flange, Ø 348 mm
(also for compound seal)
Art. # **48 410**

Pressure sealing flange

in stainless steel AISI 304, Ø 273 mm,
with seeping water opening
Art. # **48 402**

Extension section

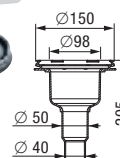
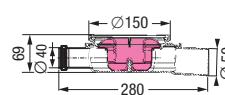
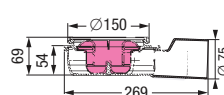
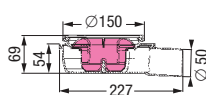
in PP, with lip seal
without lateral inlet Ø 50 Art. # **48 987**
with lateral inlet Ø 50 Art. # **48 989**

Drain bodies

1.0 l/sec flow rate
Sealing water height 30 mm

1.0 l/sec flow rate
Sealing water height 30 mm

1.2 l/sec flow rate
Sealing water height 50 mm



"The Ultraflat" in ABS

with removable odour trap
Lateral outlet Ø 50
Art. # **45 700**

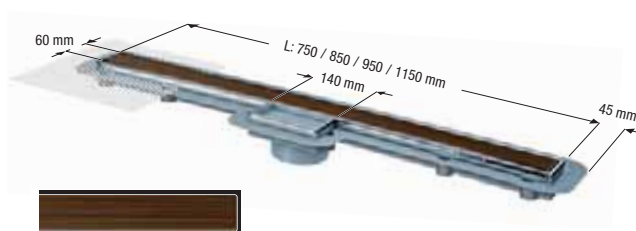
Lateral outlet Ø 75
Art. # **45 770**

"The Ultraflat" in ABS

with removable odour trap
with lateral inlet Ø 40,
lateral outlet Ø 50
Art. # **45 701**

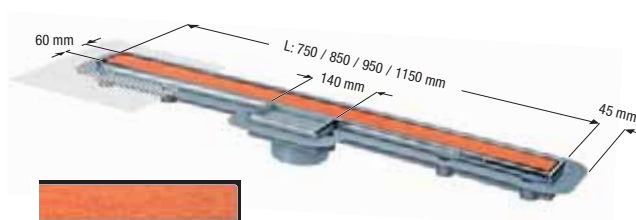
"The Vertical" in ABS

Vertical outlet Ø 50/40
with removable odour trap
fits all upper sections System 125
Art. # **45 254**



Linearis Super60 "Wengé" in ABS with tileable access cover
☐ **Cover in wood look**, handles loads up to 100 kg, with seeping water opening, installation supports and mesh fabric

Length	Art. #
750 mm	48 908 IW
850 mm	48 909 IW
950 mm	48 910 IW
1150 mm	48 912 IW



Linearis Super60 "Burlwood" in ABS with tileable access cover
☐ **Cover in wood look**, handles loads up to 100 kg, with seeping water opening, installation supports and mesh fabric

750 mm	48 908 IH
850 mm	48 909 IH
950 mm	48 910 IH
1150 mm	48 912 IH

Minimum installation depth of upper section (without drain body) 46 mm

Linearis in ABS with tileable access cover
☐ **cover and rim in stainless steel AISI 304**, class K 3, with seeping water opening, installation supports and mesh fabric
 0.4 l/sec flow rate with 10 mm threshold

Length	Art. #
750 mm	46 908
850 mm	46 909
950 mm	46 910
1150 mm	46 912



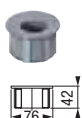
Multistop

odour, foam, rodent and insect stop
 Art. # **48 500**



Hair filter

made of polymer
 Art. # **48 700**



Fire-Kit Fire protection insert

Only for *Ecoguss* / *Practicus* drains with vertical outlet and odour trap
 Ø 58/78/83 Art. # **48 099**
 Ø 50/75 Art. # **48 099**
 Ø 110 Art. # **48 100**

Certification no. Z-19.17-1719

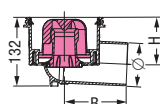


Quick-Fit the passage seal

for core drillings for drain bodies *Ecoguss* and *Practicus*, with vertical outlet
without fire protection Art. # **48 991**
***with fire protection** Art. # **48 990**
 (only in combination with *Fire-Kit* protection insert)

* Certification no. Z-19.17-1719

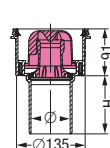
All drain bodies:
 1.8 l/sec flow rate
 Sealing water height 50 mm



Ecoguss

with removable odour trap



Lateral outlet				Vertical outlet	
Ø	B	H	Article #	H	Article #
58	245	120	48 358	100	48 458
78	134	109	48 378	110	48 478
83	134	108	48 383	110	48 483
110	148	92	48 311	110	48 411



Practicus in PP

with removable odour trap

Lateral outlet				Vertical outlet	
Ø	B	H	Article #	H	Article #
50	245	120	45 150	100	45 250
75	134	109	45 170	110	45 270
110	148	92	45 110	110	45 210

Linearis			Products
Illustration and dimensioned drawing	Article description	Channel length	Article #
 <p>Installation supports and mesh fabric included</p>	Shower channel <i>Linearis</i> in ABS with tileable access cover With bathroom drain body <i>Classic</i> in ABS, Ø 50, lateral outlet <input type="checkbox"/> cover and rim in stainless steel AISI 304, class K 3, with seeping water opening	750 mm 850 mm 950 mm 1150 mm	40 150.83 40 150.84 40 150.85 40 150.87
	0.4 l/sec flow rate with 10 mm threshold		
 <p>Installation supports and mesh fabric included</p>	Shower channel <i>Linearis</i> in ABS with tileable access cover With bathroom drain body "<i>The Superflat</i>" in PP, sound-absorbing, Ø 50, flexible lateral outlet, 1 inlet Ø 40 <input type="checkbox"/> cover and rim in stainless steel AISI 304, class K 3, with seeping water opening	750 mm 850 mm 950 mm 1150 mm	42 701.83 42 701.84 42 701.85 42 701.87
	0.4 l/sec flow rate with 10 mm threshold		

Installation example *Linearis*



The *Linearis* shower channel features a narrow, elegant stainless steel channel ① which can be discreetly integrated into the bathroom design. With a flow capacity of 24 liters per minute the *Linearis* shower channel is ideal for mounting against the wall at the back of the shower. For cleaning and maintenance purposes the stainless steel channel and tileable access opening ② can be removed allowing full access to the odor trap and drain body.

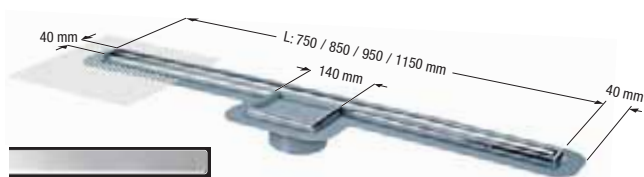
Professional advantages

- **Flow rate 0.4 l/sec**
- **Extremely narrow and elegant channel**
- **Easy cleaning**
Access cover for easy cleaning and maintenance
- **Particularly suitable** for installation on the wall side
- **Channel length:** 750 mm, 850 mm, 950 mm, 1150 mm
- **Flexible modular system** with a large number of components.



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

Shower channel upper section *Linearis*



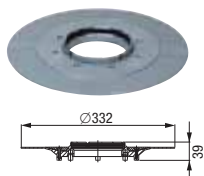
Linearis in ABS
with tileable access cover

□ cover and rim in stainless steel AISI 304, class K 3, with seeping water opening, installation supports and mesh fabric

0.4 l/sec flow rate with 10 mm threshold

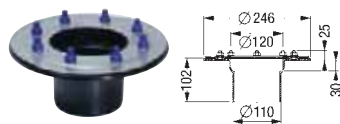
Length	Art. #
750 mm	27 808
850 mm	27 809
950 mm	27 810
1150 mm	27 812

Accessories



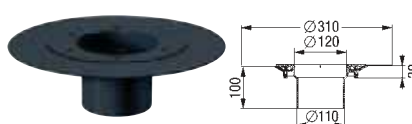
Glue flange

with counter flange
(also for compound seal)
Art. # **43 401**



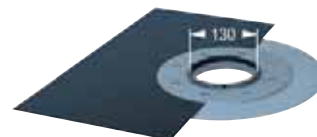
Extension section

in PP, with pressure sealing flange in stainless steel AISI 304, flange width 63 mm
Art. # **27 198**



Extension section

in ABS, with glue flange and counter flange
Art. # **27 199**



With glue flange and waterproof membrane

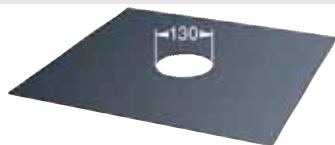
pre-mounted in PVC
1200 x 1200 mm Art. # **43 401.91**
1800 x 2000 mm Art. # **43 401.93**

Waterproof membrane in PVC without punched-out hole
1800 x 2000 mm Art. # **43 711**

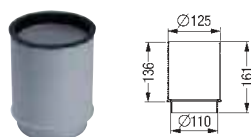
Glue
Art. # **43 719**

Elastomer waterproof membrane □ 500 mm

in PVC Art. # **43 710**
in EPDM Art. # **43 730**



The waterproof membrane in PVC and EPDM are not suitable for connections to asphalt sheeting.



Extension section

in ABS, with lip seal
Art. # **27 146**



Multistop

odour, foam, rodent and insect stop
Art. # **43 500**



Hair filter

made of polymer, Ø 108 mm
Art. # **43 700**



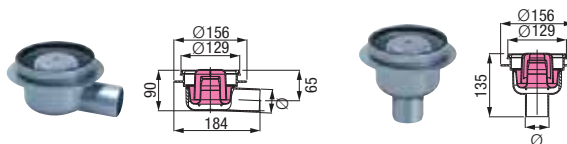
Transition section

with sealing ring Ø 50
Ø 50/75 Art. # **27 126**
Ø 50/40 Art. # **27 118**

Drain bodies

*) according to EN 1253 - 20 mm threshold

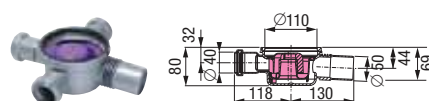
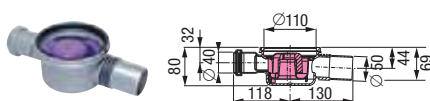
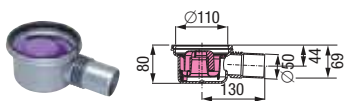
0.8 l/sec flow rate *)
Sealing water height 50 mm



Bathroom drain *Classic* in ABS

with removable odour trap		
Ø	Lateral outlet	Vertical outlet
50	Art. # 40 150	Art. # 40 250
75	Art. # 40 170	Art. # 40 270

without removable odour trap		
Ø	Lateral outlet	Vertical outlet
50	Art. # 40 151	Art. # 40 251
75	Art. # 40 171	Art. # 40 271



Bathroom drain "The Superflat" in PP

Lateral outlet Ø 50, with removable odour trap

Without lateral inlet
Art. # **42 700**

One lateral inlet Ø 40
Art. # **42 701**

Three lateral inlets Ø 40
Art. # **42 703**

0.8 l/sec flow rate *)
Sealing water height 30 mm



Wall drains

Wall drains *Scada*

Page **174 – 178**

New trends for sophisticated
bathroom drainage systems

Creative shower drains without barriers



Completely new design options in barrier-free bathrooms - ideal for new buildings and renovation work. There is a choice of four different drain covers all made of stainless steel: two are in a smooth finish for different tile thicknesses, one is an almost invisible cover which can be tiled over, and the fourth is in a three-dimensional wave-look design. The drain covers are also offered with LED back lighting.



OPTIMISED IN DESIGN AND FUNCTION

AWARD-WINNING DESIGN

Choice of four drain covers.



ONLY FROM KESSEL

Version with LED lights for a special atmosphere (Fig. 1, 3).

Velvet red		Valley green	
Pacific blue		RGB	

RGB with automatic colour changing.
 Specific light colour can be programmed.

12 Volt low-voltage technology.

Cable conduit connection pre-assembled as standard for cable routing for LED lighting (Fig. 2).

MULTIPLE OUTLETS

Maximum flexibility when fitting one of three selectable drain connection options. Thus problem-free laying of underfloor heating.





Wall drain **Scada**
for brick- and dry-wall constructions



Wall drain **Scada**
with installation board

Brick- and dry-wall **INSTALLATION**

PERFECT ADJUSTMENT

Installation supports can be adjusted by up to 55 mm, guaranteeing straightforward adjustment of the installation height from between 80 mm and 135 mm (Fig. 2).

ONLY 65 MILLIMETRES

Smallest installation height up to flange 65 mm.

FOR DRY-WALL CONSTRUCTIONS

Dry-wall mount for post-and-beam structure (installation without board), makes the flush connection to dry-wallings boards easier (Fig. 4).

SOUND PROTECTION

Measurements carried out by the Fraunhofer Institute in Stuttgart:
wall drain **Scada**

- ≥ 17 dB(A) according to DIN 4109
- ≥ 14 dB(A) according to VDI 4100 SST III

INSTALLATION board and wedge

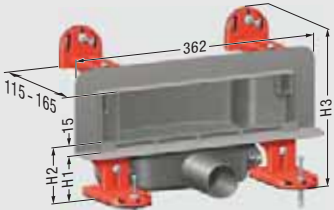




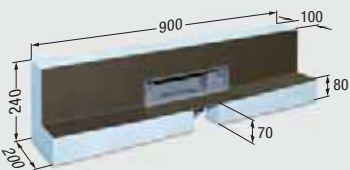
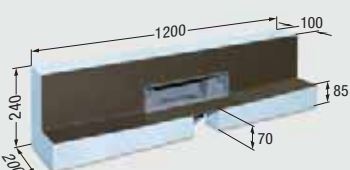


- ① Installation board with pre-mounted and sealed **Scada** wall drain completely installed, with slope on 3 sides.
Installation board 900 mm: A = 900 mm, B = 200 mm
Installation board 1200 mm: A = 1200 mm, B = 200 mm
- ② Wedge as shower board with integrated 3-sided slope.
Optionally available in two sizes:
☐ 900 x 900 mm ☐ 1200 x 1200 mm










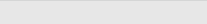

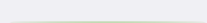
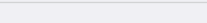
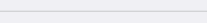
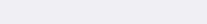
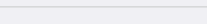
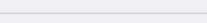
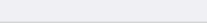
Scada **NEW**

Matrix order system / Products

Drain body	Covers			
Wall drain <i>Scada</i> in ABS For floor drainage indoors With odor trap and flange for alternative sealing Drain body in ABS Lateral outlet Ø 50 Connection option at the front, on the left side or right side  H1 = Upper edge flange 65 - 120 mm H2 = Upper edge tile 80 - 135 mm H3 = Overall height 218 - 273 mm (incl. installation supports)	<i>Scada</i>, invisible cover with stainless steel frame  Width x height 296 x 61 mm For floor tiles up to 10 mm, can be tiled with wall tiles up to 10 mm	<i>Scada</i>, stainless steel cover AISI 304  Width x height 312 x 74 mm For floor tiles up to 10 mm	<i>Scada</i>, Wave cover, stainless steel cover AISI 304  Width x height 312 x 74 mm For floor tiles up to 10 mm	<i>Scada</i>, stainless steel cover AISI 304  Width x height 312 x 67 mm For floor tiles up to 17 mm
Item comprised of drain body <i>Scada</i> and drain cover				
	48 000.01	48 000.02	48 000.03	48 000.04
Drain body in installation board 900 x 200 mm 	Item comprised of installation board with the wall drain <i>Scada</i> and drain cover			
	48 001.01	48 001.02	48 001.03	48 001.04
Drain body in installation board 1200 x 200 mm 	Item comprised of installation board with the wall drain <i>Scada</i> and drain cover			
	48 002.01	48 002.02	48 002.03	48 002.04

Scada **NEW** with LED lights

Matrix order system / Products

Drain body	Covers			
Wall drain Scada in ABS, with LED-Lights For floor drainage indoors With odor trap and flange for alternative sealing Drain body in ABS Lateral outlet Ø 50 Connection option at the front, on the left side or right side	Scada, invisible cover with stainless steel frame  Width x height 296 x 61 mm For floor tiles up to 10 mm, can be tiled with wall tiles up to 10 mm	Scada, stainless steel cover AISI 304  Width x height 312 x 74 mm For floor tiles up to 10 mm	Scada, Wave cover, stainless steel cover AISI 304  Width x height 312 x 74 mm For floor tiles up to 10 mm	Scada, stainless steel cover AISI 304  Width x height 312 x 67 mm For floor tiles up to 17 mm
	▼	▼	▼	▼
LED drain body	Item comprised of drain body <i>Scada</i> and drain cover			
Velvet red 	48 003.11	48 003.12	48 003.13	48 003.14
Valley green 	48 003.21	48 003.22	48 003.23	48 003.24
Pacific blue 	48 003.31	48 003.32	48 003.33	48 003.34
RGB 	48 003.41	48 003.42	48 003.43	48 003.44
Drain body with LED lights in installation board 900 x 200 mm	Item comprised of installation board with the wall drain <i>Scada</i> and drain cover			
Velvet red 	48 004.11	48 004.12	48 004.13	48 004.14
Valley green 	48 004.21	48 004.22	48 004.23	48 004.24
Pacific blue 	48 004.31	48 004.32	48 004.33	48 004.34
RGB 	48 004.41	48 004.42	48 004.43	48 004.44
Drain body with LED lights in installation board 1200 x 200 mm	Item comprised of installation board with the wall drain <i>Scada</i> and drain cover			
Velvet red 	48 005.11	48 005.12	48 005.13	48 005.14
Valley green 	48 005.21	48 005.22	48 005.23	48 005.24
Pacific blue 	48 005.31	48 005.32	48 005.33	48 005.34
RGB 	48 005.41	48 005.42	48 005.43	48 005.44

Covers **NEW****Scada, invisible cover**

with stainless steel frame AISI 304, 296 x 61 mm, for floor tiles up to 10 mm, can be tiled with wall tiles up to 10 mm

Art. # **48 011**

Scada cover

stainless steel cover AISI 304, 312 x 74 mm, for floor tiles up to 10 mm

Art. # **48 012**

Scada, Wave cover

stainless steel cover AISI 304, 312 x 74 mm, for floor tiles up to 10 mm

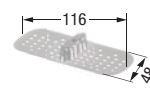
Art. # **48 013**

Scada cover

stainless steel cover AISI 304, 296 x 67 mm, for floor tiles up to 17 mm

Art. # **48 014**

Accessories

**LED lights**

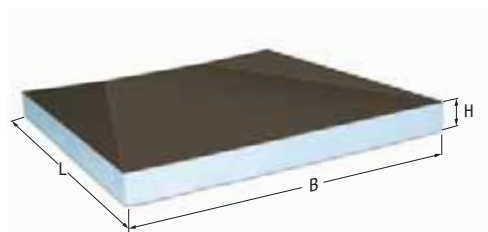
Velvet red Art. # **48 015**
 Pacific blue Art. # **48 017**
 Valley green Art. # **48 016**
 RGB Art. # **48 018**

Multistop

odour, foam, rodent and insect stop
 Art. # **48 400**

Hair filter

made of polymer
 Art. # **48 800**

**Installation board**

with integrated 3-side slope
900 x 900 x 80 mm (L x B x H)
 Art. # **48 051**

1200 x 1200 x 85 mm (L x B x H)
 Art. # **48 052**

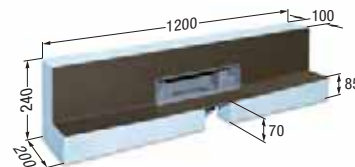
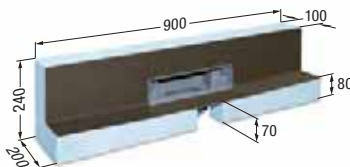
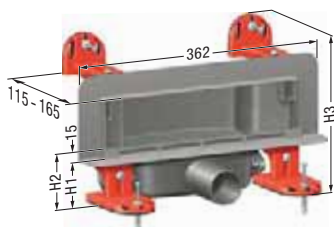
Drywall mount for drain body

with adhesive
☐ Height 300 mm
☐ Width 623 mm
 Art. # **48 063**

Sealing set

comprising adhesive and sealing tapes
 Art. # **48 062**

Drain bodies

**Drain body in ABS**

with anti-odor system and flange, lateral outlet Ø 50
 Connection option at the front, on the left side or right side

without LED lights Art. # **48 000**
 with LED lights Art. # **48 003**

Drain body in ABS

with installation board 900 x 200 mm and drain cover

with anti-odor system and flange, lateral outlet Ø 50
 Connection option at the front, on the left side or right side

without LED lights Art. # **48 001**
 with LED lights Art. # **48 004**

Drain body in ABS

with installation board 1200 x 200 mm and drain cover

with anti-odor system and flange, lateral outlet Ø 50
 Connection option at the front, on the left side or right side

without LED lights Art. # **48 002**
 with LED lights Art. # **48 005**

H1 = Upper edge flange 65 - 120 mm
 H2 = Upper edge tile 80 - 135 mm
 H3 = Overall height 218 - 273 mm (incl. attachment rails)



Basement drains

Basement drains

Page **180 – 184**

with or without backwater flap
or pump

Volatile liquid traps (heating oil stops)

Page **185**

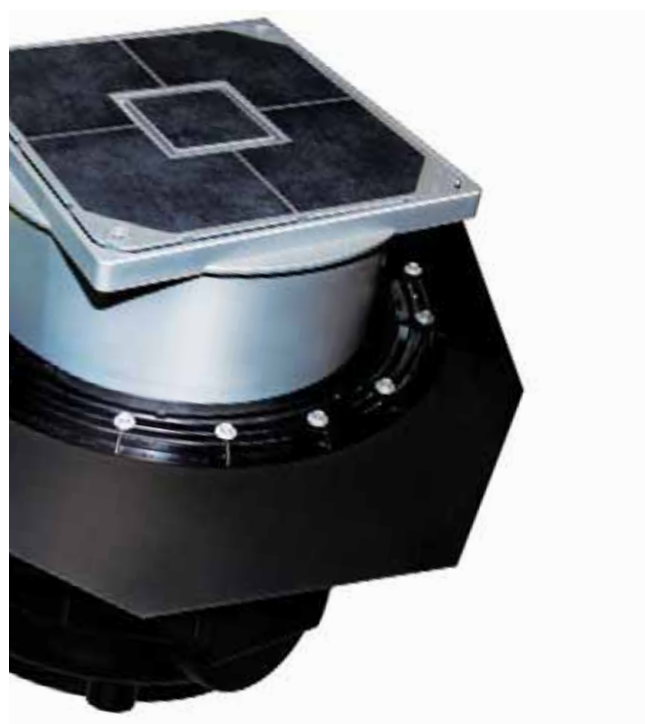
must be used wherever volatile
liquids can escape unexpectedly.

The basement drain that pumps against backwater



Pumpfix S

Backwater pumping station **Pumpfix S**
Basement drain with twin flap backwater valve and pump



INSTALLATION *Pumpfix S* IDEAL FOR NEW BUILDINGS

Installation in waterproof concrete with sealing gasket set optional.



FLEXIBLE INSTALLATION

Telescopic upper section can be twisted, tilted, height-adjusted.

TILABLE

Cover can be tiled as required, integrated drain and *Multistop* available as options (Fig. 1).

TECHNOLOGY

Pump with twin flap backwater valve and odour trap (Fig. 2).
Tool-free pump removal.

FURTHER INLETS

Connection of further inlets directly on site.

The innovative and backwater-safe basement drain for both new buildings and renovation work.

During normal operation, soiled water from sinks, washing machine, shower etc. runs into the sewage system without power consumption. If backwater occurs in the sewer, the pump automatically switches on via a float control. Penetrating surface water is also pumped to the sewer.





"The Universal"



Drehfix

Basement drains **"The Universal"** / **Drehfix**

Basement drains with backwater flaps

INSTALLATION **"The Universal"**

IDEAL FOR RENOVATION WORK

Installation in waterproof concrete with extension section with pressure sealing flange and waterproof sheet optional. Also suitable for alternative waterproofing layer.



FLEXIBLE INSTALLATION

Telescopic upper section can be twisted, tilted, height-adjusted. Three fixed inlets as standard 2 x Ø 50 and 1 x Ø 75 (Fig. 3).

STRAIGHTFORWARD MAINTENANCE

Maintenance and cleaning without tools.

INSTALLATION **Drehfix**

IDEAL FOR RENOVATION WORK

Minimum installation height with only 30 mm overlap.

FLEXIBLE INSTALLATION

Deeper installation up to 180 mm optional.

STRAIGHTFORWARD MAINTENANCE

Maintenance and cleaning without tools (Fig. 4).



3



4

Basement drains with effect backwater protection



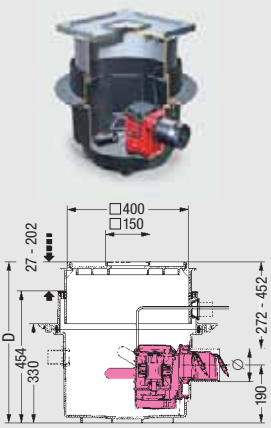



Secure drains thanks to integrated twin flap backwater valves.

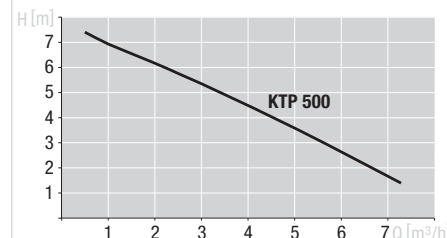
"The Universal" model is a versatile basement drain with variable connection options thanks to three inlets. The compact design of the **Drehfix** basement drain makes it popular for renovating older buildings. It fits into the recesses of old cast drains thanks to its small design height.

Basement drains with / without twin flap backwater valve

Pumpfix S

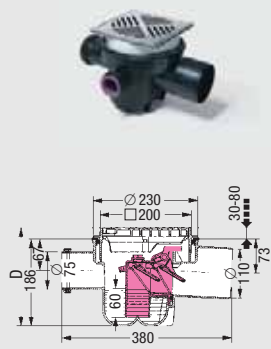



Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.6 l/sec flow rate Installation area 700 x 700 mm</p>	<p>Backwater pumping station <i>Pumpfix S</i> made of polymer for wastewater without sewage Lateral outlet 2.5° for installation in a concrete slab/floor for installation depth (D) from 481 - 656 mm With removable pump, twin flap backwater valve and odour trap.</p> <p>Twin flaps, self-closing, one of which can be locked by hand, self activating pump during backwater. With telescopic upper section for free height and level adjustments recessed cover for on-site tiling, class A 15, made of polymer.</p> <p>With moisture protective sealing flange.</p> <p>Not for use as a lifting station.</p> <p>   EN 1253 According to EN 13564 Type 5</p>	Ø 110	28451



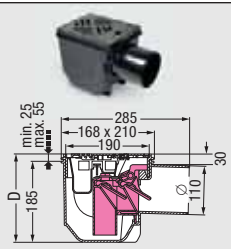
"The Universal"

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.8 l/sec flow rate Installation area 400 x 320 mm</p>	<p>Basement drain "<i>The Universal</i>" in PP with odour trap and sludge trap</p> <p>1 With twin flap backwater valve</p> <p>2 Without twin flap backwater valve</p> <p><input type="checkbox"/> with slotted cover 188 x 188 mm made of polymer, black, class K 3 (able to withstand loads up to max. 300 kg). Installation depth (D) 216 - 276 mm</p> <p><input type="checkbox"/> with slotted cover 187 x 187 mm and rim in stainless steel AISI 304, screwed, class L 15 (able to withstand loads up to max. 1.5 to). Installation depth (D) 216 - 266 mm</p> <p>   EN 1253 According to EN 13564 Type 5</p>	<p>1 Ø 110 2 Ø 110</p> <p>1 Ø 110 2 Ø 110</p>	<p>27611 29111</p> <p>27621 29121</p>

Drehfix

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.8 l/sec flow rate Installation area 320 x 190 mm</p>	<p>Basement drain <i>Drehfix</i> in ABS</p> <p>1 With twin flap backwater valve</p> <p>2 Without twin flap backwater valve</p> <p>with/without removeable twin flap backwater valve and emergency closure which can be locked by hand, odour trap and sludge trap and integrated, height adjustable upper section.</p> <p>Lateral outlet 2.5° Installation depth (D) 210 - 240 mm.</p> <p><input type="checkbox"/> with slotted cover 150 x 190 mm made of polymer, black, with Easy Entry Function. Class K 3 (able to withstand loads up to max. 300 kg).</p> <p>According to EN 13564 Type 5.</p>	<p>1 Ø 110 2 Ø 110</p>	<p>27301 33101</p>

Basement drains with / without twin flap backwater valve

Installation example *Pumpfix S*



Pumpfix S ① is a basement drain for wastewater without sewage with gravity drainage to the sewer. Further inlets ② such as shower or washing machine can be connected to the drain installed in the concrete slab. Any surface water is drained through the cover ③ and discharged. In the event of backwater, reliable draining still takes place since the pump is switched on in addition against the backwater pressure in the sewer ④.

Installation example *"The Universal"*



"The Universal" is a versatile basement drain ① with a choice of two Ø 50 mm inlets and one Ø 75 mm ② inlet to protect individual drains against backwater from the sewer. Cover made of plastic or stainless steel ③.

Installation example *Drehfix*



The *Drehfix* is a compact basement drain ① for protecting individual drains against backwater from the sewer. Thanks to its small design height, *Drehfix* fits into the recess of old cast drains. It provides scoring possibilities for two further inlets ②.

Professional advantages

- **Vertically adjustable upper section for stepless installation in concrete slabs:**
Rotatable, tiltable, vertically adjustable
- **Installation in waterproof concrete.**
Gasket set to prevent groundwater infiltration.
- Elegant optical appearance due to recessed cover for on-site tiling
- Perfect for drainage of outdoor basement access steps with additional inlet connections
- **Wastewater discharging even during backwater**

Professional advantages

- **Installation in waterproof concrete.**
Gasket set to prevent groundwater infiltration.
- **Alternative seal** with shallow bed upper section Art. # 48 968.
- **Hand-lockable emergency closure**
- **Tool-free maintenance:**
Fast and simple cleaning with one-hand quick-release fastener.
- **Vertically adjustable upper section for stepless installation in concrete slabs:**
Rotatable, tiltable, vertically adjustable
- **Three lateral inlets**
Three lateral inlets (2 x Ø 50 and 1 x Ø 75) are attached as standard.

Professional advantages

- **With twin flap backwater valve and odour trap**
- **Hand-lockable emergency closure**
(Visual control without removing the cover).
- **Stepless installation** with extension section Art. # 38 670.
- **Tool-free maintenance.**
Fast and simple cleaning with one-hand quick-release fastener.
- **Height adjustable upper section**

Basement drains without twin flap backwater valve

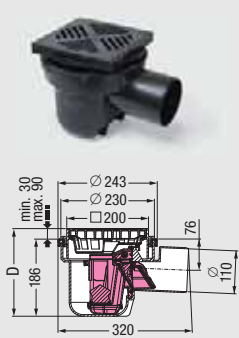
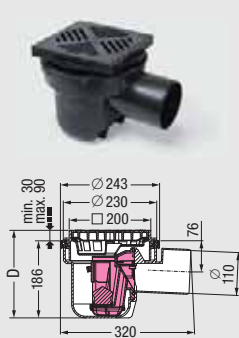


Basement drains

Products

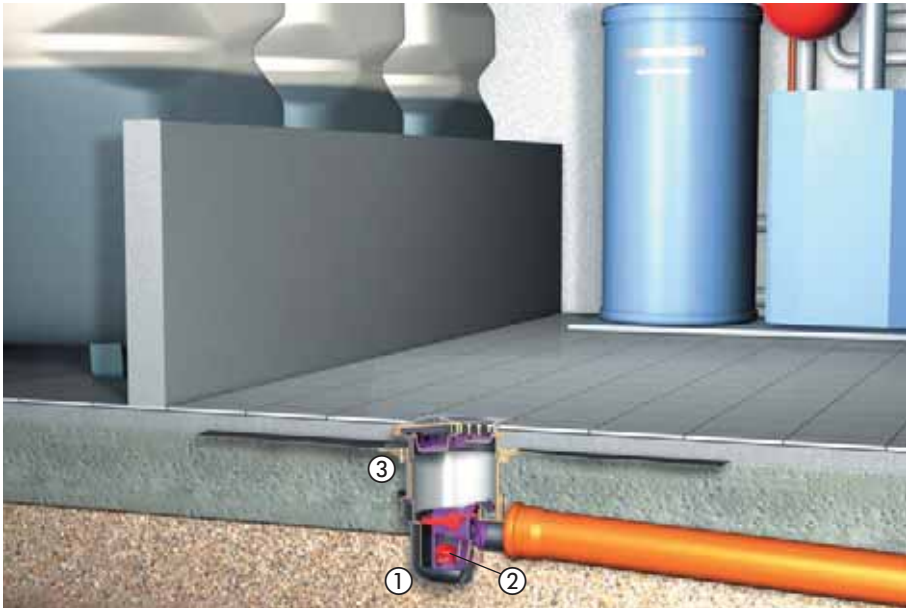
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.6 l/sec flow rate Installation area 220 x 280 mm</p>	<p>Basement drain in PP Lateral outlet 2.5°, with removable odour trap and sludge trap. With upper section in PP</p> <p><input type="checkbox"/> with slotted cover 150 x 150 mm made of polymer, black. Class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 110	36 501
 <p>1.8 l/sec flow rate Installation area 220 x 180 mm</p>	<p>Basement drain in PP With removable odour trap With lip seal and protective cover for use during construction. With upper section in ABS Lateral outlet 2.5°</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black. Class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 110	45 110.40
 <p>1.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Vertical outlet</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black. Class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 110	45 210.40
 <p>1.8 l/sec flow rate Installation area 220 x 180 mm</p>	<p>Basement drain in PP Without removable odour trap, with sludge trap With lip seal and protective cover for use during construction. With upper section in ABS Lateral outlet 2.5°</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black. Class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 110	34 101
 <p>1.8 l/sec flow rate Installation area 180 x 180 mm</p>	<p>Vertical outlet</p> <p><input type="checkbox"/> with slotted cover 138 x 138 mm in ABS, black. Class K 3 (able to withstand loads up to max. 300 kg).</p>	Ø 110	34 102



Volatile liquid traps with / without twin flap backwater valve

Volatile liquid traps			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1.0 l/sec flow rate Installation area 400 x 250 mm</p>	<p>Volatile liquid trap made of polymer</p> <p>With twin flap backwater valve, with integrated odour trap and sludge trap</p> <p><input type="checkbox"/> with slotted cover 188 x 188 mm made of polymer, black, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Installation depth (D) 216 - 276 mm</p> <p>EN 13564 Type 5 EN 1253-3 and 5</p>	Ø 110	52 101
 <p>1.0 l/sec flow rate Installation area 400 x 250 mm</p>	<p>Volatile liquid trap made of polymer</p> <p>With integrated odour trap and sludge trap</p> <p><input type="checkbox"/> with slotted cover 188 x 188 mm made of polymer, black, class K 3 (able to withstand loads up to max. 300 kg).</p> <p>Installation depth (D) 216 - 276 mm</p> <p>  EN 1253-3 and 5</p>	Ø 110	51 101

Installation example volatile liquid traps





Volatile liquid traps ① are the ideal drain for the boiler room in the basement. They use an integrated floater ② to guarantee reliable retention of volatile liquids escaping from heating systems and backwater flaps to prevent wastewater penetration from the sewage system. There is a special upper section ③ with extension available as an accessory for installation in waterproof concrete.


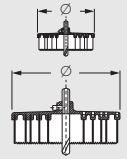

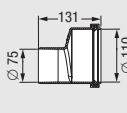

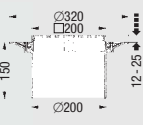

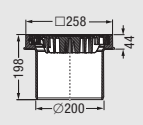
Professional advantages



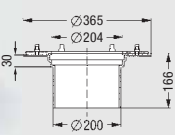


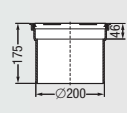

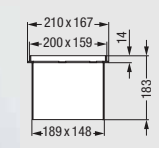

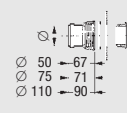
- **Easy installation** with adjustable upper section (vertically and laterally adjustable)
- Sealing gasket between extension section and flange - Article # 27 298 (prevents floor moisture damage)
- **Waterproofing seal** - Article # 48 968
- **Cast iron cover** handles higher loads up to 12.5 tons (load class B) - Article # 48 985
- Upgradable to twin flap backwater valve
- **Quick and easy cleaning** with one-hand locking clasp

Pumpfix S / "The Universal" / Drehfix / Basement drains

Accessories


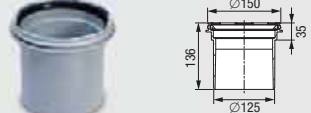





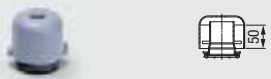
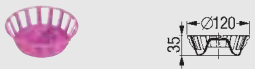


Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
<p>For models made on or after Jan 2011</p>  <p>1</p>  <p>2</p>  	<p>Cover plate, surface water tight with drain Ø 75, class A 15, includes Multistop</p> <p>1 recessed for on-site tiling, grey, for tile thicknesses of 18 mm</p> <p>2 with integrated grating, black</p> <p>for article numbers: 28 451</p> <p>Multistop odour, foam, rodent and insect stop</p> <p>Ventilation always required when in use!</p> <p>Hair filter made of polymer</p>	-	83 045
		-	83 046
		-	43 500
		-	43 700
 	<p>Cover plate, surface water tight, class A 15 incl. gasket Art. # 173-145</p> <p><input type="checkbox"/> black Ventilation always required when in use!</p> <p><input type="checkbox"/> recessed for on-site tiling, grey, for tile thicknesses of 18 mm. Ventilation always required when in use!</p> <p>for article numbers: 28 451</p>	-	83 050
		-	83 052
	<p>Cover plate, class A 15</p> <p><input type="checkbox"/> with integrated grating, black class A 15</p> <p>for article numbers: 28 451</p>	-	83 053
 <p>Waterproof concrete installation tested by MFPA Leipzig UB 5.1/11-452-1</p>	<p>Gasket set for installation in waterproof concrete for article numbers: 28 451</p> <p>Extension section with centre flange see page 90</p>	-	83 023
		-	83 075
	<p>Extension section with flange made of polymer, max. extension 180 mm For gasket set Art. # 83 023 for article numbers: 28 451 When multiple extension sections are used make sure that access to valve is still possible !</p>	-	83 071
 	<p>Extension section incl. gasket, max. extension 180 mm for article numbers: 28 451 When multiple extension sections are used make sure that access to valve is still possible !</p> <p>Pipe sealing gasket</p> <p>for article numbers: 28 451</p>	<p>Ø 50</p> <p>Ø 75</p> <p>Ø 110</p>	83 070
			850 114
			850 116
			850 117

Pumpfix S / "The Universal" / Drehfix / Basement drains			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 	Hole saw Ø 50, 75, 110 (Saw blade holder Ø = 145 mm)	-	50 101
	Hole saw Ø 50, 75, 110, 125 and 160 (Saw blade holder Ø = 190 mm)	-	50 100
 	Transition section Ø 110 / 75 Ø 110 socket / Ø 75 spigot can be used as an upper section, incl. gasket for article numbers: 27 611, 27 621, 27 301, 29 111, 29 121, 33 101, 36 501	Ø 75/110	27 602
 	Variofix shallow bed upper section with slotted cover and rim in stainless steel AISI 304, screwed, class L 15, with mesh fabric for article numbers: 27 611, 27 621, 29 111, 29 121, 51 101, 52 101	-	48 968
 	Upper section with support rim in Ecoguss with round slotted cover in Ecoguss Ø 235 mm, class B 125, with Lock & Lift System for article numbers: 27 611, 27 621, 29 111, 29 121, 51 101, 52 101	-	67 985

"The Universal" / Drehfix / Basement drains			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Mesh fabric for article numbers: 27 298	-	046-056
 	Extension section in Ecoguss with pressure sealing flange and counter flange for installation in waterproof concrete H = 166 mm for article numbers: 27 611, 27 621, 29 111, 29 121, 51 101, 52 101	-	48 958
	Elastomer waterproof membrane in NBR for article numbers: 48 958	-	48 982
 	Extension section H = 175 mm, with lip seal for article numbers: 27 611, 27 621, 29 111, 29 121, 51 101, 52 101	-	48 988
 	Extension section H = 183 mm for article numbers: 27 301, 33 101	-	38 670
 	Inlet sections incl. flat seal for article numbers: 27 301, 33 101	Ø 50 Ø 75 Ø 110	39 005 39 007 39 100

"The Universal" / Drehfix / Basement drains

Accessories

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Extension section Can be extended by 80 mm for article numbers: 36 501	-	36 590
	Extension section with lip seal, without lateral inlet for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 987
	Glue flange with counter flange for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 410
	Pressure sealing flange for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 402
	Elastomer waterproof membrane in NBR for article numbers: 48 402	-	48 981
	Multistop odour, foam, rodent and insect stop for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 500
	Hair filter for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 700
	Bell-shaped odour trap insert Seal water height 50 mm for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	27 169
	Sludge trap for article numbers: 34 101, 34 102, 45 210.40, 45 110.40	-	48 168
	Adapter for retrofitting of 27 603 (twin flap backwater valve) and 27 605 (odour trap insert) for basement drains 27 300, 27 500, 28 650, 28 950 until 12/95 and 29 100 until 9/95	-	27 608
	Rodent protection for article numbers: 27 611, 27 621, 27 301, 29 111, 29 121, 33 101, 51 101	-	27 609



Stainless steel drains and channels

Floor drains *Ferrofix*
System 125

Page **192 – 193**

Floor drains *Ferrofix*
System 200

Page **194 – 197**

Channel drains *Ferrofix*

Page **198 – 201**

Slotted channels *Ferrofix*

Page **202**



SmartSelect makes planning quite simply quicker - visit smartselect.kessel.de for the configurator for alternative waterproofing layers in the system

Top-quality drains / channels made of stainless steel



Complete range for draining wet rooms and food-processing plants. Our stainless steel range offers practical solution variants for every area of application.

The stainless steel AISI 304 (or AISI 316L on request) complies fully with the requirements for food-processing plants and guarantees perfect functional use. Our grate covers are compliant with DIN 1253-1.



System 125
With connection flange, pressure sealing flange, twin sealing

System 200

Floor drains
for all types of sealing gaskets

FLOOR DRAINS

made of stainless steel AISI 304

INDIVIDUAL

Comprehensive range of drains for all draining requirements can be combined to meet individual requirements.

CONNECTIONS

Outlets for SML pipe connection.

HYGIENE

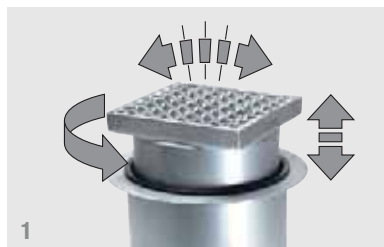
Easy maintenance and care thanks to removable odour trap in the installed state.

INSTALLATION

Easy installation thanks to variable upper sections which can be turned, tilted and height-adjusted (Fig. 1).

ACCESSORIES

Practical accessories with approval Z-19.17-1719: fire and flue gas insert *Fire-Kit* System 125 or 200 and *Quick-Fit* passage seal with or without fire protection (Fig. 2). Only for System 125 drain body with vertical outlet.





System 125

Channel drains

Express variant **available ex stock**



System 125 or System 200

Channel drains / slotted channels

customised combinations possible

CHANNEL DRAINS

made of stainless steel AISI 304

VARIANTS

Complete channels with outlet socket as *Express* version (Fig. 3), channel profiles with adhesive edge for shallow bed waterproofing layers or as a version in a modular system for the customised combination of individual elements.

All slotted grills made of stainless steel, non-slip, class L 15 (Fig. 4).

DRAIN BODY

Suitable *Ecoguss*, *Practicus* or *Ferrofix* drain bodies available as optional accessories.

STABLE

With adjustable feet for height levelling.

ACCESSORIES

Practical accessories with approval Z-19.17-1719: fire and flue gas insert *Fire-Kit* System 125 or 200 and *Quick-Fit* passage seal with or without fire protection (Fig. 2). Only for System 125 drain body with vertical outlet.

CHANNEL DRAINS / SLOTTED CHANNELS

made of stainless steel AISI 304

INDIVIDUAL

Modular system for the customised combination of individual elements. There is always a choice of three channel profiles: U-profile, adhesive edge for shallow bed waterproofing layers (Fig. 4) and tile connection bracket (not for shallow bed waterproofing layers). Large selection of grating and covers (Fig. 5).

DRAIN BODY

Suitable *Ecoguss*, *Practicus* or *Ferrofix* drain bodies available as optional accessories.

STABLE

With adjustable feet for height levelling.

ACCESSORIES

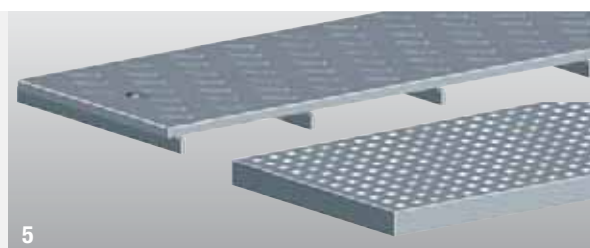
Practical accessories with approval Z-19.17-1719: fire and flue gas insert *Fire-Kit* System 125 or 200 and *Quick-Fit* passage seal with or without fire protection (Fig. 2). Only for System 125 drain body with vertical outlet.



3



4



5

Floor drains *Ferrofix* with pressure sealing flange

Matrix order system / Products

Drain body	Upper sections			
<p>Floor drain <i>Ferrofix</i> in stainless steel AISI 304 with pressure sealing flange with odour trap, connection to SML-pipe</p>	<p>Shallow bed upper section in ABS, with mesh fabric</p> <p>with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed</p> <p>Art. # 48 907</p>	<p>Shallow bed upper section in ABS, with mesh fabric</p> <p>with anti-slip drain cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15</p> <p>Art. # 48 965</p>	<p>Upper section in ABS</p> <p>with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed</p> <p>Art. # 48 176</p>	<p>Upper section in stainless steel AISI 304</p> <p>with anti-slip drain cover 138 x 138 mm and rim in stainless steel AISI 304, class L 15 / M 125*</p> <p>* On-site lining work required</p> <p>Art. # 48 177</p>
Ø 78	Complete drain comprising a combination of the drain body and upper section			
Lateral outlet Art. # 54 200	54 200.52	54 200.21	54 200.61	54 200.20
Vertical outlet Art. # 54 210	54 210.52	54 210.21	54 210.61	54 210.20
Ø 110	Complete drain comprising a combination of the drain body and upper section			
Lateral outlet Art. # 54 220	54 220.52	54 220.21	54 220.61	54 220.20
Vertical outlet Art. # 54 230	54 230.52	54 230.21	54 230.61	54 230.20

* Draining capacity valid for Ø 110 vertical outlet. Other variants 1.8 l/sec.


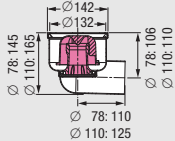

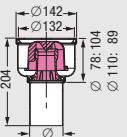

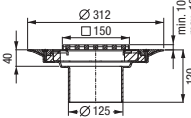

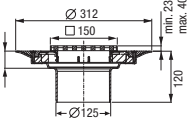

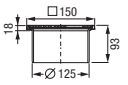
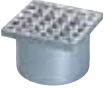
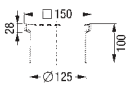


EN 1253

Accessories see page 194

Floor drains *Ferrofix* with connection flange

Matrix order system / Products

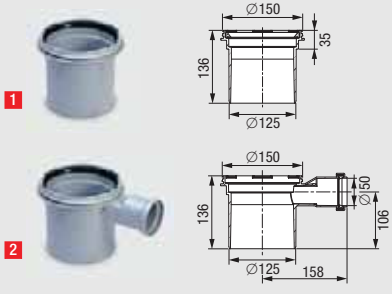

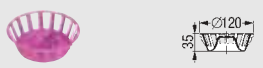
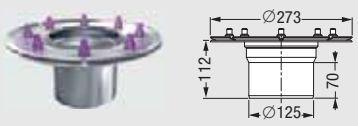
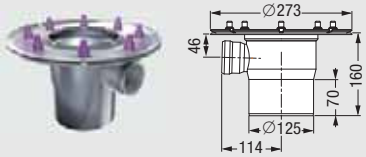
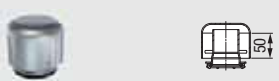
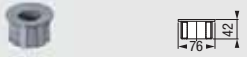

Drain body	Upper sections			
Floor drain <i>Ferrofix</i> in stainless steel AISI 304 with connection flange with odour trap, connection to SML-pipe	Shallow bed upper section in ABS, with mesh fabric	Shallow bed upper section in ABS, with mesh fabric	Upper section in ABS	Upper section in stainless steel AISI 304
   	 	 	 	 
	with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed	with anti-slip drain cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15	with slotted cover 138 x 138 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed	with anti-slip drain cover 138 x 138 mm in stainless steel AISI 304, class L 15 / M 125*
	Art. # 48 907	Art. # 48 965	Art. # 48 176	Art. # 48 177
	▼			
	Complete drain comprising a combination of the drain body and upper section			
Ø 78				
Lateral outlet Art. # 54 400	54 400.52	54 400.21	54 400.61	54 400.20
Vertical outlet Art. # 54 410	54 410.52	54 410.21	54 410.61	54 410.20
Ø 110				
	Complete drain comprising a combination of the drain body and upper section			
Lateral outlet Art. # 54 420	54 420.52	54 420.21	54 420.61	54 420.20
Vertical outlet Art. # 54 430	54 430.52	54 430.21	54 430.61	54 430.20

* Draining capacity valid for Ø 110 vertical outlet. Other variants 1.8 l/sec.



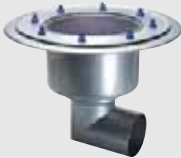
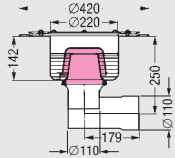
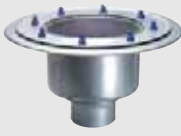
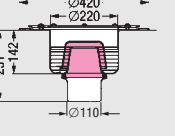

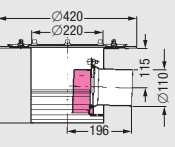

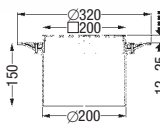

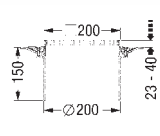

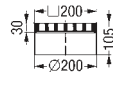

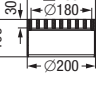
EN 1253

Accessories see page 194

Floor drains Ferrofix			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Extension section in PP, with lip seal 1 without lateral inlet 2 with lateral inlet Ø 50	- -	48 987 48 989
	Sludge trap in stainless steel	-	48 637
	Sludge trap made of polymer fits all drain bodies <i>Ferrofix</i> System 125	-	48 168
	Extension section in stainless steel AISI 304, with pressure sealing flange in stainless steel AISI 304, flange width 70 mm, Ø 273 mm	-	54 187
	Extension section in stainless steel AISI 304, with pressure sealing flange in stainless steel AISI 304, side inlet with plug-in sleeve Ø 50/40. flange width 70 mm, Ø 273 mm	-	54 189
	Odour trap in stainless steel AISI 304 sealing water height 50 mm	-	54 188
 <p>Certification no. Z-19.17-1719</p>	Fire-Kit Fire protection insert can only be retrofitted for vertical drains Only use in combination with an odour trap	Ø 110 Ø 58/78/83	48 100 48 099
 <p>1 Certification no. Z-19.17-1719</p>	Quick-Fit the passage seal for core drilling for drain body vertical outlet 1 with fire protection (only use in combination with <i>Fire-Kit</i> fire protection insert) 2 without fire protection	- -	48 990 48 991

Floor drains *Ferrofix* with pressure sealing flange

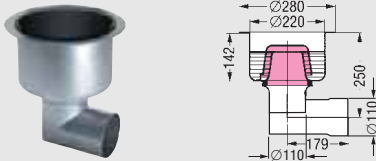
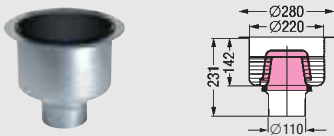
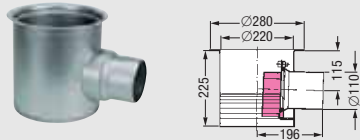



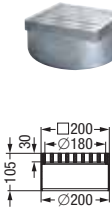
Matrix order system / Products

Drain body	Upper sections			
<p>Floor drain <i>Ferrofix</i> in stainless steel AISI 304 with pressure sealing flange with odour trap, connection to SML-pipe</p>  <p>1 Lateral outlet</p>   <p>2 Vertical outlet</p>  <p>For low installation height: Floor drain <i>Ferrofix</i> in stainless steel AISI 304 with pressure sealing flange with odour trap in stainless steel AISI 304, connection to SML-pipe</p>  <p>3 Lateral outlet</p> 	<p>Shallow bed upper section in ABS, with mesh fabric</p>   <p>with slotted cover 200 x 200 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed</p> <p>Art. # 48 978</p>	<p>Shallow bed upper section in ABS, with mesh fabric</p>   <p>with anti-slip drain cover 190 x 190 mm and rim in stainless steel AISI 304, non-slip, class L 15</p> <p>Art. # 48 969</p>	<p>Upper section in stainless steel AISI 304</p>   <p>with anti-slip drain cover 190 x 190 mm in stainless steel AISI 304, non-slip, class M 125</p> <p>Art. # 57 410</p>	<p>Upper section in stainless steel AISI 304</p>   <p>with slotted cover 190 x 190 mm in stainless steel AISI 304, class M 125</p> <p>Art. # 57 420</p>
Ø 110	Complete drain comprising a combination of the drain body and upper section			
1 Lateral outlet Art. # 55 550	55 550.52	55 550.21	55 550.20	55 550.30
2 Vertical outlet Art. # 55 600	55 600.52	55 600.21	55 600.20	55 600.30
3 Lateral outlet Art. # 142 025	142 025.52	142 025.21	142 025.20	142 025.30


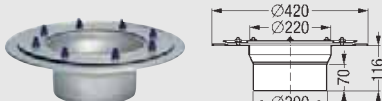
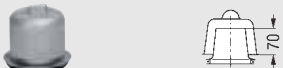
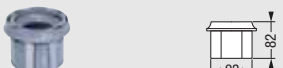

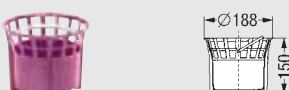
Accessories see page 197

Floor drains **Ferfix** with glue flange

Matrix order system / Products

Drain body		Upper sections			
<p>Floor drain <i>Ferfix</i> in stainless steel AISI 304 with connection flange with odour trap, connection to SML-pipe</p>  <p>1 Lateral outlet</p>  <p>2 Vertical outlet</p> <p>For low installation height:</p> <p>Floor drain <i>Ferfix</i> in stainless steel AISI 304 with connection flange with odour trap in stainless steel AISI 304, connection to SML-pipe</p>  <p>3 Lateral outlet</p>		<p>Shallow bed upper section in ABS, with mesh fabric</p>  <p>with slotted cover 200 x 200 mm and rim in stainless steel AISI 304, non-slip, class L 15, screwed</p> <p>Art. # 48 978</p>	<p>Shallow bed upper section in ABS, with mesh fabric</p>  <p>with anti-slip drain cover 190 x 190 mm and rim in stainless steel AISI 304, non-slip, class L 15</p> <p>Art. # 48 969</p>	<p>Upper section in stainless steel AISI 304</p>  <p>with anti-slip drain cover 190 x 190 mm in stainless steel AISI 304, non-slip, class M 125</p> <p>Art. # 57 410</p>	<p>Upper section in stainless steel AISI 304</p>  <p>with slotted cover 190 x 190 mm in stainless steel AISI 304, class M 125</p> <p>Art. # 57 420</p>
Ø 110		Complete drain comprising a combination of the drain body and upper section			
1 Lateral outlet Art. # 55 350	▶	55 350.52	55 350.21	55 350.20	55 350.30
2 Vertical outlet Art. # 55 400	▶	55 400.52	55 400.21	55 400.20	55 400.30
3 Lateral outlet Art. # 142 026	▶	142 026.52	142 026.21	142 026.20	142 026.30

Accessories see page 197

Floor drains Ferfofix			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Upper section in stainless steel AISI 304 □ with anti-slip drain cover 290 x 290 mm in stainless steel AISI 304, non-slip, class M 125* fits all drain bodies System 200	-	57 415
	Upper section in stainless steel AISI 304 □ with slotted cover 290 x 290 mm in stainless steel AISI 304, class M 125* fits all drain bodies System 200	-	57 425
	Upper section in stainless steel AISI 304 □ with round-slot cover plate 290 x 290 mm in stainless steel AISI 304, non-slip, class M 125* fits all drain bodies System 200	-	57 435
	Extension section in PP, with lip seal on request also in AISI 304 / AISI 316L	-	48 988
	Extension section in stainless steel AISI 304 □ with pressure sealing flange □ with connection flange	- -	27 185 27 186
	Odour trap in stainless steel AISI 304, removable, sealing water height 70 mm	-	27 182
 Certification no. Z-19.17-1719	Fire-Kit 200 Fire protection insert can only be retrofitted for vertical drains Only use in combination with an odour trap	-	48 200
	Sludge trap in stainless steel AISI 304 □ Height 60 mm (H) □ Height 150 mm (H)	- -	67 302 67 301
	Sludge trap in PE-HD	-	67 300

Drains *Ferrofix* in stainless steel AISI 304

Low profile floor surface applications 15 mm*

When planning renovations, specialists often face the problem of using products in very shallow floor structures that still meet the sealing requirements.

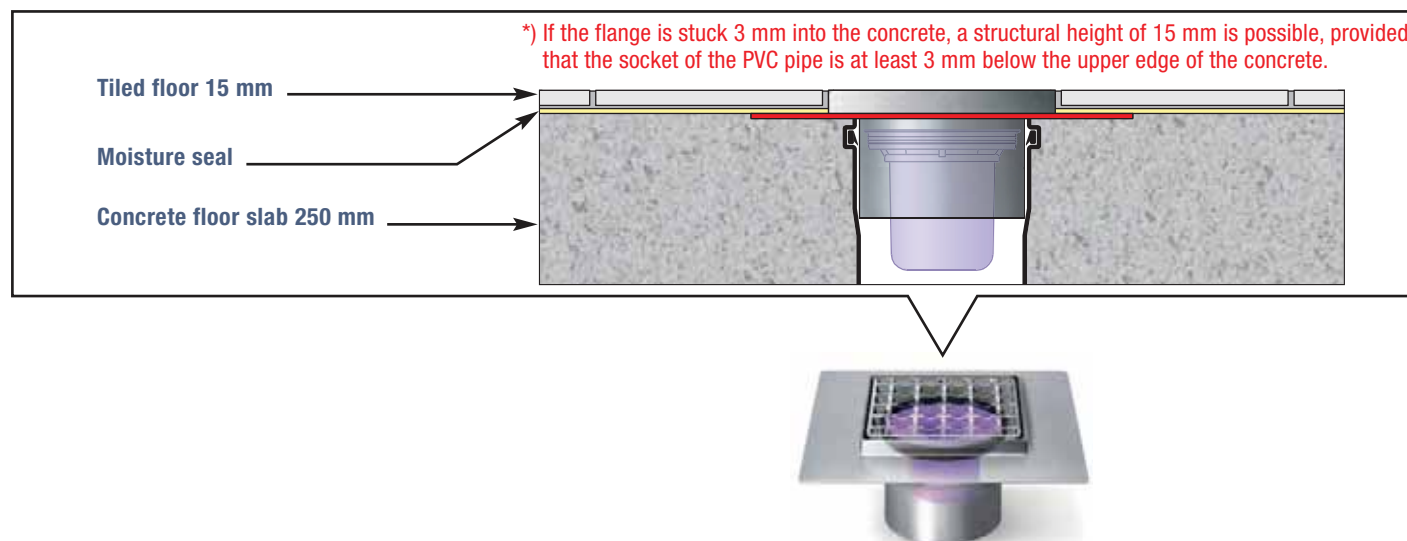


As a customer, describe your installation situation and we will make a *Ferrofix* - that is precisely tailored to your requirements. Just ask us!

A wide range of customised solutions are possible using the KESSEL *Ferrofix* stainless steel drains:

- ☐ Floor structures up to a minimum height of 15 mm are possible, even with an adhesive edge for the compound seal
- ☐ Materials in various variants can be selected
- ☐ Choice of cover forms and sizes

Example:



Manual upper section closure - for the damming up and straightforward draining of tanks







NEW

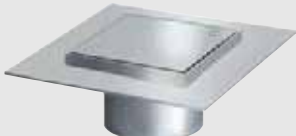



Special *Ferrofix* System 125 upper section made of 1.4301 stainless steel (AISI 304) with hole-pattern cover, with finger hole in the centre for easier removal of the cover (1) if required. With welded adhesive flange made of flat steel 50 x 3 mm. Drain with closure system (2).



Low-profile drain for very low floor structures



Upper sections in ABS / stainless steel AISI 304 with connection flange				Products
Illustration	Article description	Cover mm incl. rim	Connection Ø	Article #
	Upper section in ABS with closed cover made of stainless steel AISI 304, screwed, without gasket, class K 3	150 x 150	110	27 191G
	Upper section in ABS with rim and a closed cover made of stainless steel AISI 304, screwed, without gasket, class L 15	150 x 150 150 x 150	110 125	27 196G 48 951G
	Upper section in stainless steel AISI 304 with a closed cover made of stainless steel AISI 304, screwed, without gasket, class K 3	150 x 150 150 x 150	110 125	27 195-PL 48 977-PL
	Upper section in stainless steel AISI 304 with a closed cover made of stainless steel AISI 304, screwed odour-tight, with gasket with a backwater-proof seal up to 0.5 bar, class L 15	150 x 150 150 x 150 200 x 200	110 125 200	27 177-PL 48 177-PL 57 410-PL
NEW 	Cleaning closure in stainless steel AISI 304 with closed, screw-type cover plate, gastight and a backwater-proof seal up to 0.5 bar, tileable, class L 15	150 x 150 150 x 150	110 125	27 177-PLF 48 177-PLF
NEW 	Upper section in stainless steel AISI 304 with cover plate and round inlet slot with insertion socket connection Ø 50, as free inlet to the floor drain, class L 15.	150 x 150	125	48 435

Upper sections in stainless steel AISI 304 with glue flange				Products
Illustration	Article description	Cover mm incl. rim	Connection Ø	Article #
	Upper section in stainless steel AISI 304 with glue flange and a closed cover made of stainless steel AISI 304, screwed, without gasket, class K 3	150 x 150 150 x 150	110 125	27 195-PL-KF 48 977-PL-KF
	Upper section in stainless steel AISI 304 with glue flange and a closed cover made of stainless steel AISI 304, screwed odour-tight, with gasket, with a backwater-proof seal up to 0.5 bar, class L 15	150 x 150 150 x 150	110 125	27 177-PL-KF 48 177-PL-KF
NEW 	Cleaning closure in stainless steel AISI 304 with glue flange, with closed, screw-type cover plate, gastight and a backwater-proof seal up to 0.5 bar, tileable, class L 15	150 x 150 150 x 150	110 125	27 177-PLF-KF 48 177-PLF-KF
	Upper section in stainless steel AISI 304 with glue flange and stainless steel cover, class L 15 / M 125	150 x 150 150 x 150 200 x 200 200 x 200 300 x 300	110 125 125 200 200	27 177-KF 48 177-KF 48 177-200-KF 57 410-KF 57 415-KF

Drainage channels *Ferrofix Express*

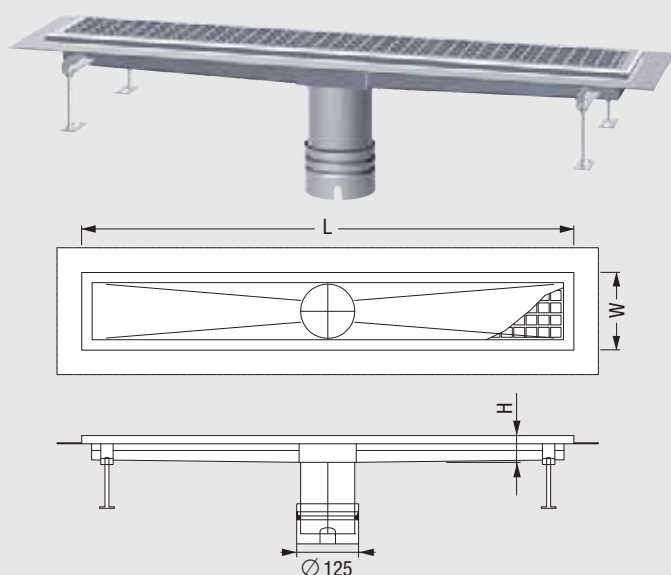
Products

Illustration

Article description

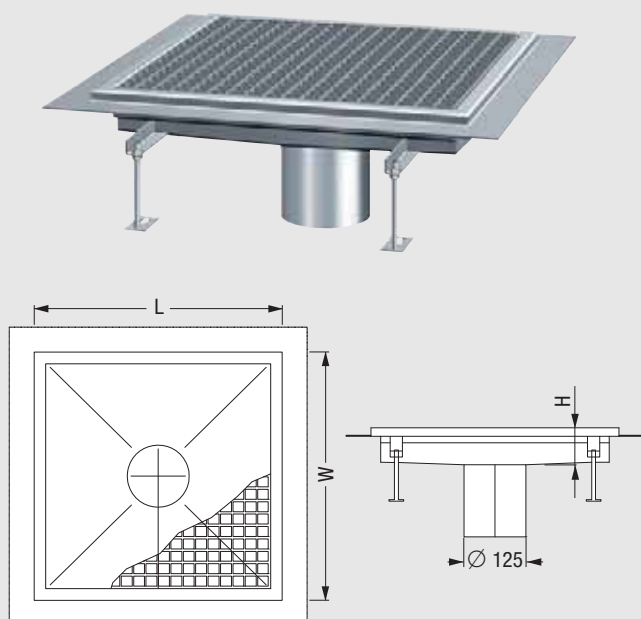
Linear stainless steel channel drains

System 125



Square/rectangular stainless steel channel drains

System 125



Drainage channels *Ferrofix Express* made of stainless steel

Material thickness 2.0 mm - acid-treated in a pickling bath, visible cover sanded, with longitudinal and transverse slopes, feet for height adjustment, with welded distance grates to secure the covers, **including drain pipes in stainless steel.**

Channel profile for shallow bed seals, with adhesive edge 15 mm deep and 30 mm turned down all-round to the outside, with welded mitre joints.

Linear drainage channels:

Channel lengths (mm) 1042, 1550, 2058 | 1047, 1555, 2063 | 542, 547
Channel widths (mm) 158 | 300 | 158,300

Square drainage channels:

Channel lengths (mm) 500 | 953 | 350, 800, 1000
Channel widths (mm) 500 | 500 | 350, 800, 1000

Material 1.4301 (AISI 304)

Channel profile Adhesive edge for shallow bed seals

With stainless steel cover

Non-slip R11, acid-treated in a pickling bath.

Mesh width: 23 x 23 mm

Load class: L 15 (1.5 ton.)

Sludge trap in stainless steel optional:

- **System 125** Art. # **6125SKH** Construction height 90 mm
Art. # **6125SKN** Construction height 30 mm

On stock :

Dimensions W x L x H	Article #
Linear stainless steel channel drains	
System 125	
158 x 542 x 55 mm	60 15 050
158 x 1042 x 55 mm	60 15 100
158 x 1550 x 58 mm	60 15 150
158 x 2058 x 60 mm	60 15 200
300 x 547 x 58 mm	60 30 050
300 x 1047 x 60 mm	60 30 100
300 x 1555 x 63 mm	60 30 150
300 x 2063 x 65 mm	60 30 200
Square/rectangular stainless steel channel drains	
System 125	
350 x 350 x 60 mm	60 35 035
500 x 500 x 65 mm	60 50 050
500 x 953 x 70 mm	60 50 100
800 x 800 x 60 mm	60 80 080
1000 x 1000 x 65 mm	61 00 100

Matching drain body System 125 optionally as an accessory

Drainage channels *Ferrofix Express*

Accessories



Drain bodies

with removable odour trap

Ecoguss see page 136

Practicus see page 137

Ferrofix see page 192/193

Fire-Kit Fire protection insert

Ø 76 mm,
only for drains with vertical outlet
and odour trap

Art. # **48 100**

Certification no.
Z-19.17-1719

* Certification no.
Z-19.17-1719



Quick-Fit the passage seal

for core drilling, for drain body vertical outlet

1 * with fire protection Art. # **48 990**

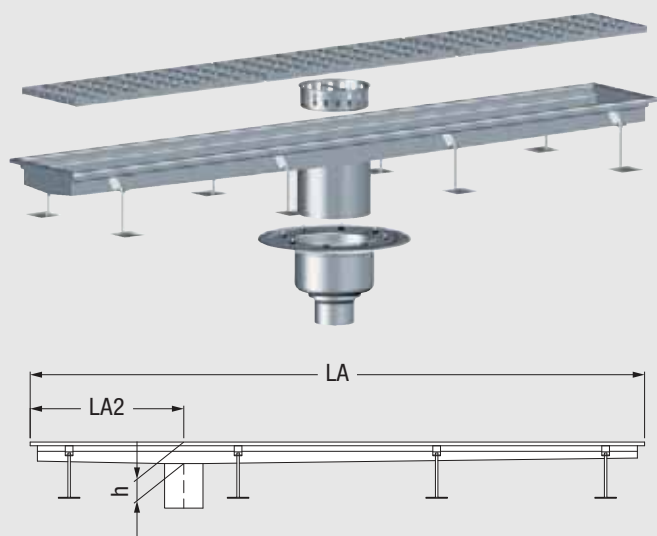
(only use in combination with *Fire-Kit* fire protection insert)

2 without fire protection Art. # **48 991**

Box channel *Ferrofix*

Products

Illustration



Article description

Box channel *Ferrofix* made of stainless steel

Material thickness 2.0 mm - acid-treated in a pickling bath, visible cover sanded, with longitudinal and transverse slopes, feet for height adjustment, with welded distance grates to secure the covers
Including drain pipes in stainless steel

Channel widths from 150, 200, 250 etc. to 1000 mm

Channel lengths from 400 mm

Channel shapes

- straight
- L-shaped
- U-shaped
- T-shaped
- Grating(s)
- Mitre joint(s)

Channel profiles

- U-profile
- Adhesive edge for shallow bed seals (compound seals)
- Tile connector to protect the tiles from breaking at the edge
- (all profiles also available with hollow-free filling of the visible covers)

Drain pipes in stainless steel

- **System 100** (Ø 110 mm)
- **System 125** (Ø 125 mm)
- **System 200** (Ø 200 mm)
- (depends on channel width)

Material - 1.4301 (AISI 304)

(Material 1.4404 or 1.4571 - AISI 316L - on request)

Matching drain body and accessories

- **System 100** on request
- **System 125** see from page 192
- **System 200** see from page 195

Sludge trap in stainless steel optional:

- **System 100** Art. # **6100 SKH** construction height 90 mm
- **System 125** Art. # **6125 SKH** construction height 90 mm
- **System 200** Art. # **6200 SKN** construction height 55 mm

All sludge traps also available in special sizes

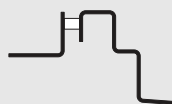
U-profile



Profile adhesive edge



Profile tile connector



Covers

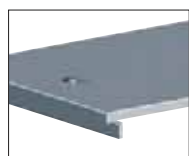
Products

Cover in stainless steel



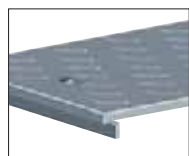
Non-slip R 11, acid-treated in pickling bath
Mesh width 23 x 23 mm or 30 x 30 mm,
class L 15 or M 125

Slab cover in stainless steel



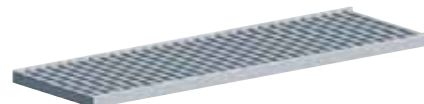
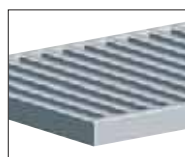
Not anti-slip, glass bead-blasted
All-round 8 mm inlet
Material thickness 10 mm, class M 125

Ribbed plate cover in stainless steel



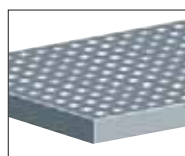
Non-slip R 11, acid-treated in pickling bath
All-round 8 mm inlet
Material thickness 10 mm, class M 125

Rod cover in stainless steel



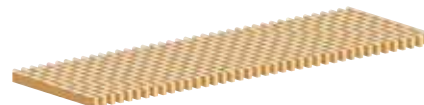
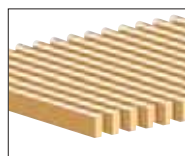
Not anti-slip, acid-treated in pickling bath
Rod clearance 18 mm, supporting member
25 x 8 mm, class M 125

Bathroom cover in stainless steel



Suitable for barefoot area
Brushed surface, perforation 8 x 8 mm
Insertion depth 25 mm, thickness 2 mm,
class K 3

Bathroom cover made of polymer



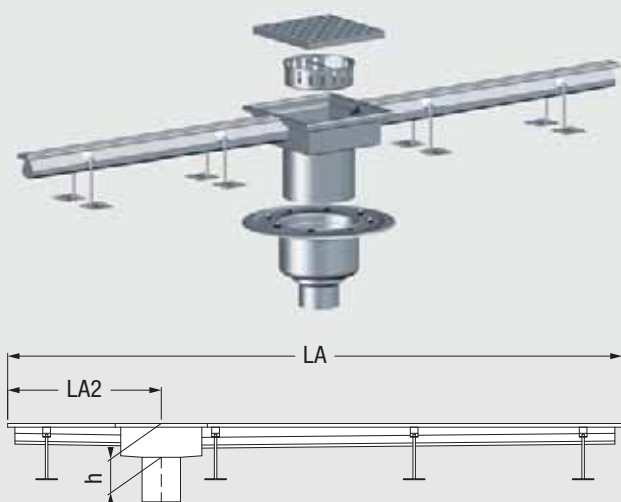
Suitable for barefoot area,
With rounded or flat upper profile
Colours white, grey, beige or yellow
(other RAL colours on request)
Insertion depth 25 mm, class K 3

Slotted channel *Ferrofix*

Products

Illustration

Article description



U-profile



Profile adhesive edge



Tile connector profile



Slotted channel *Ferrofix* made of stainless steel

Material thickness 2.0 mm - acid-treated in pickling bath, visible covers sanded, with longitudinal and transverse slopes, feet for height adjustment, including gully, drain pipes in stainless steel.

Channel widths 60 mm, 48 mm

Slot widths 20 mm (standard width), 8 mm (barefoot area)

Channel lengths from 600 mm

Channel shapes and gully

- straight with gully on the edge of the channel Type 100
- straight with gully in the middle Type 200
- L-shaped with gully in the intersection Type 250
- T-shaped with gully in the intersection Type 300
- Cross-shaped with gully in the intersection Type 400

Channel profiles

- U-profile
- Adhesive edge for shallow bed seals (compound seals)
- Tile connector to protect the tiles from breaking at the edge (all profiles also available with hollow-free filling of the visible covers)

Gully with drain pipes in stainless steel

- **System 100** (Ø 110 mm)
- **System 125** (Ø 125 mm)
- **System 200** (Ø 200 mm) (depends on the gully width)

Material - 1.4301 (AISI 304)

(Material 1.4404 or 1.4571 - AISI 316L - on request)

Matching drain body and accessories

- **System 100** on request
- **System 125** see page 192/193
- **System 200** see page 194-196

Sludge trap in stainless steel optional:

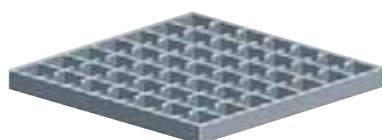
- **System 100** Art. # 6100SKH construction height 90 mm
- **System 125** Art. # 6125SKH construction height 90 mm
- **System 200** Art. # 6200SKN construction height 55 mm

All sludge traps also available in special sizes

Covers

Products

Cover
in stainless steel



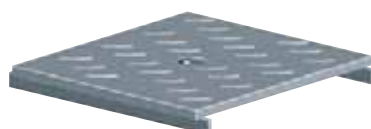
Non-slip R 11, acid-treated in pickling bath
Mesh width 23 x 23 mm or 30 x 30 mm
class L 15 or M 125

Slab cover
in stainless steel



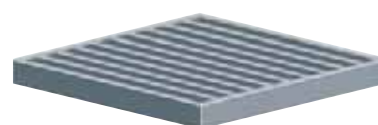
Not anti-slip, glass bead-blasted
All-round 8 mm inlet
Material thickness 10 mm, class M 125

Ribbed plate cover
in stainless steel



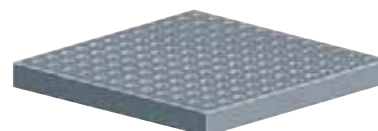
Non-slip R 11, acid-treated in pickling bath
All-round 8 mm inlet
Material thickness 10 mm, class M 125

Rod cover
in stainless steel



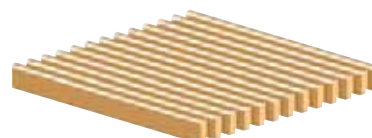
Not anti-slip, acid-treated in pickling bath
Rod clearance 18 mm, supporting member
25 x 8 mm, class M 125

Bathroom cover
in stainless steel



Suitable for barefoot area
Brushed surface, perforation 8 x 8 mm
Insertion depth 25 mm, thickness 2 mm,
class K 3

Bathroom cover
made of polymer



Suitable for barefoot area,
With rounded or flat upper profile
Colours white, grey, beige or yellow
(other RAL colours on request) Insertion depth 25 mm, class K 3



Drains for exterior installation

**Parking deck drains
System 100/125** Page **206 – 208**

Balcony drains Page **209**

**Yard and gutter drains
System 200/100** Page **210 – 215**

**Yard drains System 400
and street gullies** Page **216 – 221**

Roof drains Page **222 – 224**

Ecoguss - the new high- tech material



Heavy-duty drains for surface water drainage of car parks, industrial buildings, roofs and driveway / parking areas.



With pressure sealing flange
for twin sealing

Single piece
pipe connection drain

Parking deck drains for car parks and industrial buildings

SYSTEM ADVANTAGES / INSTALLATION

Parking deck drains in *Ecoguss*

HIGH SHATTER RESISTANCE AND HIGH LOAD RESISTANCE

Parking deck drains carry Class B rating (12.5 ton loads), (Fig. 1).

CORROSION FREE

Corrosion free material. Electrical grounding no longer necessary.

Fire-Kit

Fire and smoke protection *Fire-Kit* with approval Z-19.17-1719.
Optional for drain bodies with vertical outlet.

Quick-Fit

Quick-Fit the all-round seal for core drillings
with approval Z-19.17-1719 (Fig. 2).

STRAIGHTFORWARD INSTALLATION

Fast and easy installation due to low weight of drain.





With *Ecoguss*
upper section

Single piece
pipe connection drain

Polymer
gutter drains

Ecoguss roof drain

Polymer roof drains

Yard and gutter drains

for yard and downspouts drainage

Flat roof drains

for small and medium roof areas

SYSTEM ADVANTAGES / INSTALLATION

Yard and gutter drains in *Ecoguss* / polymer

VARIABLE UPPER SECTION

Variable upper section rotatable, tiltable and height adjustable up to 110 mm (for drains comprised of drain body and upper section).

FAST INSTALLATION

Single piece pipe connection drain with round or square support rim.

FLEXIBLE INSTALLATION

Deeper installation and lateral inlet requirement. In one step the quick and easy solution. With extension section with or without lateral inlet.

OPTIMAL PIPE ACCESS

Optimal pipe access with sludge trap removal.

Locking and removal key

Locking and removal key for *Ecoguss* drain covers with *Lock & Lift* System (Fig. 3).

SYSTEM ADVANTAGES / INSTALLATION

Ecoguss roof drains

RELIABILITY

With twin sealing system for waterproof concrete and integrated heating.

MATERIAL

High temperature-resistant materials for processing with hot bitumen acc. to DIN 18195 (Fig. 4).

ACCESSORY

Full selection of accessories to meet all installation requirements.

EASY INSTALLATION

Easy installation also upgradable after installation to emergency drainage option

Polymer roof drains

COMPACT AND HIGH PERFORMANCE

Ideal for smaller roof areas, with pressure sealing flange, also available with twin gasket system.



3

4

Parking deck drains **Ecoguss**

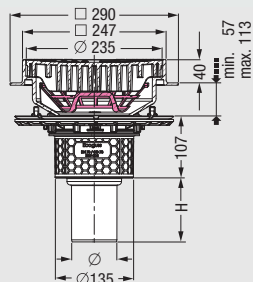
Products

Illustration and dimensioned drawing

Article description

Outer diameter Ø (mm)

Article



4.5 l/sec flow rate
Installation area 300 x 300 mm

Parking deck drain **Ecoguss**

Vertical outlet,
for connection to SML-pipe according to EN 877,
with sludge trap

□ **System 125**

**With pressure sealing flange
in stainless steel AISI 304
with square upper section
in **Ecoguss** 247 mm x 247 mm
with connection flange
and round slotted cover Ø 235 mm,
class B 125, with *Lock & Lift* System**

Core drilling only Ø 160 mm with *Quick-Fit*

Ø	78	110
H	110	110

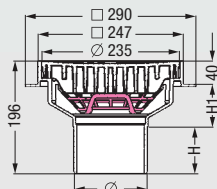


EN 1253

Accessories:

Multistop Art. # 48 500 see page 208

Single piece pipe connection drain



4.5 l/sec flow rate
Installation area 300 x 300 mm

Parking deck drain **Ecoguss**, square

Vertical outlet, for connection
to SML-pipe/plastic pipe, with sludge trap

1 **System 100:** SML-pipe

2 **System 125:** plastic pipe

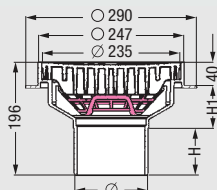
with square upper section in **Ecoguss
with connection flange 247 mm x 247 mm
and round slotted cover Ø 235 mm,
class B 125, with *Lock & Lift* System**

Ø	110	125
H	77	83
H1	79	73

Accessories:

Multistop Art. # 48 500 see page 208

Single piece pipe connection drain



4.5 l/sec flow rate
Installation area Ø 300 mm

Parking deck drain **Ecoguss**, round

Vertical outlet, for connection
to SML-pipe/plastic pipe, with sludge trap

1 **System 100:** SML-pipe

2 **System 125:** plastic pipe

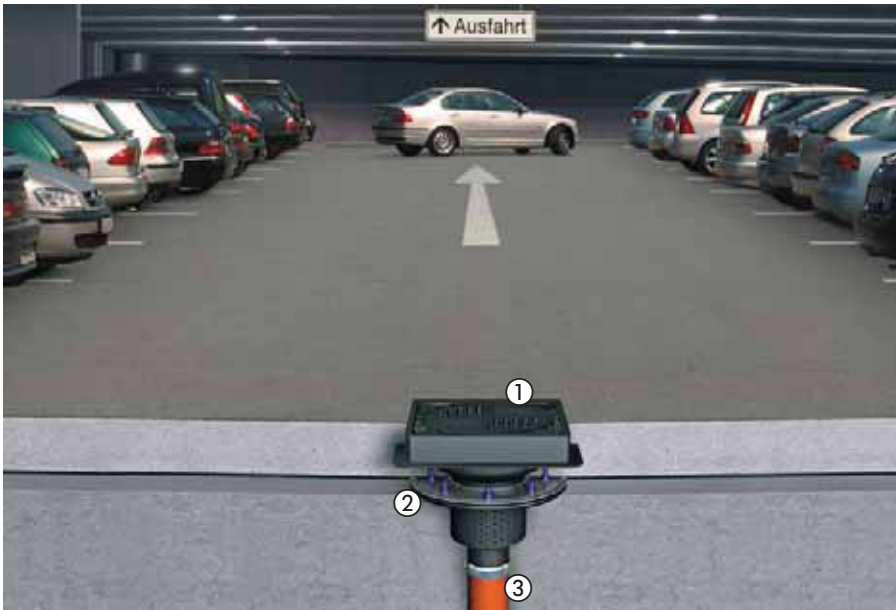
with round upper section in **Ecoguss
with connection flange Ø 247 mm
and round slotted cover Ø 235 mm,
class B 125, with *Lock & Lift* System**

Ø	110	125
H	77	83
H1	79	73

Accessories:

Multistop Art. # 48 500 see page 208

Installation example parking deck drains *Ecoguss*



The KESSEL *Ecoguss* drains are especially suitable for installation in garages and car parks. The high strength low weight body and upper section ① handles traffic loads up to 12.5 metric tons and a stainless steel waterproof sealing flange ② is available if required. The compact drain bodies are available with various outlet sizes which are designed for connection directly to SML cast iron drainage piping ③.

No-compromise fire protection

Floor drains are critical when it comes to spreading of fire in a building. *Ecoguss* drains combined with KESSEL fire protection elements meet all the requirements for fire resistance class R 120.

■ The determining factor is the Fire Resistance Class, not the building material class!

The *Ecoguss* drains with vertical outlets are designed specifically for use with the KESSEL **Fire-Kit** fire protection insert which offers the highest fire resistance class - R 120. As soon as fire enters the lower portion of the *Ecoguss* drain, the Fire-Kit expands and completely seals the opening to prevent fire and smoke from reaching the above floor.



■ **Quick-Fit** passage seal including fire protection ring for Fire Resistance Class R 120.

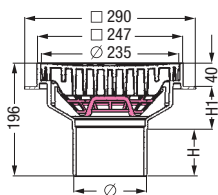
Additional security for fire protection is offered by the KESSEL **Quick-Fit** passage seal including fire protection ring. If floor drains are not poured into the concrete floor but inserted later into cored holes in the concrete slab, the space between the cored hole and the exterior of the drain body also needs to be secured against fire. In the case of a fire, the fire protection ring expands and completely seals the opening between the exterior of the drain body and the cored hole - preventing fire and smoke from reaching the above floor.



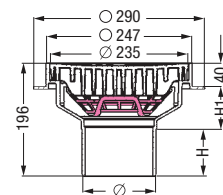
Professional advantages

- **Metallic composite material**
Metallic properties but still non corrosive and non-conductive (**no electrical grounding necessary!**)
- **Honeycomb structure** for perfect concrete bonding
- **High temperature-resistant materials**
Briefly up to 400°C, for processing with hot bitumen acc. to DIN 18195
- **With SML pipe connection**
Connection to SML pipe according to EN 877 in Ø 58, 78, 110 and Ø 83!
No transition pieces any more!
- **Sound insulation**
 - Sound-absorbent material
 - For increased sound insulation to DIN 4109 < 30 dB (A)
- **Variable upper section**
rotatable, tiltable and height adjustable
- **Chemical resistance**
Extremely high acid/alkali resistance for chemically-polluted wastewater.
- **High discharge rates**
- **With Lock & Lift System**
- Thermal insulation insert available – ready to install
- **High shatter resistance and high load resistance**
Parking deck drains carry class B rating (12.5 ton loads).

Upper section with connection flange



Ø	110	125
H	77	83
H1	79	73



in Ecoguss

with square upper section □ 247 mm
and round slotted cover Ø 235 mm, in **Ecoguss**,
class B 125, with *Lock & Lift* System,
with sludge trap.

System 100: SML-pipe
System 125: plastic pipe

Ø 110 Art. # 48 501
Ø 125 Art. # 48 502

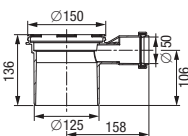
Can be used as single piece pipe connection drain

with round upper section □ 247 mm
and round slotted cover Ø 235 mm, in **Ecoguss**,
class B 125, with *Lock & Lift* System,
with sludge trap.

System 100: SML-pipe
System 125: plastic pipe

Ø 110 Art. # 48 503
Ø 125 Art. # 48 504

Accessories



Extension section

in PP, with lip seal
without lateral inlet Art. # 48 987
with lateral inlet Art. # 48 989

Multistop

rodent, insect,
foam and odour stop
Art. # 48 500

Hair filter

made of polymer
Art. # 48 700

Odour trap

Sealing water height 50 mm
according to norm
Art. # 48 600

Certification no.
Z-19.17-1719



* Certification no.
Z-19.17-1719



Fire-Kit Fire protection insert

Only for **Ecoguss** drains with vertical
outlet and odour trap Art. # 27 169
Ø 58/78/83 Art. # 48 099
Ø 110 Art. # 48 100

Bell-shaped odour trap insert

in PP,
sealing water height 50 mm
Art. # 27 169

Quick-Fit the passage seal

the all-round seal for core drillings
for **Ecoguss**-drain body, vertical outlet
without fire protection
Art. # 48 991
* with fire protection
Art. # 48 990
(only use in combination with *Fire-Kit* fire protection insert)

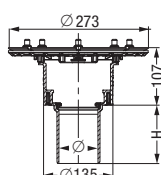
Insulating body

fits all **Ecoguss** drain
bodies with vertical
outlet
Art. # 48 952

Drain body Ecoguss

4.5 l/sec flow rate
Sealing water height 50 mm

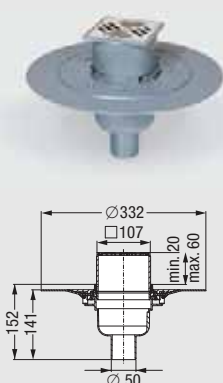
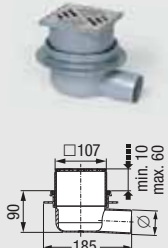
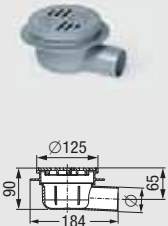
Ø	58	78	83	110
H	100	110	110	110

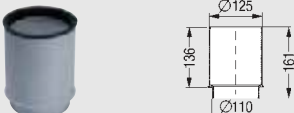



Ecoguss without odour trap

Vertical outlet, with pressure sealing flange,
high temperature resistant

Ø 78 Art. # 48 879
Ø 83 Art. # 48 889
Ø 110 Art. # 48 812

Balcony drains			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>0.9 l/sec flow rate Installation area 180 x 180 mm</p>	Balcony drain in ABS Frost-proof outlet. With fixed lip seal. With glue flange and counter flange.		
	1 Lateral outlet 2 Vertical outlet With upper section in ABS with slotted cover 100 x 100 mm in stainless steel AISI 304, class K3 (able to withstand loads up to max. 300 kg).	1 Ø 50 2 Ø 50	40 151.90 40 251.90
 <p>0.9 l/sec flow rate Installation area 220 x 180 mm</p>	Balcony drain in ABS Frost-proof outlet. With fixed lip seal. With connection flange.	Ø 50 Ø 75	40 151.20 40 171.20
 <p>0.9 l/sec flow rate Installation area 220 x 180 mm</p>	Balcony drain in ABS Frost-proof outlet. With connection flange.	Ø 50 Ø 75	40 152.71 40 172.71

Balcony drains			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Extension section in ABS, with lip seal	-	27 146
	Multistop rodent, insect, foam and odour stop	-	43 500

Yard drains in *Ecoguss* / polymer

System 200 / 100

Yard drains System 200			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>4.5 l/sec flow rate</p>	Yard drains <i>Ecoguss</i> 200 <input type="checkbox"/> Lateral outlet 2.5° <input type="checkbox"/> Vertical outlet with drain body made of polymer and upper section made of <i>Ecoguss</i> , upper section with square support rim, class B 125, with <i>Lock & Lift</i> System, with sludge trap	Ø 110 Ø 110	67 923 B 67 922 B
 <p>4.5 l/sec flow rate</p>	System 200 Yard drain <input type="checkbox"/> Lateral outlet 2.5° <input type="checkbox"/> Vertical outlet with drain body made of polymer, upper section with support rim, lotted cover class ... With lip seal and protective cover for use during construction. Weight: Class A 15 approx. 4.2 kg. Accessories: Sludge trap Art. # 67 300, odour-trap (consider frost free installation depth) Art. # 27 171 see page 214/215	Ø 110 Ø 110	67 020.30 67 060.30

Yard drains System 100			Products						
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #						
 <p>4.5 l/sec flow rate</p>	Yard drain <i>Ecoguss</i> pipe connection drain - square Vertical outlet <input type="checkbox"/> upper section with square support rim in <i>Ecoguss</i> and round slotted cover Ø 235 mm, class B 125, with <i>Lock & Lift</i> System, with sludge trap Accessories: <i>Multistop</i> Art. # 48 500 see page 208	Ø 110	67 110 B						
 <p>4.5 l/sec flow rate</p>	Yard drain <i>Ecoguss</i> pipe connection drain - round Vertical outlet <input type="checkbox"/> upper section with round support rim in <i>Ecoguss</i> and round slotted cover Ø 235 mm, class B 125, with <i>Lock & Lift</i> System, with sludge trap <table><tr><td>Ø</td><td>110</td></tr><tr><td>H</td><td>77</td></tr><tr><td>H1</td><td>79</td></tr></table> Accessories: <i>Multistop</i> Art. # 48 500 see page 208	Ø	110	H	77	H1	79	Ø 110	67 111 B
Ø	110								
H	77								
H1	79								
 <p>1.6 l/sec flow rate</p>	Yard drain <i>Alrondo</i> made of polymer, vertical outlet With integrated odour trap. <input type="checkbox"/> cover plate 200 x 200 mm with round slotted cover Ø 140 mm made of polymer, screwed Can be driven over by vehicles of up to 2 ton.	Ø 110	37 287 S						

Installation example yard drains System 200



Ecoguss yard drains assure an efficient surface water drainage of outdoor areas. Included is the upper section and cover ① which handles vehicle traffic loads up to 12.5 metric tons. An optional odour trap ② can be used to keep unpleasant sewer odours where they belong.

Installation example yard drains System 100



Ecoguss yard drains assure an efficient surface water drainage of outdoor areas. Included is the upper section and cover ① which handles vehicle traffic loads up to 12.5 metric tons. In the case that upper section and cover are used alone (without being connected to a drain body) it is important that voids are properly filled with concrete ② to provide the required support. The integrated sludge basket ③ is easily accessible for cleaning via the *Lock & Lift* cover removal and locking system ④.

Professional advantages

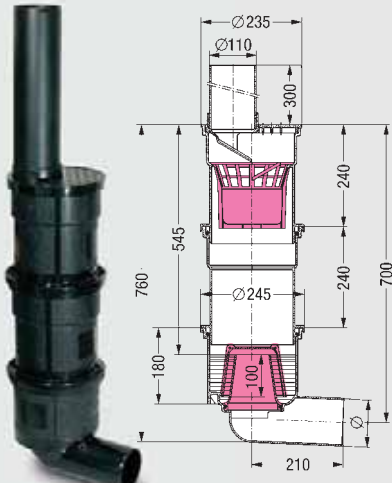
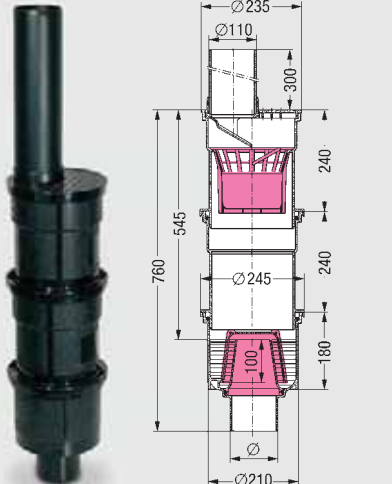
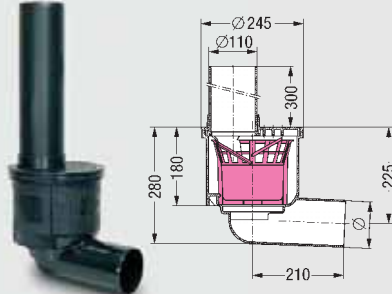
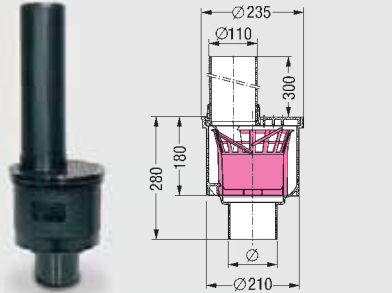
- **Vertically adjustable upper section** for stepless installation in concrete slabs: rotatable, tiltable and vertically adjustable up to 110 mm
- **Deeper installation and lateral inlet requirement.** In one step the quick and easy solution. With extension section Art. # 67 500 and extension Art. # 67 600 with Ø 110 lateral inlet.
- **Frost free installation depth up to 1020 mm** with extension section Art. # 67 500.
- **Locking and removal key** for *Ecoguss* drain covers with *Lock & Lift* System. Art. # 67 007.

Professional advantages

- **Multistop** as an odour, foam, rodent and insect protection (Art. # 48 500) available as accessory.
- **Locking and removal key** for *Ecoguss* drain covers with *Lock & Lift* System Art. # 67 007.
- **Compact and low weight** alternative to cast iron drains
- **Single piece pipe connection drain**
- **With sludge trap**

Gutter drains made of polymer

System 200

Gutter drains System 200			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>2.8 l/sec flow rate</p>	<p>Gutter drain made of polymer, lateral outlet 2.5° For frost-free depth 545 mm Rain inlet cover with protective pipe made of polymer. With removable bell-shaped odour trap, two extension sections, sludge trap. With wall securing device.</p>	Ø 110	67 970
 <p>2.8 l/sec flow rate</p>	<p>Gutter drain made of polymer, vertical outlet For frost-free depth 545 mm Rain inlet cover with protective pipe made of polymer. With removable bell-shaped odour trap, two extension sections, sludge trap. With wall securing device.</p>	Ø 110	67 960
 <p>4.5 l/sec flow rate</p>	<p>Gutter drain made of polymer, lateral outlet 2.5° Rain inlet cover with protective pipe in synthetic material. With sludge trap. With wall securing device.</p>	Ø 110	67 945
 <p>4.5 l/sec flow rate</p>	<p>Gutter drain made of polymer, vertical outlet Rain inlet cover with protective pipe in synthetic material. With sludge trap. With wall securing device. Without wall securing device.</p>	Ø 110 Ø 110	67 940 67 997

Gutter drains made of polymer System 200

Installation example gutter drains System 200



Rainwater and gutter drains transfer rainwater from downspouts ① from buildings into underground drainage piping ②. Light weight, corrosion free material and solid construction of the polymer material represent a clear alternative to standard concrete drains. Extension sections ③ are available if a deeper installation is required to reach frost free zones. To prevent debris from entering the sewer a sludge basket ④ is included with the system. Removal of the sludge basket for cleaning purposes is quick and simple through the removal drain covers ⑤. In addition, an optional odour trap ⑥ is available to prevent sewer gases from escaping through the drain.

Professional advantages

- **Optimal pipe access**
with sludge trap
removal



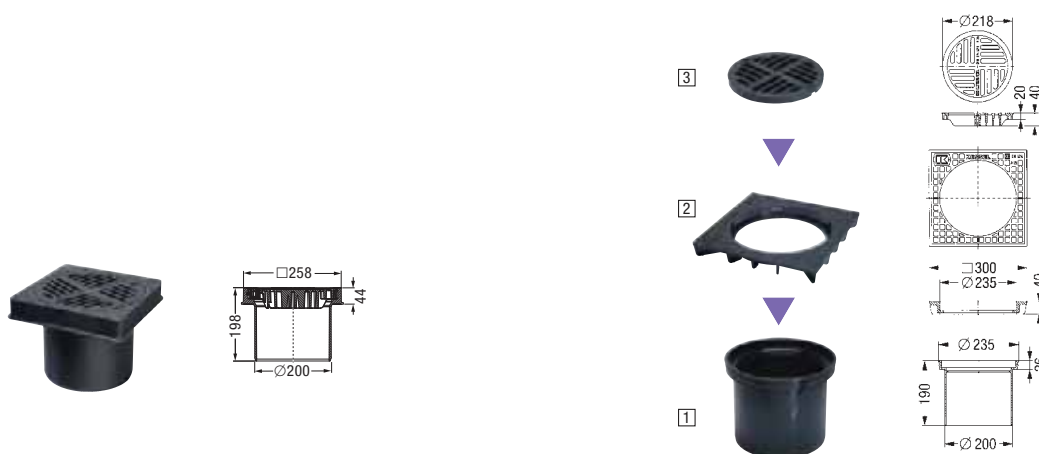
- **Lateral Ø 110 inlet**
possible with use of extension section
Art. # 67 600.

- **Convenient wall
mount system**



- **Frost free installation depths**
with Art. # 67 500 or Art. # 67 600
(with lateral inlet) available as accessory

Upper sections for yard drains



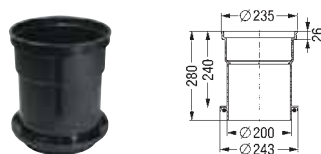
in *Ecoguss*

upper section with support rim \square 250 mm and round slotted cover \varnothing 235 mm, in *Ecoguss*, class B 125, with *Lock & Lift* System, height adjustable from 40 - 150 mm
Art. # 67 985

in polymer, consists of...

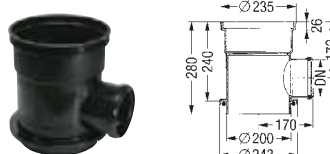
- 1 Upper section height adjustable from 40 - 150 mm
Art. # 67 400
- 2 Support rim \square 300 mm, class A 15 / L 15
Art. # 27 180
- 3 Slotted cover \varnothing 218 mm, class A 15 / L 15
Art. # 27 173

Accessories for yard drains and gutter drains



Extension section

made of polymer, installation height 240 mm
Art. # 67 500



Extension section

made of polymer, with lateral inlet, installation height 240 mm
Art. # 67 600



Sludge trap

in PE-HD
Art. # 67 300



Multistop 200

odour, foam, rodent and insect stop for article 67 985, 67 923 B, 67 922 B
Art. # 48 520



Lip seal

Art. # 27 140

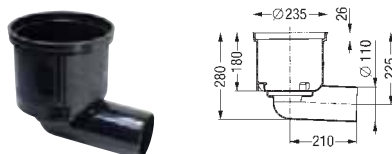


Lip seal

Non-slip mounting
Art. # 27 141

Drain body for yard drains and gutter drains

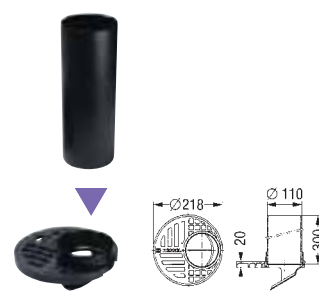
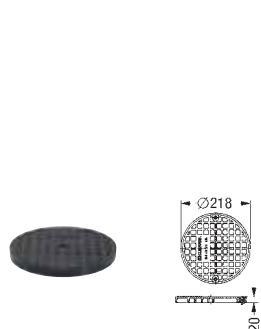
4.5 l/sec flow rate



Drain body made of polymer

Lateral outlet 2.5°, without odour trap
 \varnothing 110 Art. # 67 000

Upper sections for gutter drains



in polymer

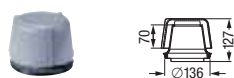
Cover plate Ø 218 mm
class A 15 / L 15,
sealed with respect to surface water,
Art. # 67 775

in polymer

Rain inlet cover Ø 218 mm
with protective pipe Ø 110
Art. # 67 750

in polymer

Rain inlet slotted cover Ø 218 mm,
for additional surface drainage
with protective pipe Ø 110
Art. # 67 700

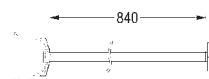
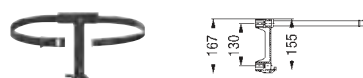


Bell-shaped odour trap insert

in PP, removable,
sealing water height 70 mm
Art. # 27 170

Bell-shaped odour trap insert

in PP, removable,
sealing water height 100 mm
Art. # 27 171



Wall securing device

for gutter drains
Art. # 67 800

Lifting mechanism

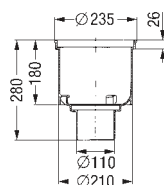
for removing odour trap
Art. # 850 144



Locking and removal key


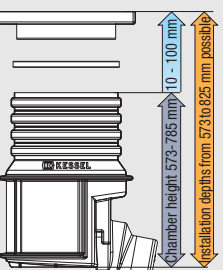

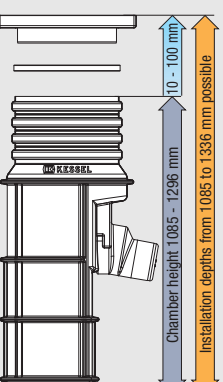
for **Ecoguss** drain covers
with *Lock & Lift* System.
Art. # 67 007

4.5 l/sec flow rate



Drain body made of polymer

Vertical outlet, without odour trap
Ø 110 Art. # 67 040

Street gullies Ø 400			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>1</p> <p>Standard manhole cover on-site</p> <p>Upper section</p> <p>Lip seal as accessories</p> <p>Inspection chamber</p> <p>Accessories: Rodent protection flap</p> 	<p>Street gullies Ø 400 in polyethylene</p> <p>For underground installation</p> <p>Installation depth (D) 573 mm to 785 mm (Height without manhole cover),</p> <p>with monolithic structure, resistant against aggressive wastewater, frost and de-icing salts,</p> <p>with outlet Ø ... suitable for connection of PVC pipe according to EN 1401-1 and PE-HD pipe according to EN 12666-1</p> <p>1 with lateral outlet couplings Ø 160; 10°</p> <p>With upper section 50 x 50 cm</p> <p>With upper section 30 x 50 cm</p> <p>with lateral outlet couplings Ø 160; 0°</p> <p>With upper section 50 x 50 cm</p> <p>With upper section 30 x 50 cm</p>	<p>Ø 160</p> <p>Ø 160</p> <p>Ø 160</p> <p>Ø 160</p>	<p>81 10 10</p> <p>81 10 11</p> <p>81 10 40</p> <p>81 10 41</p>
	<p>2 with lateral outlet couplings Ø 160/200/250; 2°</p> <p>With upper section 50 x 50 cm</p> <p>With upper section 30 x 50 cm</p> <p>Upper sections can be used with standard concrete / cast iron frames and load class D 400 covers.</p>	<p>Ø 160/200/250</p> <p>Ø 160/200/250</p>	<p>81 10 30</p> <p>81 10 31</p>
 <p>Standard manhole cover on-site</p> <p>Upper section</p> <p>Lip seal as accessories</p> <p>Inspection chamber</p> <p>Accessories: Rodent protection flap</p> 	<p>Street gullies with wet sludge trap Ø 400 in polyethylene</p> <p>For underground installation</p> <p>Installation depth (D) 1085 mm to 1296 mm (Height without manhole cover),</p> <p>with monolithic structure, resistant against aggressive wastewater, frost and de-icing salts,</p> <p>with outlet Ø 160 suitable for connection of PVC pipe according to EN 1401-1 and PE-HD pipe according to EN 12666-1</p> <p>with lateral outlet couplings Ø 160; 10°</p> <p>With upper section 50 x 50 cm</p> <p>With upper section 30 x 50 cm</p> <p>with lateral outlet couplings Ø 160; 0°</p> <p>With upper section 50 x 50 cm</p> <p>With upper section 30 x 50 cm</p>	<p>Ø 160</p> <p>Ø 160</p> <p>Ø 160</p> <p>Ø 160</p>	<p>81 10 20</p> <p>81 10 21</p> <p>81 10 60</p> <p>81 10 61</p>
	<p>Upper sections can be used with standard concrete / cast iron frames and load class D 400 covers.</p>		

Street gullies in polyethylene
Ø 400

Installation example street gullies Ø 400



The system used successfully in standard inspection chambers is now being used in KESSEL street gullies (road drains), too: telescopic upper sections ① decouple the traffic load from the chamber to the surrounding soil and thus allow the use of weight-optimised polymer chambers. Their weight of only between 10 kg and 15 kg depending on the chamber type makes them easy to handle and on-site installation is child's play. The monolithic chamber ② guarantees absolute leak-tightness from the base to the very top and its PE material makes it resistant to ageing, corrosion, frost and de-icing salt. KESSEL street gullies have a unique innovation for the system, a rat protection flap ③ that protects servicing staff from disagreeable encounters with rodents.

Professional advantages

- **Telescopic adjustable upper section**
adjust to subsequent soil subsidence.
- **Low weight**
For easy transport and low-cost installation.
- **Made of PE-LLD**
Quality material for sewage draining. Shock and break-proof. Corrosion-free and impact resistant (resistant to de-icing salt).
- **Absolutely leak-free, made from one piece** through monolithic design.
- **For load class C 250 / D 400**
- **Easy attachment of inlets ...**
Delivered without inlet: **Inlets can be drilled as required on site in the flow direction on the left and right-hand side at angles of up to 90°.** Hole saws and gaskets for inlet pipes available upon request.
- **Flexible shortening of the inspection chamber**
- **The only gully with rat protection flap!**
Available as accessory.

Street gullies Ø 400



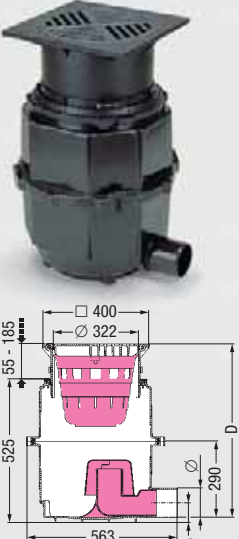

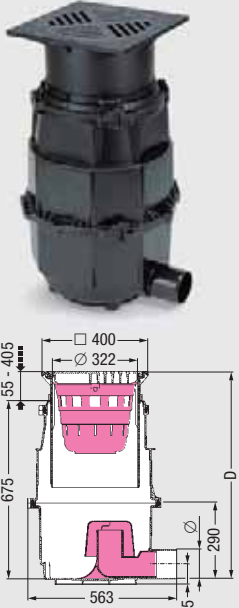

Accessories

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Lip seal for article # 81 10 10, 81 10 11, 81 10 40, 81 10 41, 81 10 20, 81 10 21, 81 10 60, 81 10 61, 81 10 30, 81 10 31	-	81 10 51
	Rodent protection flap for article # 81 10 10, 81 10 11, 81 10 40, 81 10 41, 81 10 20, 81 10 21, 81 10 60, 81 10 61, 81 10 30, 81 10 31	-	81 10 50

Yard drains in polyethylene System 400

Yard drains System 400 For higher load classes

Products

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>4.5 l/sec flow rate Installation area 585 x 535 mm</p>	<p>Yard drain System 400 in polyethylene, lateral outlet 2.5°, with sludge trap</p> <p>For installation depth (D) from 380 to 510 mm, water-tight, resistant to aggressive wastewater. With fuel-resistant gaskets.</p> <p><input type="checkbox"/> Upper section with slotted cover, class A made of polymer class B / D in cast iron according to EN 124 for continuous height and level adjustment.</p> <p>Weight: Class A approx. 10 kg Class B approx. 12.5 kg Class D approx. 20 kg</p> 	<p>Ø 110 Ø 110 Ø 110</p> <p>Ø 160 Ø 160 Ø 160</p>	<p>851 100 A 851 100 B 851 100 D</p> <p>851 150 A 851 150 B 851 150 D</p>
 <p>4.5 l/sec flow rate Installation area 585 x 535 mm</p>	<p>Yard drain System 400 in polyethylene, lateral outlet 2.5°, with odour trap and sludge trap</p> <p>For installation depth (D) from 580 to 710 mm, water-tight, resistant to aggressive wastewater. With fuel-resistant gaskets.</p> <p><input type="checkbox"/> Upper section with slotted cover, class A made of polymer class B / D in cast iron according to EN 124 for continuous height and level adjustment.</p> <p>Weight: Class A approx. 20 kg Class B approx. 23 kg Class D approx. 30 kg</p> 	<p>Ø 110 Ø 110 Ø 110</p> <p>Ø 160 Ø 160 Ø 160</p>	<p>851 101 A 851 101 B 851 101 D</p> <p>851 151 A 851 151 B 851 151 D</p>
 <p>4.5 l/sec flow rate Installation area 585 x 535 mm</p>	<p>Yard drain System 400 in polyethylene, lateral outlet 2.5°, with odour trap and sludge trap</p> <p>For installation depth (D) from 730 to 1080 mm, water-tight, resistant to aggressive wastewater. With fuel-resistant gaskets.</p> <p><input type="checkbox"/> Upper section with slotted cover, class A made of polymer class B / D in cast iron according to EN 124 for continuous height and level adjustment.</p> <p>Weight: Class A approx. 45 kg Class B approx. 47.5 kg Class D approx. 55 kg</p> 	<p>Ø 110 Ø 110 Ø 110</p> <p>Ø 160 Ø 160 Ø 160</p>	<p>851 102 A 851 102 B 851 102 D</p> <p>851 152 A 851 152 B 851 152 D</p>

Installation example yard drains System 400



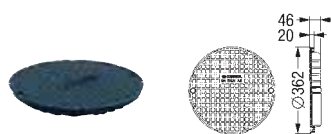
System 400 drains assure an efficient surface water drainage of outdoor areas and with their low weight, corrosion free material and solid construction they represent a clear alternative to standard concrete drains. System 400 drains ① are available with load class B or D covers meaning they can be used in all traffic areas up to 40.0 metric tons. Extensions sections are available if a deeper installation is required to reach frost free zones. To prevent debris from entering the sewer a sludge basket ② is included with the system. In addition, an optional odour trap is available to prevent sewer gases from escaping through the drain.

Professional advantages

- **Variable upper section**
rotatable, inclinable and height adjustable
- Side inlets up to a nominal width of $\varnothing 160$ via drilling on the side, can be connected very easily and quickly.
- **Optimum cleaning** of the pipes by removing the odour trap/sludge trap
- Can be adapted to the level of the floor
- Can be expanded and combined using supplementary parts
- Fuel resistant
- Can bear lorries weighing up to 40 ton.

Yard drains in polyethylene System 400

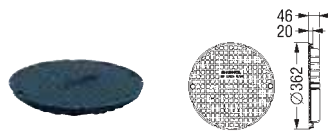
Covers



Cover plate in polymer

Class A

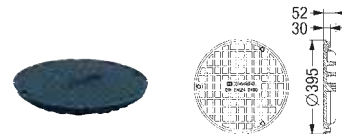
Art. # 850 132



Cover plate in cast iron

Class B

Art. # 850 131

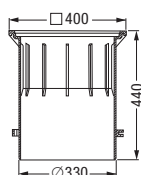


Cover plate in cast iron

Class D, for article # 850 121

Art. # 850 136

Upper sections



Class A, B

continuously height adjustable,
with clamping ring

Art. # 850 120

Accessories



Extension section in polyethylene

Art. # 850 101

Connecting wedges, 4 pieces
Art. # 850 111



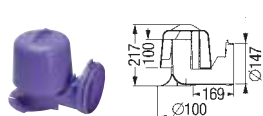
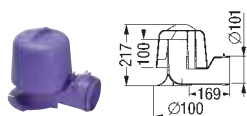
Transition sections 450

Art. # 850 102



Transition sections 360

Art. # 850 103

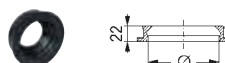


Odour traps

Ø 110 Art. # 850 141

Ø 160 Art. # 850 142

only for article # 850 009, 850 010



Gaskets for pipe conduits

Ø 50 Art. # 850 114

Ø 75 Art. # 850 116

Ø 110 Art. # 850 117

Ø 125 Art. # 850 118

Ø 160 Art. # 850 119

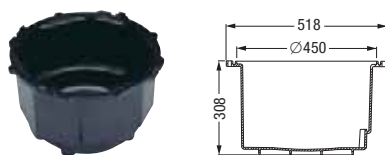


Pressure sealing flange

for upper section

Art. # 83 021

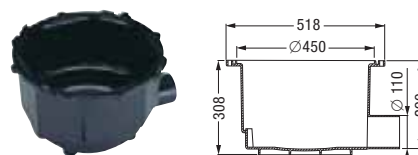
Drain bodies



Drain body in polyethylene

□ closed

Art. # 850 008



Drain body in polyethylene

□ with outlet

Ø 110 Art. # 850 009

Ø 160 Art. # 850 010



Slotted cover in polymer

Class A

Art. # 850 134



Slotted cover in cast iron

Class B

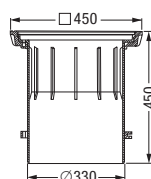
Art. # 850 135



Slotted cover in cast iron

Class D, for article # 850 121

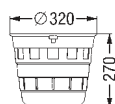
Art. # 850 137



Class D

continuously height adjustable,
with clamping ring

Art. # 850 121



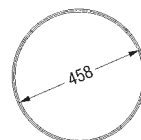
Sludge trap in polymer

Art. # 850 115



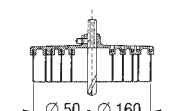
Profiled gasket 450

Art. # 850 113



Profiled gasket 360

Art. # 850 112



Hole saw

for drilling lateral surfaces for inlets and outlets

Ø 50, 75, 110, 125 and 160

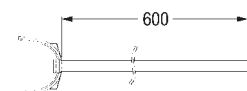
(Saw blade holder Ø = 190 mm)

Art. # 50 100

Elastomer waterproof membrane

in NK/SBR

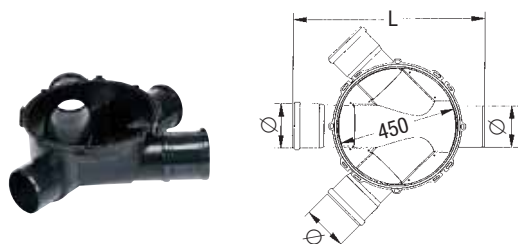
Art. # 83 022



Lifting mechanism

for removing odour trap

Art. # 850 143



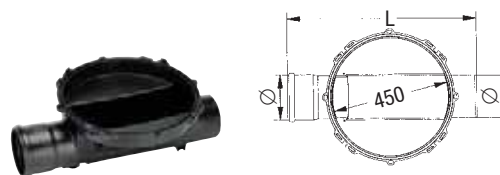
Drain body in polyethylene, open channel passage

Inlet/Outlet Ø 160, L=726 mm, H=259 mm, Art. # 850 001

Inlet Ø 160/Outlet Ø 200, L=746 mm, H=259 mm, Art. # 850 002

Inlet/Outlet Ø 200, L=756 mm, H=304 mm, Art. # 850 003

Inlet Ø 200/Outlet Ø 250, L=771 mm, H=304 mm, Art. # 850 004



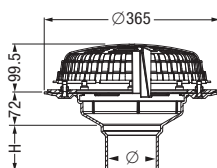
Drain body in polyethylene, open channel passage

Inlet/Outlet Ø 160, L=726 mm, H=259 mm, Art. # 850 005

Inlet/Outlet Ø 200, L=756 mm, H=306 mm, Art. # 850 006

Inlet/Outlet Ø 250, L=790 mm, H=344 mm, Art. # 850 007

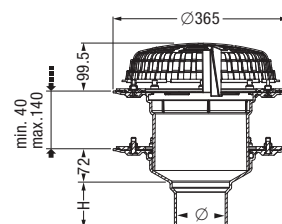
Flat-roof drains in *Ecoguss*



EN 1253/DIN 1986-100



Ø	75	110	125
H	96.5	93	93



Installation area Ø 227 mm

Installation area Ø 227 mm

with single seal

with pressure sealing flange in *Ecoguss*
and pebble trap

☐ without heating

Ø 75 Art. # 48 370

Ø 110 Art. # 48 310

Ø 125 Art. # 48 312

☐ with heating

Ø 75 Art. # 48 370.03

Ø 110 Art. # 48 310.03

Ø 125 Art. # 48 312.03

with double seal for installation in waterproof concrete

upper section in *Ecoguss* Ø 200 and pebble trap
with pressure sealing flange in *Ecoguss* and counter flange

☐ without heating

Ø 75 Art. # 48 370.01

Ø 110 Art. # 48 310.01

Ø 125 Art. # 48 312.01

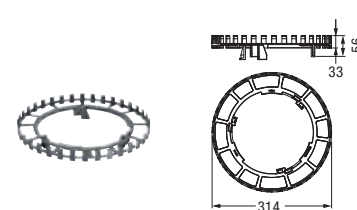
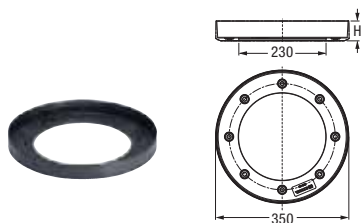
☐ with heating

Ø 75 Art. # 48 370.02

Ø 110 Art. # 48 310.02

Ø 125 Art. # 48 312.02

Accessories



Damming ring in *Ecoguss*

for drainage safety

☐ H = 35 mm

Ø 75 Art. # 48 335

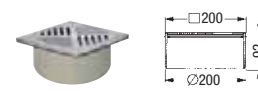
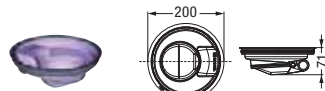
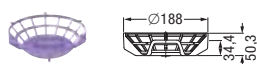
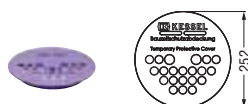
Ø 110 Art. # 48 335

☐ H = 45 mm

Ø 125 Art. # 48 345

Spacer ring in *Ecoguss*

to adapt pebble trap to height of pebbles
Art. # 48 302



Temporary protective cover

in PP, with drainage function
Art. # 45 301

Leaf trap

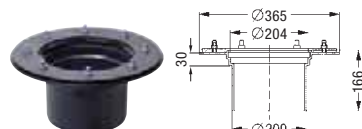
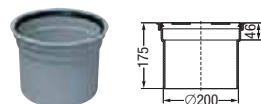
in PP
Art. # 48 300

Multistop 200

odour, foam, rodent and insect stop
Only in combination with *Ecoguss*
roof drains with twin sealing system
Art. # 48 520

Upper section

with support rim and slotted cover
200 x 200 mm
stainless steel AISI 304, screwed
Art. # 48 954



Extension section

in PP, with lip seal
Art. # 48 988

Extension section in *Ecoguss*

with pressure sealing flange
and counter flange
for installation in waterproof
concrete H = 166 mm
Art. # 48 958

Insulating pieces

flame proof, class A 1
for flat-roof drain *Ecoguss*

☐ without heating

Art. # 48 352

☐ with heating

Art. # 48 353

☐ Extension section Ø 200

Art. # 48 354

Reinforcement plate

in galvanized steel,
for roof applications

for flat-roof drain *Ecoguss*

Plate size: 600 x 600 mm

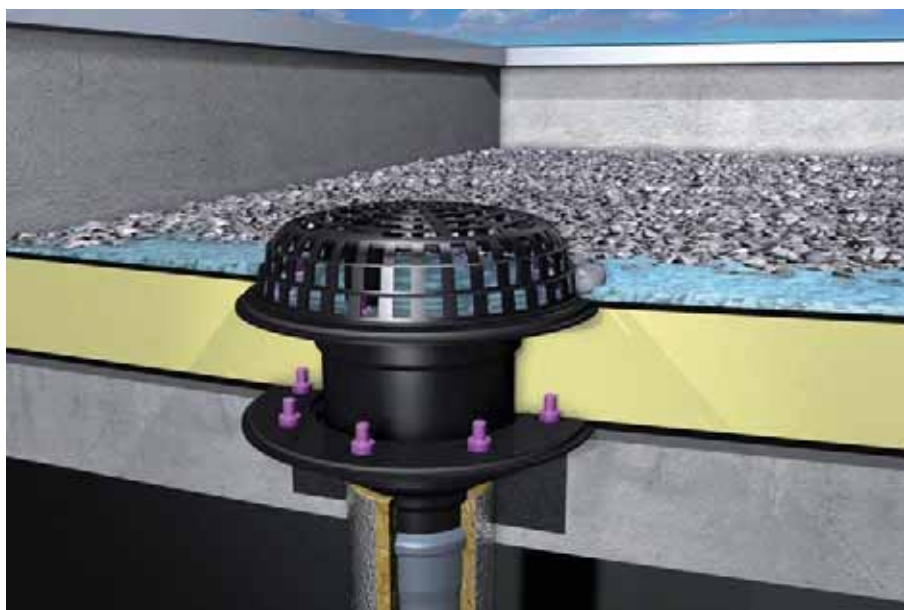
Cut-out: 270 mm

Material thickness: 1.5 mm

Art. # 48 351

Flat-roof drains in *Ecoguss* System 200

Installation example *Ecoguss* roof drains



Flat roof drains made of *Ecoguss* are available in the diameters Ø 75, Ø 110 and Ø 125 mm. In addition to a practical leaf trap (basket) to prevent blockages, flat roof drains are also available as an option in heated versions to allow proper function during winter.

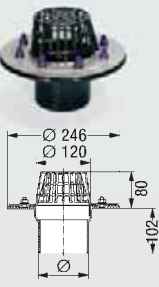
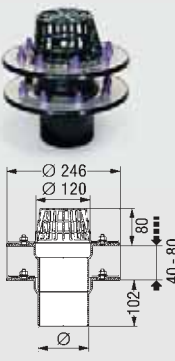
Professional advantages

- ***Ecoguss* the new high-tech material**
- **High flow performance** - exceeds regulatory norm requirements
- **High temperature resistance** - up to 250°C
- **Easy installation** - also upgradable after installation to emergency drainage option
- Full selection of accessories to meet all installation requirements
- Drain body available in Ø 75, Ø 110 and Ø 125
- **Lock & Lift System** - no tools required
- **With integrated heating** - low energy consumption
- **Multistop 200** as an odour, foam, rodent and insect stop. Waterless odour trap.

Installation suggestion with emergency drainage



- Bituminous waterproofing membrane
- 120 mm heating insulation
- Bituminous waterproofing membrane
- Sloped screed layer
- 180 mm thick concrete floor slab

Flat-roof drains			Products
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 <p>4.5 l/sec flow rate Installation area 180 x 180 mm</p>	Roof drain in PP, vertical outlet <input type="checkbox"/> with pressure sealing flange with counter flange in stainless steel AISI 304, with leaf trap.	Ø 110	45 950
 <p>4.5 l/sec flow rate Installation area 180 x 180 mm</p>	Roof drain in PP, vertical outlet <input type="checkbox"/> with twin sealing flanges, with pressure sealing flange with counter flange in stainless steel AISI 304, with leaf trap.	Ø 110	45 970

Installation example flat-roof drains



Flat roof drains made of polymer are available in the diameter Ø 110 mm. In addition to a practical leaf trap (basket) to prevent blockages, flat roof drains are also available as an option in heated versions to allow proper function during winter.

Professional advantages

- **With practical leaf trap** (basket) to prevent blockages
- **Available as heated version**



5 Separators

**Grease separators
for free standing installation**

Page **234 – 249**

**Grease separators
for underground installation**

Page **251 – 258**

**Oil-, Fuel- and
Coalescence separators**

Page **259 – 268**

Grease separators



Reasons for installing a grease separation system

Operations from small restaurants to large scale food processing plants disposing fats, oils and grease (FOGs) into public wastewater drainage systems are becoming an increasing concern to industry, government and environmental agencies.

Wastewater travels a long distance from its original source to the wastewater treatment facilities. During this time large amounts of grease and food wastes build up in the drainage pipe systems leading to operational and public effects:

...Operational effects

One of the most severe drainage problems in food processing facilities is the build up of grease layers within the drainage system leading to negative effects, such as increased odour emissions, reduced efficiency of the drainage system, additional maintenance costs, pipe blockage or even potential flooding.



Avoiding a pipe
blockage



Prevention
of corrosion and
odour build-up

...Public effects

FOGs also affect public wastewater streams by causing sewer blockage and reducing the efficiency of public sewage plants. This leads to additional costs for maintenance and repair.



Effects on
wastewater
treatment facilities

Water is one of our most precious resources and is not available in unlimited quantities. For this reason, contaminated wastewater from kitchens wastewater must be pretreated and cleaned with the aid of appropriate separator systems before it is discharged to the public sewer system.

KESSEL offers a wide range of innovative polymer separators for different areas of application and wastewater quantities:

Grease separators

Grease separators for free-standing installation

Grease separators for disposal via a disposal truck (full disposal) are used wherever medium to large quantities of grease occur. The entire tank contents are emptied at regular intervals.

Grease separators for partial disposal (self disposal) are ideal for all areas where smaller quantities of sludge and grease are created, or where access for a disposal truck is limited (for example mountain huts, ships, etc.) or where it is not possible to install a disposal line. Grease and sludge are disposed of separately in manageable polymer barrels.

Grease separators for underground installation

If indoor space is limited, the grease separator system must be installed outside the building.

Individual Solutions

Thanks to the knowledge and possibilities in the field of polyethylene technology KESSEL is not only able to manufacture series products, but also special solutions in accordance with project-specific requirements.

For a clean environment

When to use a grease separator?

Grease separators should be installed in all locations where greases and oils from plant or animal origin are required to be removed from the wastewater stream. This applies to commercial and industrial applications, for example:

- Butchers, meat and sausage factories
- Pre-prepared meal production
- Slaughterhouses and meat preparation facilities
- Soap / stearin production plants
- Restaurants and fast food shops
- Fish production facilities
- Cooking oil refineries, butter / margarine production
- Frying facilities / nut roasting factories
- Cafeterias in commercial buildings, hospitals, universities, military bases and government agencies

Polyethylene grease separators – The long term solution

...Easy transport

Their low weight allows our grease separators to be transported easily by hand on site. A special base design also allows them to be transported by forklift truck.

...Simple and fast installation

With *EasyClean*: The curved shape of the one-piece tank makes it ideal for retrofitting purposes, even where space is tight through narrow staircases and doorways for example.

...Fracture resistance

The polyethylene material ensures a high impact strength. This means that soil movements can easily be compensated for where installation is in the ground.

...Resistant to aggressive grease

The polyethylene material used is 100 % resistant to aggressive grease. This guarantees a long service life since there is no damage to the material due to corrosion.

Separator function based on EN 1825

The KESSEL Euro separator based on Euro-Norm EN 1825 (as seen in the illustration below) consists of a grease separation chamber with an integrated sludge trap located at the bottom. Following the separator is a sampling chamber. Wastewater containing fats, oils and grease (FOG) is guided into the separator by a pacifying pipe which allows the wastewater to be slowly and evenly distributed into the separator preventing fast flowing wastewater from disturbing the separation process inside the chamber. The separation of the light material (FOG) and the heavier material (sludge) from the wastewater is all accomplished by the force of gravity. Heavily emulsified greases and oils may not be completely separable with the gravity method.

What can enter the separator?

Only wastewater containing organic FOG, which are required to be separated from the water, should be allowed into the separator. Under no circumstances should sewage,

rainwater or wastewater containing mineral oils (hydrocarbon based) be allowed to enter the separator.

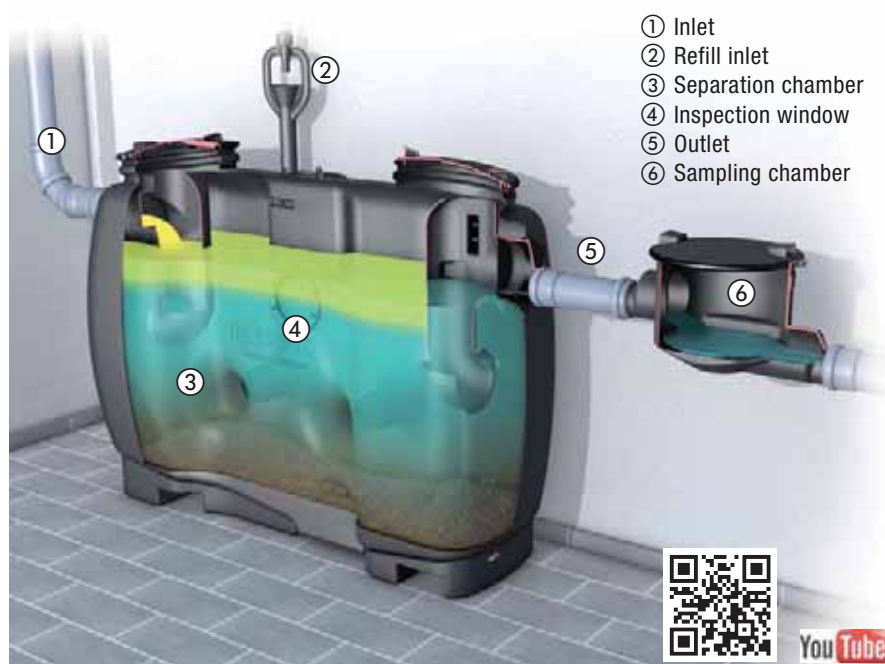
Examples of what should be connected to a separator: floor drains with odour traps, drainage channels, sinks, dishwashing machines and cooking vats.

Sludge separation chamber

The sludge separator serves to collect sludge / sediment which sinks to the bottom of the chamber due to its density being greater than that of the density of water.

Grease separation chamber

In the grease separation chamber, organic FOG (being less dense than water) separate from the wastewater and rise to the surface of the chamber. As more wastewater enters the chamber, the layer of separated greases and oils builds from the top down until the grease separation chamber is full and the entire chamber is emptied.



Installation notes

Requirements made on the installation location

Before a free-standing separator system can be installed, it must be checked that the planned set-up location is frost-free, has a horizontal, load-bearing floor, that there is sufficient space for set-up, operation, maintenance and control of the separator system and that the room is well vented and aerated. A water connection must be available for filling and cleaning the separator system as well as the respective electric installations required. When separator systems are to be installed underground it must be checked that there are no supply lines or cables within the area to be dug out. It must be remembered that accessibility for maintenance, inspection and disposal must be guaranteed at all times. Grease separator systems should be installed near where the wastewater is produced, but should not be in unventilated rooms or storage areas. To avoid odour pollution, they should not be located near occupied rooms and particularly near windows or ventilation openings. The systems must be easy for disposal vehicles to reach. Special operating conditions or constructional circumstances can make it necessary to locate the system further away from the points where the wastewater

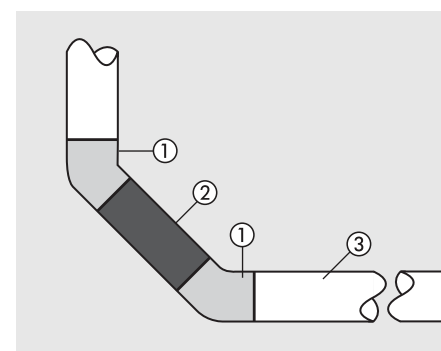
occurs. Separator systems should be set up in such a way that frost damage is avoided and all the parts which require regular maintenance are easily accessible at all times. Wherever necessary, separator system covers must be bedded in such a way that the extra load on the separator does not exceed its load capacity.

Connection to the drainage system

Unless any official requirements exist, grease separator systems must be connected to the sewer system as follows: the wastewater must be drained to the grease separator system via gravity. Grease separator systems installed below the backwater level (see EN 752-1) must be equipped with a twin pump lifting station. The supply pipes to the separator systems must have a gradient of at least 2 % (1:50) to prevent grease blockage. If this is not possible for constructional or operational reasons, and/or if longer pipes are necessary, suitable measures must be taken to prevent grease blockage and deposits.

Inlet piping

Wastewater entering a grease separator from the kitchen must do so in a calm manner in order to not agitate the sludge and grease layers inside the separator. Down pipes from the kitchen should be connected to the horizontal pipe with two 45 degree fittings ① with at least 250 mm between the two fittings ② (no 90 degree fittings should be used). No downward pipes should be connected to the main separator inlet pipe immediately prior to entering the separator. For a separator with a Ø 110 inlet, no downward connection should be made within 1 meter of the inlet to the grease separator - for a Ø 160 inlet a 1.5 meter distance should be observed ③ - for a Ø 200 inlet a 2.0 meter distance should be observed. Separator inlet pipes should be laid with at least a 2 % (1:50) slope to the separator. In the case that the main inlet pipe is laid through cold rooms or underground, equipping this pipe with insulation or a heating system equipped with a thermostat should be considered.



Clever problem-solvers for smooth disposal

Disposal pipe

The disposal pipe should be laid on a steady upward slope from the grease separator to the transfer point to the disposal vehicle, 90 degree elbows should be avoided. Disposal pipes should be executed as pressure or intake pipes in the necessary pressure level in accordance with the system features. Tight connections must be used for the individual pipes and fittings. Disposal pipes with a constant diameter should be laid to the transfer point. The intake pipe must have a nominal size of at least Ø 65 mm. Pipe material for the disposal pipe should be selected depending on the contents of the wastewater (extremely high solids share), special operating situation (overpressure/underpressure) and resistance properties (fatty acids).

Shredder-Mix-System

During the separating process in a grease separator, fats oils and greases (FOG) are separated from the wastewater and form a continually growing layer which is retained between the inlet and outlet of the separator. If this layer solidifies, disposal can become a problem.

The KESSEL Shredder-Mix system uses its sturdy pump to mix the contents of the grease separator until grease and sludge are pumpable. Any solid materials such as bones, pieces of plastic, cords, peel etc. is chopped up by a macerating system.

During this process, the homogenised tank contents are injected back into the separator chamber with high kinetic energy. This removes deposits and any soiling clinging to the inside tank walls and cleans the grease separator from the inside.

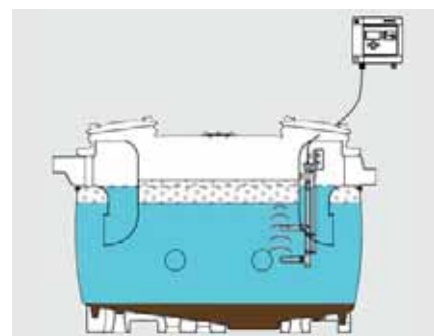


YouTube

SonicControl

SonicControl level sensing system with ultra sonic sensor for the measurement, display and monitoring of the grease layer thickness in a grease separator

- **Disposal costs are saved** by extending the disposal intervals.
- **Environment protection**
Disposal of not full separators no longer necessary.
- **User-friendly operation** thanks to the interactive control unit with digital display and user friendly interface.



YouTube

The right grease separator is just a few mouse clicks away

In order to simplify the selection process of EN 1825 grease separators, KESSEL now offers the SmartSelect grease separator specification program. This new free of charge on-line program offers the user multiple methods to accurately calculate the size of grease separator required for your specific project. Factors such as type of restaurant, meals served per day and wastewater temperature for example all play an important role when sizing a grease separator and are required when performing the calculation.

SmartSelect is based strictly on EN 1825 regulations and assures the user that the selected grease separator will meet all codes and norms. The resulting calculation sheet can be printed out to be filed with the project documentation or saved on-line in a KESSEL "virtual project library".



Always the right product – wastewater treatment

SELECTION CRITERIA FOR GREASE SEPARATORS (FULL DISPOSAL*)

Version	G	D	D+S	D+SP	M+S	PV+S
Inspection window for measuring the grease layer thickness	✓	✓	✓	✓	✓	✓
Refill Inlet for refilling the separator with water	✓	✓	✓	✓	✓	✓
Direct disposal connection for odour reduced disposal		✓	✓	✓	✓	✓
Shredder-Mix-System for homogenization of the tanks contents and odour free disposal			✓	✓	✓	✓
Control unit				✓	✓	✓
With disposal program for emptying, cleaning and refilling the separator					✓	✓
Fully automated operation						✓
For free standing installation	✓	✓	✓	✓	✓	✓
For underground installation	✓	✓	✓	✓		✓
Products see page	244	242	240	238	236	234

* Separators for partial disposal see page 256



Which standards must be taken into account?

EN
1825-1

Separator systems for greases

Basic construction, function and testing principles, marking and quality monitoring

EN
858

Separator systems for volatile liquids such as oil and petrol

Basic construction, function and testing principles, marking and quality monitoring, choice of nominal size, installation, operation and maintenance

EN
124

Drains

Load classes for upper sections and covers for traffic areas

DIN
4040

Separator systems for greases

Requirements on the use of separator systems in accordance with EN 1825

INFORMATION

Do you require more detailed information? Our Service Centre will be happy to help.

You can find your personal KESSEL contact on page 3 of this catalog!

Complete System Solution

In addition to individual grease- and oil separators, KESSEL also offers complete separator packages consisting of separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.

- Lifting and pumping stations for free standing and underground installation see chapter 3 "lifting stations".
- Stainless steel drains and channels for kitchens and food processing plants see chapter 4 "drains and channels made of stainless steel".

Individual Solutions

Thanks to the knowledge and possibilities in the field of polyethylene technology KESSEL is not only able to manufacture series products, but also special solutions in accordance with project-specific requirements. For additional information please take a look at the Individual Solutions section of this catalogue on page 283.

References

Over the past decades, KESSEL products have proven themselves countless times in destinations all over the world. Scan the following QR code to directly view our list of references.



www.kessel.com/references



SmartSelect simply makes planning easier –
 calculation module for separators at
smartselect.kessel.de

Grease separators made of polyethylene



The new KESSEL grease separators **EasyClean** bring ease of installation, cleaning performance and energy efficiency up to a new level.

EasyClean separators can be retrofitted up to the completely automatic system even while installed, and can thus be adapted to changing requirements.



NS 2, 3, 4, 7, 10

Grease separator **EasyClean**
 for free-standing set-up inside buildings

NEW

KESSEL INNOVATION

EasyClean for free-standing installation

INSTALLATION

The curved tank shape makes it easier to carry down narrow cellar stairs for installation in new or old buildings. Filling equipment integrated in the separator - installation directly on the wall possible.

PLANNING MADE EASY

Direction of flow can be changed on-site by changing inlet and outlet.

INSPECTION

Sloped arrangement of the tank openings permits better access (Fig. 1).

SAVINGS POTENTIAL

32 % reduction in water consumption during cleaning and filling.
 Up to 40 % saving on disposal times thanks to high-performance disposal pump (Fig. 2).

CONTROL

SonicControl layer thickness measuring device with ultrasonic sensor.





SYSTEM ADVANTAGES

Modular system for free-standing installation

MODULAR SYSTEM

Compact design – modular system. Ideal for later installation, even via narrow cellar stairs.

ASSEMBLY

Quick and easy assembly thanks to low weight of the individual tanks and practical connection wedges (Fig. 3).

ABSOLUTELY WATERTIGHT

Seals in accordance with EN 681-1 seal both axially and radially at the same time (Fig. 4).

SYSTEM BENEFITS

Underground installation

INSTALLATION

Variable upper section as standard for adaptation to the ground level and to compensate the floor covering settling.

ODOUR-TIGHT

Selection of odour-tight covers in class A, B or D.

TRANSPORT

Easy transport due to low weight.

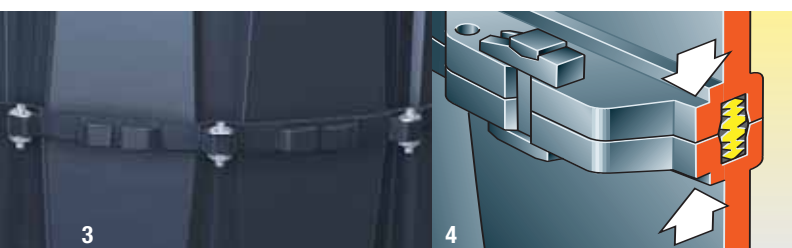
ALTERNATIVE

Systems installed safely and cleanly outside the building (Fig. 5).

CERTIFICATION

The German Institute for Structural Engineering (DIBt) has granted site-inspection certification. This makes KESSEL the first manufacturer on the German market to be granted such an inspection certificate.


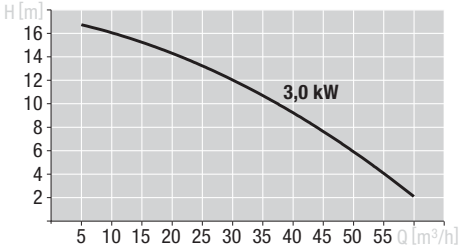
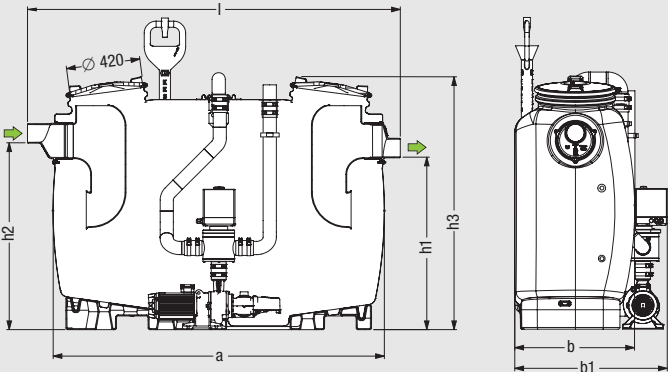
KESSEL extends the warranty period for tanks beyond the statutory requirement to 20 years. This covers the water-tightness, usability and static safety of these components.



Grease separators for free-standing installation

Grease separator *EasyClean PV+S Auto Mix & Pump*

Products

Illustration	Article description	NS	Weight	Article #																																																																																																	
<div><div>NEW</div></div> <div><p>Certification: Z-54.1-474</p><p>Delivery: System completely assembled.</p><p>Further nominal sizes on request</p></div>	<p>Grease separator EasyClean PV+S Auto Mix & Pump NS ...</p> <p><input type="checkbox"/> with Shredder-Mix-System and fully automated disposal, cleaning and refilling program, according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene, pumping capacity 3.0 kW</p> <p>With inspection window, refill inlet, control unit and pump</p> <p>For free-standing installation in frost-protected rooms</p> <p>Version: Right side (connections for pump, disposal pipe and inspection window are on the right side of separator, based on direction of flow). Version can be changed to left side by exchanging inlet and outlet.</p> <p>Accessories: Sampling chamber, lifting stations, remote control, <i>TeleControl</i></p>	NS 2 NS 3 NS 4 NS 7 NS 10	160 kg 165 kg 178 kg 226 kg 272 kg	<p>without <i>SonicControl</i></p> <p>93 002.01/PVS 93 003.01/PVS 93 004.01/PVS 93 007.01/PVS 93 010.01/PVS</p> <p>with <i>SonicControl</i></p> <p>93 002.02/PVS 93 003.02/PVS 93 004.02/PVS 93 007.02/PVS 93 010.02/PVS</p>																																																																																																	
																																																																																																					
	<div><div></div><div><p>Ø = Outer diameter b1 = Set-up dimensions</p></div></div>																																																																																																				
	<p>Technical note see page 217</p> <table><tr><th>Nominal size</th><th>Ø</th><th>a</th><th colspan="4">Installation dimensions</th><th colspan="4">Wastewater contents</th><th>Grease separator</th><th>Total</th></tr><tr><th></th><th></th><th></th><th>l</th><th>x</th><th>b</th><th>b1</th><th>h1</th><th>h2</th><th>h3</th><th>Sludge trap</th><th>Separators</th><th></th></tr><tr><td>NS 2</td><td>110</td><td>1500</td><td>1735</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>200 l</td><td>400 l</td><td>100 l</td><td>600 l</td></tr><tr><td>NS 3</td><td>110</td><td>1500</td><td>1735</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>300 l</td><td>300 l</td><td>120 l</td><td>600 l</td></tr><tr><td>NS 4</td><td>110</td><td>1880</td><td>2115</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>400 l</td><td>400 l</td><td>160 l</td><td>800 l</td></tr><tr><td>NS 7</td><td>160</td><td>1910</td><td>2145</td><td></td><td>940</td><td>1130</td><td>1185</td><td>1255</td><td>1655</td><td>700 l</td><td>650 l</td><td>280 l</td><td>1350 l</td></tr><tr><td>NS 10</td><td>160</td><td>2590</td><td>2820</td><td></td><td>940</td><td>1130</td><td>1185</td><td>1255</td><td>1655</td><td>1000 l</td><td>900 l</td><td>400 l</td><td>1900 l</td></tr></table>					Nominal size	Ø	a	Installation dimensions				Wastewater contents				Grease separator	Total				l	x	b	b1	h1	h2	h3	Sludge trap	Separators		NS 2	110	1500	1735		680	860	985	1055	1435	200 l	400 l	100 l	600 l	NS 3	110	1500	1735		680	860	985	1055	1435	300 l	300 l	120 l	600 l	NS 4	110	1880	2115		680	860	985	1055	1435	400 l	400 l	160 l	800 l	NS 7	160	1910	2145		940	1130	1185	1255	1655	700 l	650 l	280 l	1350 l	NS 10	160	2590	2820		940	1130	1185	1255	1655	1000 l	900 l	400 l	1900 l
	Nominal size	Ø	a	Installation dimensions				Wastewater contents				Grease separator	Total																																																																																								
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	NS 2	110	1500	1735		680	860	985	1055	1435	200 l	400 l	100 l	600 l																																																																																							
	NS 3	110	1500	1735		680	860	985	1055	1435	300 l	300 l	120 l	600 l																																																																																							
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	NS 10	160	2590	2820		940	1130	1185	1255	1655	1000 l	900 l	400 l	1900 l																																																																																							

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean PV+S Auto Mix & Pump*



EasyClean PV+S Auto Mix & Pump grease separators ① are designed according to EN 1825-1 and are equipped with a fully automated disposal, selfcleaning and refill system. These separators distinguish themselves through their ease of installation and nearly maintenance free characteristics.

The advantage of the *EasyClean PV+S Auto Mix & Pump* separators is that a complete disposal can take place through permanently installed disposal lines ② while the twin covers of the separator remain closed. With this advantage, the disposal truck can hook up to a connection on an exterior wall of the building ③ so that the pump of the separator can pump the separator contents into the waiting disposal truck without any unpleasant odours escaping. After the contents of the separator have been pumped out, the interior of the separator is automatically rinsed and cleaned with warm water in a multi-step automated process. The complete procedure occurs with the press of a button and is also available with a remote control system ④ so that the driver of the disposal vehicle can handle the entire procedure without the necessity of any building personnel being present. According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of once every month.

Professional advantages

- **Program-controlled disposal and rinsing device**
- **Shredder-Mix-System for homogenisation of the tank contents**
- **3.0 kW pump**
- Clean and odour-free disposal and cleaning
- Optional remote control
- **Complete System Solution**
In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.
- **Difficulty finding the product you are looking for?**
KESSEL offers a fully staffed Individual Solutions Department with experience in designing and manufacturing drainage products exactly meeting your specifications. For additional information please take a look at the Individual Solutions section of this catalogue on page 289 or contact us directly to discuss your requirement. Contact information is found on page 3.
- **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ⑤ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids.

In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ⑥ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.

Notice


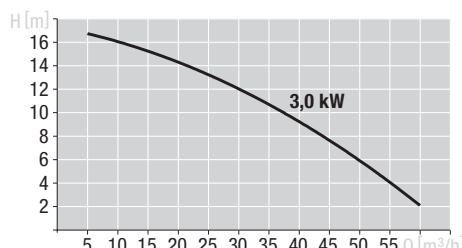
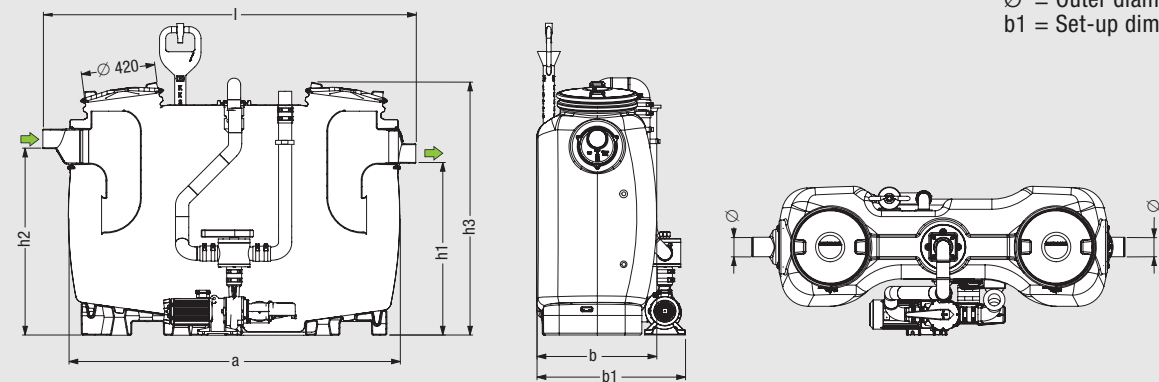
EasyClean PV+S Auto Mix & Pump separators should be installed in all areas where nuisance odour problems are either undesired or not allowed. The systems allow the user to customize settings to improve disposal performance and also allow the disposal vehicle driver to handle the complete disposal procedure which can also be conducted during off hours.

In cases where the separator is installed in an operation producing large amounts of sludge (ie. slaughterhouses / butchers) it is recommended that the separator be equipped with twin pumps - one pump for the disposal of the sludge and the second pump for the disposal of wastewater and separated grease.

Grease separators for free-standing installation

Grease separator *EasyClean M+S Mix & Pump*

Products

Illustration	Article description	NS	Weight	Article #																																																																																												
<div>NEW</div>  <p>Certification: Z-54.1-474</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	Grease separator EasyClean M+S Mix & Pump NS ...	NS 2	155 kg	without <i>SonicControl</i> 93 002.01/MS 93 003.01/MS 93 004.01/MS 93 007.01/MS 93 010.01/MS																																																																																												
	<input type="checkbox"/> with Shredder-Mix-System and manually controlled disposal, cleaning and refilling program, according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene, pumping capacity 3.0 kW	NS 3	160 kg																																																																																													
		NS 4	173 kg																																																																																													
		NS 7	221 kg																																																																																													
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Technical note see page 217																																																																																																
<table><tr><th rowspan="2">Nominal size</th><th rowspan="2">Ø</th><th rowspan="2">a</th><th colspan="4">Installation dimensions</th><th colspan="4">Wastewater contents</th><th>Grease separator</th><th rowspan="2">Total</th></tr><tr><th>l</th><th>x</th><th>b</th><th>b1</th><th>h1</th><th>h2</th><th>h3</th><th>Sludge trap</th><th>Separators</th></tr><tr><td>NS 2</td><td>110</td><td>1500</td><td>1735</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>200 l</td><td>400 l</td><td>100 l</td><td>600 l</td></tr><tr><td>NS 3</td><td>110</td><td>1500</td><td>1735</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>300 l</td><td>300 l</td><td>120 l</td><td>600 l</td></tr><tr><td>NS 4</td><td>110</td><td>1880</td><td>2115</td><td></td><td>680</td><td>860</td><td>985</td><td>1055</td><td>1435</td><td>400 l</td><td>400 l</td><td>160 l</td><td>800 l</td></tr><tr><td>NS 7</td><td>160</td><td>1910</td><td>2145</td><td></td><td>940</td><td>1130</td><td>1185</td><td>1255</td><td>1655</td><td>700 l</td><td>650 l</td><td>280 l</td><td>1350 l</td></tr><tr><td>NS 10</td><td>160</td><td>2590</td><td>2820</td><td></td><td>940</td><td>1130</td><td>1185</td><td>1255</td><td>1655</td><td>1000 l</td><td>900 l</td><td>400 l</td><td>1900 l</td></tr></table>					Nominal size	Ø	a	Installation dimensions				Wastewater contents				Grease separator	Total	l	x	b	b1	h1	h2	h3	Sludge trap	Separators	NS 2	110	1500	1735		680	860	985	1055	1435	200 l	400 l	100 l	600 l	NS 3	110	1500	1735		680	860	985	1055	1435	300 l	300 l	120 l	600 l	NS 4	110	1880	2115		680	860	985	1055	1435	400 l	400 l	160 l	800 l	NS 7	160	1910	2145		940	1130	1185	1255	1655	700 l	650 l	280 l	1350 l	NS 10	160	2590	2820		940	1130	1185	1255	1655	1000 l	900 l	400 l	1900 l
Nominal size	Ø	a	Installation dimensions					Wastewater contents				Grease separator	Total																																																																																			
			l	x	b	b1	h1	h2	h3	Sludge trap	Separators																																																																																					
NS 2	110	1500	1735		680	860	985	1055	1435	200 l	400 l	100 l	600 l																																																																																			
NS 3	110	1500	1735		680	860	985	1055	1435	300 l	300 l	120 l	600 l																																																																																			
NS 4	110	1880	2115		680	860	985	1055	1435	400 l	400 l	160 l	800 l																																																																																			
NS 7	160	1910	2145		940	1130	1185	1255	1655	700 l	650 l	280 l	1350 l																																																																																			
NS 10	160	2590	2820		940	1130	1185	1255	1655	1000 l	900 l	400 l	1900 l																																																																																			

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean M+S Mix & Pump*



EasyClean M+S Mix & Pump grease separators ① are designed according to EN 1825-1 and are equipped with an automated self-cleaning system as well as a pumping disposal system. These separators distinguish themselves through their ease of installation and nearly maintenance free characteristics.

The advantage of the *EasyClean M+S Mix & Pump* separators is that disposal can take place through permanently installed disposal lines ② while the twin covers of the separator remain closed. With this advantage, the disposal truck can hook up to a connection on an exterior wall of the building ③ so that the pump of the separator can pump the separator contents into the waiting disposal truck without any unpleasant odours escaping. After the contents of the separator have been pumped out, the interior of the separator is automatically rinsed and cleaned with warm water in a multi-step process which is manually controlled from the control unit ④. According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of once every month.

Professional advantages

- **Manual disposal and rinsing device**
 - **Shredder-Mix-System for homogenisation of the tank contents**
 - **3.0 kW pump**
 - Clean and odour-free disposal and cleaning
 - Simple control
 - **Complete System Solution**
- In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.
- **Difficulty finding the product you are looking for?**

KESSEL offers a fully staffed Individual Solutions Department with experience in designing and manufacturing drainage products exactly meeting your specifications. For additional information please take a look at the Individual Solutions section of this catalogue on page 289 or contact us directly to discuss your requirement. Contact information is found on page 3.

- **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ⑤ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids.

In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ⑥ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.


Notice

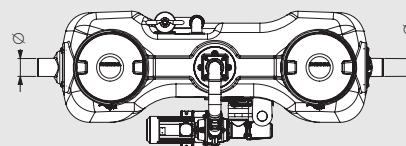
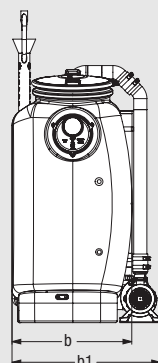
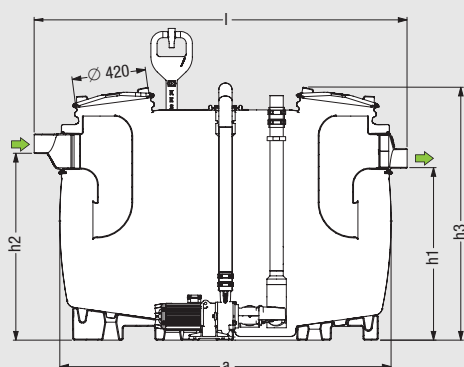
EasyClean M+S Mix & Pump separators should be installed in all areas where nuisance odour problems are either undesired or not allowed. In cases where the separator is installed in an operation producing large amounts of sludge (ie. slaughterhouses / butchers) it is recommended that the separator be equipped with twin pumps - one pump for the disposal of the sludge and the second pump for the disposal of wastewater and separated grease.

Grease separators for free-standing installation

Grease separator *EasyClean D+SP Auto Mix*

Products

Illustration	Article description	NS	Weight	Article #
 <p>Certification: Z-54.1-474</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	<p>Grease separator <i>EasyClean D+SP Auto Mix NS ...</i></p> <p><input type="checkbox"/> with direct disposal and Shredder-Mix-System, according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene, pumping capacity 3.0 kW</p> <p>With inspection window, refill inlet, control unit and pump</p> <p>For free-standing installation in frost-protected rooms</p> <p>Version: Right side (connections for pump, disposal pipe and inspection window are on the right side of separator, based on direction of flow). Version can be changed to left side by exchanging inlet and outlet.</p> <p>Accessories: Sampling chamber, lifting stations, remote control, <i>TeleControl</i></p>	NS 2	150 kg	without <i>SonicControl</i> 93 002.01/DSP
		NS 3	155 kg	93 003.01/DSP
		NS 4	168 kg	93 004.01/DSP
		NS 7	216 kg	93 007.01/DSP
		NS 10	262 kg	93 010.01/DSP
		NS 2	150 kg	with <i>SonicControl</i> 93 002.02/DSP
		NS 3	155 kg	93 003.02/DSP
		NS 4	168 kg	93 004.02/DSP
		NS 7	216 kg	93 007.02/DSP
		NS 10	262 kg	93 010.02/DSP



Ø = Outer diameter
b1 = Set-up dimensions

Technical note see page 217

Nominal size	Ø	a	Installation dimensions			b1	h1	h2	h3	Wastewater contents		Grease separator	Total
			l	x	b					Sludge trap	Separators		
NS 2	110	1500	1735	680	860	985	1055	1435	200 l	400 l	100 l	600 l	
NS 3	110	1500	1735	680	860	985	1055	1435	300 l	300 l	120 l	600 l	
NS 4	110	1880	2115	680	860	985	1055	1435	400 l	400 l	160 l	800 l	
NS 7	160	1910	2145	940	1130	1185	1255	1655	700 l	650 l	280 l	1350 l	
NS 10	160	2590	2820	940	1130	1185	1255	1655	1000 l	900 l	400 l	1900 l	

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean D+SP Auto Mix*



EasyClean D+SP Auto Mix grease separators ① are designed according to EN 1825-1 and are equipped with an automatically controlled pump for mixing and cleaning of the separators contents and inner walls. These separators are offered with a modern control unit with digital display ②. It is possible to automate specific steps of the grease separator disposal process. The *EasyClean D+SP Auto Mix* separators distinguish themselves through their ease of installation and nearly maintenance free characteristics.

The advantage of the *EasyClean D+SP Auto Mix* separators is that disposal can take place through permanently installed disposal lines ③ while the twin covers of the separator remain closed. With this advantage, the disposal truck hooks up to a connection on an exterior wall of the building ④ and, using its own pump, suctions out the entire contents of the separator without any unpleasant odours escaping.

The Shredder-Mix-System macerates and liquifies its contents and also cleans its interior walls all simultaneously. This prepared wastewater is then suctioned into the waiting disposal vehicle. According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of once every month.

Professional advantages

- **Fully automatic direct disposal with program-controlled Shredder-Mix-System for homogenisation of the tank contents**
- Clean and odour-free disposal and cleaning
- Simple control
- Low-maintenance operation
- **Complete System Solution**
In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.
- **Difficulty finding the product you are looking for?**
KESSEL offers a fully staffed Individual Solutions Department with experience in designing and manufacturing drainage products exactly meeting your specifications. For additional information please take a look at the Individual Solutions section of this catalogue on page 289 or contact us directly to discuss your requirement. Contact information is found on page 3.
- **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ⑤ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids. In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ⑥ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.

Notice


EasyClean D+SP Auto Mix grease separator is ideal for installations where the presence of strong odours during disposal of the separators contents can not be permitted. The "Shredder-Mix-System" liquifies, macerates and cleans the separators contents all in one step.

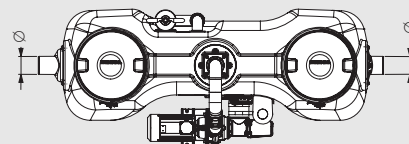
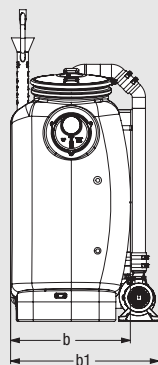
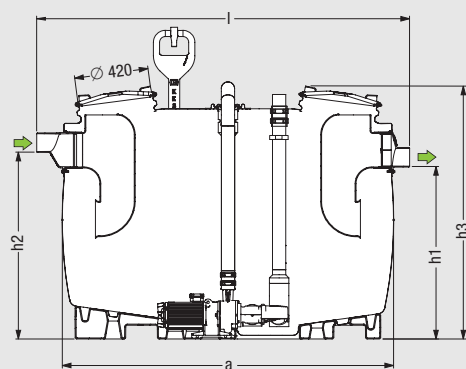
In circumstances where large amounts of sludge are expected (i.e. slaughterhouses / meat processing plants), the separator should be equipped with two macerating pumps - one pump for the wastewater and grease, the second pump solely for the sludge.

Grease separators for free-standing installation

Grease separator *EasyClean D+S Mix*

Products

Illustration	Article description	NS	Weight	Article #	
<div>NEW</div>  <p>Illustration shows Art. # 93 004.31/DS</p> <p>Certification: Z-54.1-474</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	Grease separator EasyClean D+S Mix NS ... <input type="checkbox"/> with direct disposal and Shredder-Mix-System, according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene, pumping capacity 3.0 kW With refill inlet and pump For free-standing installation in frost-protected rooms Version: Right side (connections for pump, disposal pipe and inspection window are on the right side of separator, based on direction of flow). Version can be changed to left side by exchanging inlet and outlet. Accessories: Sampling chamber, lifting stations			without <i>SonicControl</i>	
				without inspection window	with inspection window
				93 002.01/DS	93 002.31/DS
				93 003.01/DS	93 003.31/DS
				93 004.01/DS	93 004.31/DS
				93 007.01/DS	93 007.31/DS
				93 010.01/DS	93 010.31/DS
				with <i>SonicControl</i>	
				without inspection window	with inspection window
				93 002.02/DS	93 002.32/DS
		NS 2	145 kg	93 003.02/DS	93 003.32/DS
		NS 3	150 kg	93 004.02/DS	93 004.32/DS
		NS 4	163 kg	93 007.02/DS	93 007.32/DS
		NS 7	211 kg	93 010.02/DS	93 010.32/DS
		NS 10	257 kg		



Ø = Outer diameter
b1 = Set-up dimensions

Technical note see page 217

Nominal size	Ø	a	Installation dimensions			b1	h1	h2	h3	Wastewater contents		Grease separator	Total
			l	x	b					Sludge trap	Separators		
NS 2	110	1500	1735	680	860	860	985	1055	1435	200 l	400 l	100 l	600 l
NS 3	110	1500	1735	680	860	860	985	1055	1435	300 l	300 l	120 l	600 l
NS 4	110	1880	2115	680	860	860	985	1055	1435	400 l	400 l	160 l	800 l
NS 7	160	1910	2145	940	1130	1185	1255	1655		700 l	650 l	280 l	1350 l
NS 10	160	2590	2820	940	1130	1185	1255	1655		1000 l	900 l	400 l	1900 l

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean D+S Mix*



EasyClean D+S Mix grease separators ① are designed according to EN 1825-1 and are equipped with a manually controlled pump for mixing and cleaning of the separator's contents and inner walls. These separators distinguish themselves through their ease of installation and nearly maintenance-free characteristics.

The advantage of the *EasyClean D+S Mix* separators is that disposal can take place through permanently installed disposal lines ② while the twin covers of the separator remain closed. With this advantage, the disposal truck hooks up to a connection on an exterior wall of the building ③ and, using its own pump, suctions out the entire contents of the separator without any unpleasant odours escaping.

The Shredder-Mix-System macerates and liquifies its contents and also cleans its interior walls all simultaneously. This prepared wastewater is then suctioned into the waiting disposal vehicle. According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of once every month.

Professional advantages

- **Direct disposal with Shredder-Mix-System for homogenisation of the tank contents**
- Clean and odour-free disposal and cleaning
- Simple control
- Low-maintenance operation

■ **Complete System Solution**

In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.

■ **Difficulty finding the product you are looking for?**

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■ **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ④ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost-free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids.

In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ⑤ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.

Notice

EasyClean D+S Mix grease separator is ideal for installations where the presence of strong odours during disposal of the separator's contents can not be permitted. The "Shredder-Mix-System" liquifies, macerates and cleans the separator's contents all in one step.

In circumstances where large amounts of sludge are expected (i.e. slaughterhouses / meat processing plants), the separator should be equipped with two macerating pumps - one pump for the wastewater and grease, the second pump solely for the sludge.

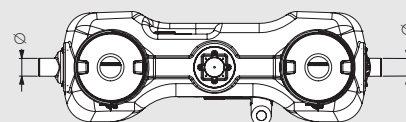
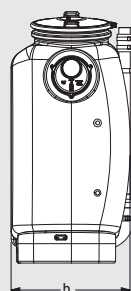
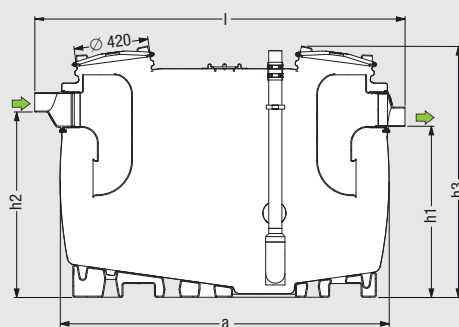
Grease separators for free-standing installation

Grease separator *EasyClean D Standard*

Products

Illustration	Article description	NS	Weight	Article #	
<div>NEW</div>  <p>Illustration shows Art. # 93 004.01/D</p> <p>Certification: Z-54.1-474</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	Grease separator EasyClean D Standard NS ... <input type="checkbox"/> with direct disposal according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene. For free-standing installation in frost-protected rooms Version: Right side (connections for pump, disposal pipe and inspection window are on the right side of separator, based on direction of flow). Version can be changed to left side by exchanging inlet and outlet. Accessories: Refill inlet, sampling chamber, lifting stations	NS 2 NS 3 NS 4 NS 7 NS 10	69 kg 74 kg 87 kg 135 kg 181 kg	without <i>SonicControl</i>	
				without accessories	with inspection window
				93 002.01/D	93 002.21/D
				93 003.01/D	93 003.21/D
				93 004.01/D	93 004.21/D
				93 007.01/D	93 007.21/D
				93 010.01/D	93 010.21/D
				with refill inlet	with inspection window and refill inlet
				93 002.11/D	93 002.31/D
				93 003.11/D	93 003.31/D
				93 004.11/D	93 004.31/D
				93 007.11/D	93 007.31/D
				93 010.11/D	93 010.31/D
		NS 2 NS 3 NS 4 NS 7 NS 10	69 kg 74 kg 87 kg 135 kg 181 kg	with <i>SonicControl</i>	
				without accessories	with inspection window
				93 002.02/D	93 002.22/D
				93 003.02/D	93 003.22/D
				93 004.02/D	93 004.22/D
				93 007.02/D	93 007.22/D
				93 010.02/D	93 010.22/D
				with refill inlet	with inspection window and refill inlet
				93 002.12/D	93 002.32/D
				93 003.12/D	93 003.32/D
				93 004.12/D	93 004.32/D
				93 007.12/D	93 007.32/D
				93 010.12/D	93 010.32/D

Ø = Outer diameter



Technical note see page 217

Nominal size	Ø	a	Installation dimensions			h1	h2	h3	Wastewater contents		Grease separator	Total
			l	x	b				Sludge trap	Separators		
NS 2	110	1500	1735		680	985	1055	1435	200 l	400 l	100 l	600 l
NS 3	110	1500	1735		680	985	1055	1435	300 l	300 l	120 l	600 l
NS 4	110	1880	2115		680	985	1055	1435	400 l	400 l	160 l	800 l
NS 7	160	1910	2145		940	1185	1255	1655	700 l	650 l	280 l	1350 l
NS 10	160	2590	2820		940	1185	1255	1655	1000 l	900 l	400 l	1900 l

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean D Standard*



EasyClean D Standard grease separators ① are designed according to EN 1825-1. These separators distinguish themselves through their ease of installation and nearly maintenance free characteristics.

The advantage of the *EasyClean D Standard* separators is that disposal can take place through permanently installed disposal lines ② while the twin covers of the separator remain closed. With this advantage, the disposal truck hooks up to a connection on an exterior wall of the building ③ and, using its own pump, suctions out the entire contents of the separator without any unpleasant odours escaping.

According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of once every month.

Professional advantages

- **With direct disposal connection**
- **Without pump**
- Disposal with the tank closed
- Low-maintenance operation

■ **Complete System Solution**

In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.

■ **Difficulty finding the product you are looking for?**

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■ **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ④ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids.

In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ⑤ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.

Notice

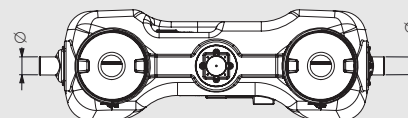
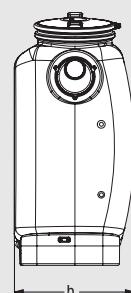
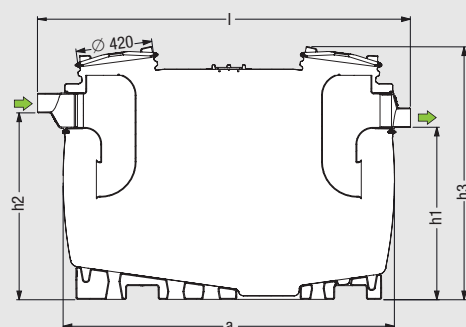
The *EasyClean D Standard* separator should be inspected and fully cleaned during every third disposal. In all circumstances where the accessibility of the disposal truck's suction hose to the separator is highly limited or impossible, KESSEL recommends the installation of a *EasyClean D Standard* unit. With the installation of the refill equipment, the separator can be refilled after disposal without the need of opening any of the covers and releasing strong and aggressive odours.

Grease separators for free-standing installation

Grease separator *EasyClean G Basic*

Products

Illustration	Article description	NS	Weight	Article #	
<div>NEW</div>  <p>Illustration shows Art. # 93 004.01</p> <p>Certification: Z-54.1-474</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	Grease separator EasyClean G Basic NS ... <input type="checkbox"/> according to Euro Norm EN 1825, manufactured from virgin, non-recycled polyethylene. For free-standing installation in frost-protected rooms Version: Right side (connections for pump, disposal pipe and inspection window are on the right side of separator, based on direction of flow). Version can be changed to left side by exchanging inlet and outlet. Accessories: Refill inlet, sampling chamber, lifting stations. Retrofitting up to <i>PV+S</i> Auto Mix & Pump possible.			without <i>SonicControl</i>	
				without accessories	with inspection window
				NS 2 69 kg	93 002.01 93 002.21
				NS 3 74 kg	93 003.01 93 003.21
				NS 4 87 kg	93 004.01 93 004.21
				NS 7 135 kg	93 007.01 93 007.21
				NS 10 181 kg	93 010.01 93 010.21
				with refill inlet	with inspection window and refill inlet
				NS 2 69 kg	93 002.11 93 002.31
				NS 3 74 kg	93 003.11 93 003.31
				NS 4 87 kg	93 004.11 93 004.31
				NS 7 135 kg	93 007.11 93 007.31
				NS 10 181 kg	93 010.11 93 010.31
				with <i>SonicControl</i>	
				without accessories	with inspection window
				NS 2 69 kg	93 002.02 93 002.22
				NS 3 74 kg	93 003.02 93 003.22
				NS 4 87 kg	93 004.02 93 004.22
				NS 7 135 kg	93 007.02 93 007.22
				NS 10 181 kg	93 010.02 93 010.22
				with refill inlet	with inspection window and refill inlet
				NS 2 69 kg	93 002.12 93 002.32
				NS 3 74 kg	93 003.12 93 003.32
				NS 4 87 kg	93 004.12 93 004.32
				NS 7 135 kg	93 007.12 93 007.32
				NS 10 181 kg	93 010.12 93 010.32



Ø = Outer diameter

Technical note see page 217

Nominal size	Ø	a	Installation dimensions			h1	h2	h3	Wastewater contents		Grease separator	Total
			l	x	b				Sludge trap	Separators		
NS 2	110	1500	1735		680	985	1055	1435	200 l	400 l	100 l	600 l
NS 3	110	1500	1735		680	985	1055	1435	300 l	300 l	120 l	600 l
NS 4	110	1880	2115		680	985	1055	1435	400 l	400 l	160 l	800 l
NS 7	160	1910	2145		940	1185	1255	1655	700 l	650 l	280 l	1350 l
NS 10	160	2590	2820		940	1185	1255	1655	1000 l	900 l	400 l	1900 l

Special offer packages

Package 1	with <i>SonicControl</i> and sampling chamber (lateral outlet)	913 101
Package 2	with <i>SonicControl</i> and sampling chamber (vertical outlet)	913 102

Grease separators for free-standing installation

Installation example *EasyClean G Basic*



EasyClean G Basic grease separators ① are designed according to EN 1825-1. These separators distinguish themselves through their ease of installation and nearly maintenance free characteristics.

According to DIN V 4040-2, the complete contents of the separator should be emptied, the unit cleaned and refilled with clean cold water every fourteen days or at a minimum of every month. To empty the contents of the separator the odour tight covers need to be removed. The suction hose of the disposal truck is then used to empty and rinse the inside of the separator ②.

Professional advantages

- **With direct disposal connection**
- **Without pump**
- Low-maintenance operation
- **Complete System Solution**
In addition to individual grease separators, KESSEL also offers complete separator packages consisting of grease separator, properly matched lifting station and advantageous accessories. All from one source - KESSEL.
- **Difficulty finding the product you are looking for?**
For Individual Solutions see page 287
- **Grease separator calculation**



SmartSelect simply makes planning easier – calculation module for separators at smartselect.kessel.de



Scan this QR code to directly view the corresponding product video.



Installation hints

Important is that a sampling chamber ③ is installed after the outlet of the separator. The separator is installed completely level on a flat firm surface in a frost free area. The height of the room in which the separator is installed should allow easy removal and access of the two lids.

In the case that the outlet of the separator is located below the local defined backwater level, a lifting station ④ is to be installed according to EN 12056. In situations where the interruption of separator service is not allowable, a lifting station with double pumps is to be installed.

Notice

The *EasyClean G Basic* separator can be upgraded to a any other version (with permanently installed disposal lines) at any time. It should only be installed in areas where:

- the release of strong and aggressive odours will not pose a problem
- accessing the separator with the disposal hose of the disposal truck will not cause problems or inconveniences.

Retrofit Sets

- ☐ **D Standard**
With direct disposal connection
- ☐ **D+S Mix** 1 NS 2-7 2 NS 10
Refill inlet, 1 screw-type valve and direct disposal connection
- ☐ **D+SP Auto Mix** 1 NS 2-7 2 NS 10
Refill inlet, inspection window, 2 solenoid valves, direct disposal connection and control unit
- ☐ **M+S Mix&Pump** 1 NS 2-7 2 NS 10
Refill inlet, inspection window, 1 screw-type valve, direct disposal connection and control unit
- ☐ **PV+S Auto Mix&Pump** 1 NS 2-7 2 NS 10
Refill inlet, inspection window, 2 solenoid valves, direct disposal connection and control unit

913 101/D

1 913 101/DS
2 913 101/DS10

1 913 101/DSP
2 913 101/DSP10

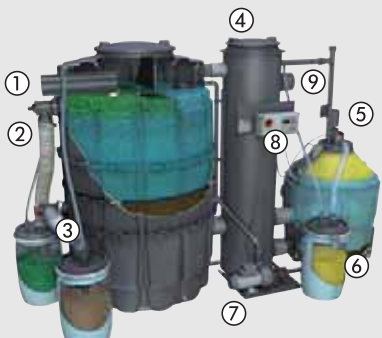
1 913 101/MS
2 913 101/MS10

1 913 101/PVS
2 913 101/PVS10

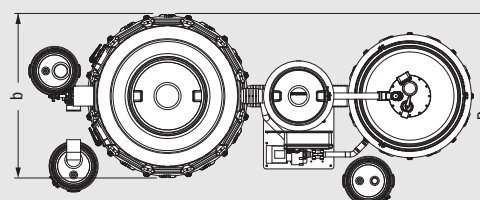
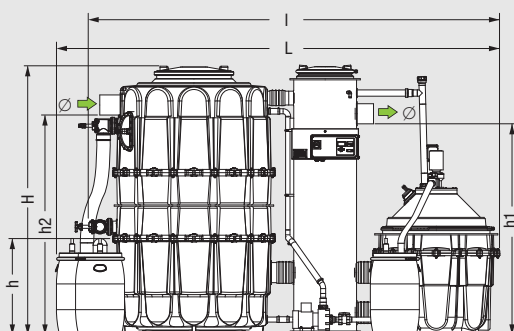
Grease separators for free-standing installation (partial disposal)

Grease separator "SE Premium"

Products

Illustration	Article description	NS	Weight		Article #
 <ul style="list-style-type: none"> ① Inlet ② Floating sludge disposal ③ Settling sludge disposal ④ Balance tower / Ventilation ⑤ Heating dome with mixing motor ⑥ Grease disposal ⑦ Rinsing pump ⑧ Control unit ⑨ Outlet <p>For free-standing installation in frost-protected rooms</p> <p>Delivery: System completely assembled.</p> <p>Further nominal sizes on request</p>	<p>"SE Premium" Grease Separator NS ...</p> <p>Separator that complies to CJ/T 295-2008 / EN 1825 / DIN 4040, made of polyethylene PE-HD</p> <p>For free standing installation in frost-free rooms, with upstream sludge trap, quick release and odour-tight removable access covers, separator chamber with heated lid cover screwed tight to prevent odours escaping. Inlet and outlets Ø ... for SML-connection in compliance with EN 877.</p> <p>With self-disposal device for separated floating, settling sludge and grease removal via manual taps. Visual control of disposal with see-thru disposal hoses, disposal possible during separator operation. Each with a grease, scum and sediment disposal bucket with an adapter lid and a spare bucket.</p> <p>System with an external pump for removing the sediment from the grease separation chamber (230 V, 50 Hz, 750 W), electrical heating (230 V, 50 Hz, 1200 W) for grease collection chamber and motor-driven mixer (230 V, 50 Hz, 360 W) and control unit (230 V, 50 Hz, 6.3 - 10 A), general system protection class IP 54</p>	<p>NS 2</p> <p>NS 4</p> <p>NS 7</p> <p>NS 10</p>	<p>empty</p> <p>260 kg</p> <p>290 kg</p> <p>400 kg</p> <p>450 kg</p>	<p>full</p> <p>1460 kg</p> <p>1490 kg</p> <p>2100 kg</p> <p>2520 kg</p>	<p>99 002.01</p> <p>99 004.01</p> <p>99 007.01</p> <p>99 010.01</p>

Ø = Outer diameter

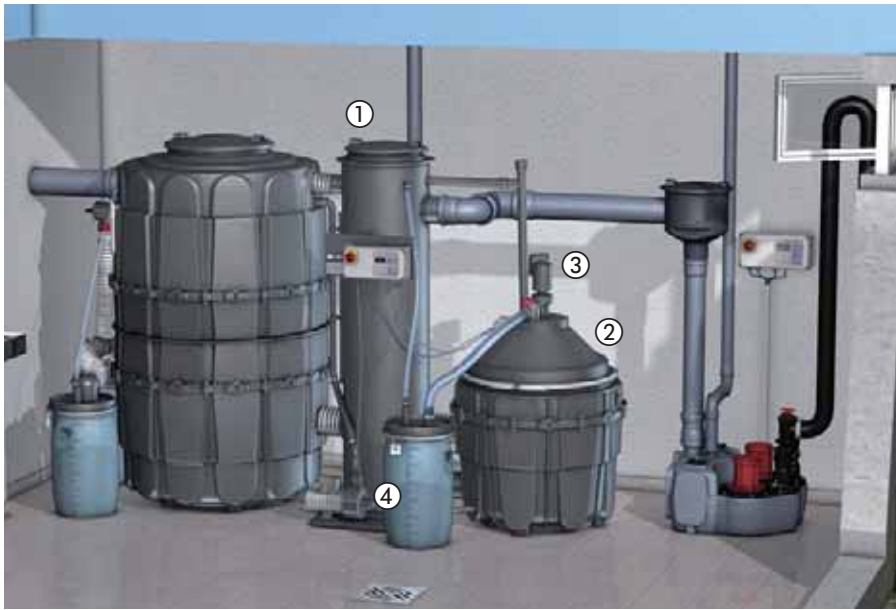


Nominal size	Ø (mm)	H * (mm)	L (mm)	I (mm)	B (mm)	h1 (mm)	h2 (mm)	Largest component	
								h	b
NS 2	110	1920	3286	2971	1351	1585	1655	610	1012
NS 4	110	1950	3316	3021	1351	1585	1655	610	1062
NS 7	160	2139	3531	3273	1519	1680	1750	670	1298
NS 10	160	2139	3831	3577	1519	1680	1750	670	1298

* Please note that additional space above the separator is required for service / maintenance purposes (at least 50 cm is recommended)

Grease separators for free-standing installation (partial disposal)

Installation example Grease separator “SE Premium”



The newly designed self-disposal grease separator “SE-Premium” ① in compliance with EN 1825, DIN 4040 and CJ/T 295-2008 stands out in particular thanks to its operating friendliness. The electrical heating elements ② in the separator, with a mixer motor ③, homogenises the layer of grease and allows the grease to be drained easily into the collection tank ④. This disposal process can be carried out even during times of kitchen operation meaning no interruption of the kitchen is required. In addition to the enlarged settling sludge disposal, the “SE-Premium” also has a floating sludge disposal. This means that it is possible to dispose of the floating sludge (vegetables, etc.) from the tank that has until now remained permanently in the separator.

The self-disposal grease separators are ideal for all areas where smaller quantities of sludge and grease are created, particularly where access for a disposal truck is limited (for example mountain huts, ships, etc.) or where it is not possible to install a disposal line. Grease separator systems for self-disposal (partial disposal) are disposed of at least twice a week as necessary. Grease and sludge are drained into small collection tanks via manually-operated valves. These small tanks are then collected by delivery vehicles for recycling.




Professional advantages

- **Self disposal grease separator**
With self disposal device for separated floating, setting sludge and grease removal. No disposal truck required. Disposal of waste into standardized 60 liter storage tanks. The separate disposal of grease and sludge can significantly reduce the disposal costs compared to conventional grease separators because the wastewater (approx. 90 % of the total volume) remains in the separator. Valuable drinking water is saved because no water is required to flush, clean or refill the separator during disposal.
- **Simple and fast installation**
Thanks to the low weight and straightforward KESSEL fastening technology, the KESSEL round-design grease separator system can easily be dismantled to minimum component size, allowing it to be set up in rooms with only very narrow access.
- **Multiple set-up options**
Newly designed separators offer multiple set-up options for easy on-site installation. Each separator can be custom assembled on-site to best match on-site room requirements (for example for wall installation - 180 degree assembly, interior corners - 90 degree assembly or exterior corners - 270 degree assembly).
- **Now available with Micro-Bubble option**
KESSEL SE grease separators now available with Micro-Bubble option. Automated compressor injects micro air bubbles into separator tank for high efficiency grease separation.
- System with an external 750 W pump for removing the sediment from the grease separation chamber
- **Grease separator can remain in operation during disposal (no operational interruptions).**

Grease separators for free-standing installation

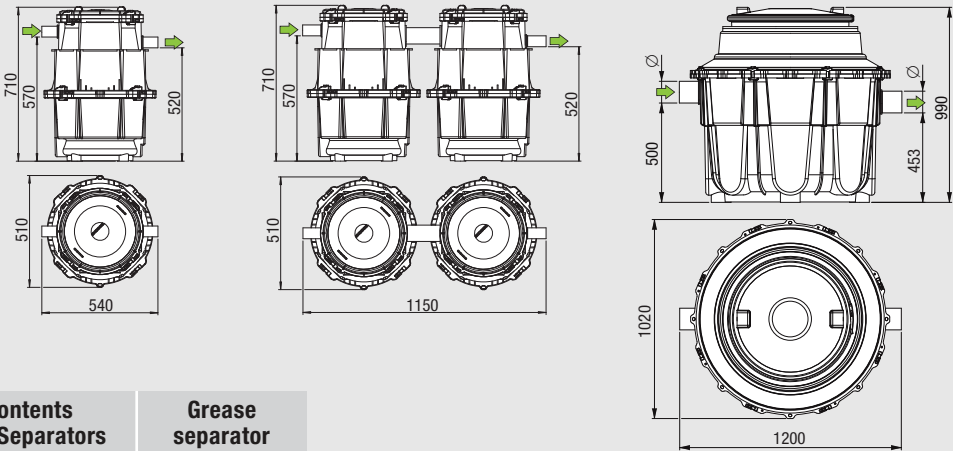
Grease separator *Euro “G”*

Products

Illustration	Article description	NS	Weight	Article #
 <p>Art. # 93 001</p>  <p>Art. # 93 050</p>  <p>Art. # 93 025</p>	Grease separator <i>Euro “G”</i> NS ... <input type="checkbox"/> in accordance with KESSEL standard, made of polyethylene For free-standing installation in frost-protected rooms Note for the operating company: The separated grease must be skimmed off daily in the case of weekly emptying and cleaning.	NS 0.25 NS 0.5 NS 1	20 kg 45 kg 65 kg	93 025 93 050 93 001

Delivery:
 System completely assembled.
Further nominal sizes on request

Ø = Outer diameter



Nominal size	Ø	Wastewater contents		Grease separator
		Sludge trap	Separators	
NS 0.25	50	25 l	28 l	15 l
NS 0.5	50	50 l	42 l	30 l
NS 1	110	100 l	75 l	60 l

i

Technical note:
 Production- and weather-related influences can lead to deviations from our specifications in the case of free-standing separators. For this reason, please check the height specifications in particular for their actual size before installation. Please adapt the pipework to the actual inlet and outlet dimensions before installing the grease separator. Thermal and mechanical influences must be taken into consideration.

Grease separators for free-standing installation

Sampling chamber / SonicControl / TeleControl / RemoteControl / Refill inlet				Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #	
	<p>Sampling chamber Ø 400 made of polymer for separation systems</p> <p>For connection to outlet pipe of separator.</p> <p>Inlet and outlet Ø 110/160 available options for synthetic material pipes in: PE-HD (according to EN 1519-1); PVC-HT, PP or AS, drop height 120 mm.</p> <p>Cover sealed odour-tight with snap closure.</p> <p><input type="checkbox"/> Outlet lateral</p> <p><input type="checkbox"/> Outlet vertical</p>	<p>Ø 110/160</p> <p>Ø 110/160</p>	<p>915 871</p> <p>915 870</p>	
	<p>SonicControl level sensing system with ultra sonic sensor for grease separator</p> <p>Accurate monitoring and data transfer of grease levels.</p> <p>230 V - 50 Hz power connection. With battery back up, connection for remote speaker.</p> <p>Installation set with easy assembly and maintenance.</p> <p>For use on above ground or below ground separators. For retrofit use on existing separators.</p> <p>Control unit with optical and audible alarm with potential free contact.</p> <p>Electronic log book with 12 month capacity.</p> <p>Data transfer by telemetry.</p> <p>Voltage: 230 V ~ 50 Hz</p> <p>Protection: IP 54</p> <p>Plug: Schuko 1.5 m</p> <p>Cable length: 10 m (extendable on-site to 30 meters)</p>	-	917 821	
<p>NEW</p> 	<p>TeleControl telemetric system</p> <p>for connection to KESSEL Comfort control units 230 Volt and 400 Volt.</p> <p>Relaying of full text messages to up to three mobile phones. Without SIM card.</p> <p>TeleControl antenna booster</p> <p>for TeleControl telemetric system</p> <p>incl. 2.5 m cable to improve reception.</p> <p>With magnetic base.</p> <p>Antenna booster extension cable</p> <p>cable length 2.5 m</p>	-	<p>28 792</p> <p>28 793</p> <p>28 794</p>	
	<p>Remote control</p> <p>Fits KESSEL Separation systems for free standing installation, for connection to an isolated ground socket</p> <p>Variant PV+S and D+SP in accordance with DIN 4040 and EN 1825. Cable length 15 m.</p>	-	916 601	
	<p>Refill inlet made of polymer for separation systems</p> <p>according to DIN 1988, for connection to filling and rinsing connection couplings of the separation systems, with two pipe clamps and attachment element together with pipe sealing gasket Ø 63.</p> <p><input type="checkbox"/> Model left 1 inch</p> <p><input type="checkbox"/> Model right 1 inch</p>	-	<p>915 800</p> <p>915 801</p>	


Lifting station *Aqualift F XL* / *Aqualift F Duo* / *Aqualift S*

Accessories

Illustration	Article description	Article #
	<p>Lifting station <i>Aqualift F XL</i> for free-standing installation</p> <p>Ideal for connection to grease separators</p> <p>Duo station with two S1 pumps which can run permanently with non-chokable impeller. Rated input from 1400 W - 4500 W.</p> <p>Including <i>Comfort</i> control unit with display, USB port and self-diagnosis system SDS. 230 Volt or 400 Volt control unit ready for connection thanks to coded connectors.</p> <p>Closure valve made of polyethylene or cast iron.</p>	see page 74 - 77
	<p>Lifting station <i>Aqualift F Duo</i> for free-standing installation</p> <p>Ideal for connection to grease separators</p> <p>With horizontal pressure outlet and closure valve.</p> <p>Duo station with two pumps type SPF with <i>Comfort</i> control unit. <i>Comfort</i> control unit with display, USB port and self- diagnosis system SDS. 230 Volt control unit ready for connection thanks to coded connectors.</p>	see page 72 - 73
	<p>Free lifting station for grey water <i>Aqualift S</i> for free-standing installation</p> <p>Ideal for connection to small grease separators</p> <p>Duo station with two pumps. Pressure control and <i>Comfort</i> control unit with display, USB port and self-diagnosis system SDS. 230 Volt control unit ready for connection thanks to coded connectors.</p>	see page 86 - 87

Grease separators
for underground installation

Grease separators *Euro PV+S Auto Mix & Pump* **NEW** Products

Illustration	NS	Weight	Installation depth D in mm	Cover class A/B Article #	Cover class D Article #
	1 NS 1	270 kg	550 to 950	93 001/80B-K-P1	93 001/80D-K-P1
	NS 2	300 kg	550 to 950	93 002/80B-K-P1	93 002/80D-K-P1
	NS 4	325 kg	550 to 950	93 004/80B-K-P1	93 004/80D-K-P1
	2 NS 1	270 kg	800 to 1200	93 001/120B-K-P1	93 001/120D-K-P1
	NS 2	300 kg	800 to 1200	93 002/120B-K-P1	93 002/120D-K-P1
	NS 4	325 kg	800 to 1200	93 004/120B-K-P1	93 004/120D-K-P1

Certification pending

Grease separator
Euro PV+S Auto Mix & Pump NS 1/2/4
with program-controlled disposal system
and Shredder-Mix system

☐ according to EN 1825 and DIN 4040-100,
made of polyethylene material, pumping
capacity 3.0 kW

For underground installation
Upper section made of polymer material,
continuous height and level compensation,
with cover, class A/B, D according to EN 124
made of cast iron (can be driven over by
cars and trucks), sealed odour-tight,
incl. removal mechanism.

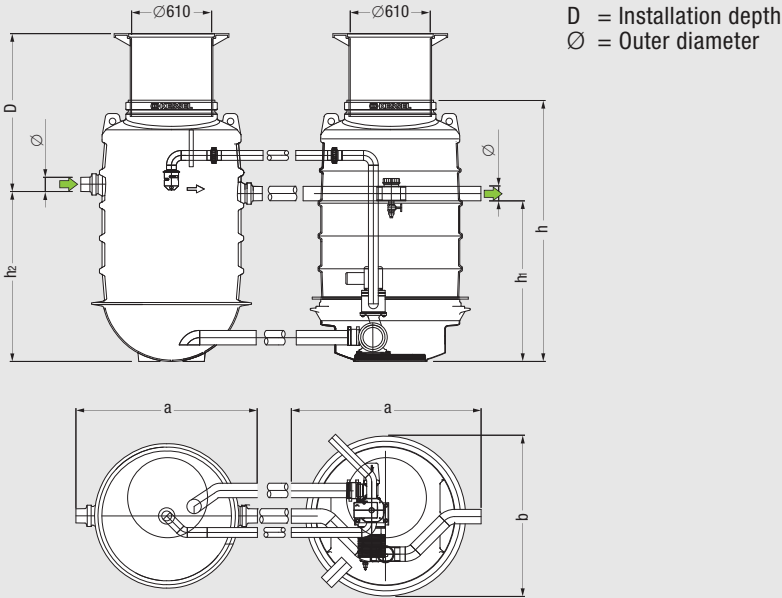
- 1** for underground installation
frost-free depth 800 mm
- 2** for underground installation
frost-free depth 1200 mm

Resistant when installed in the
groundwater up to the lower edge
of the drain outlet.

A load distribution plate must be
planned for class D.

Delivery:
System completely assembled.
Further nominal sizes on request.
On-site connection pipes
(see connection accessories)

Accessories see page 256-258:
Jointing / connection set, disposal chamber Ø 400
sampling chamber, adapter, *SonicControl* (NS 2 and NS 4).
Pumping stations see chapter 3 “lifting stations”.



Nominal size	Ø	a	b	h	h1	h2	Wastewater content		Grease storage
							Sludge trap	Separator	
NS 1	110	1380	1220	1500	690	795	140 l	230 l	70 l
NS 2	110	1380	1220	1750	940	1045	200 l	370 l	120 l
NS 4	110	1380	1220	2000	1210	1295	400 l	370 l	160 l

Grease separators for underground installation

Grease separators *Euro D+SP Auto Mix* **NEW**

Products

Illustration	NS	Weight	Installation depth D in mm	Cover class A/B Article #	Cover class D Article #
	1 NS 1	270 kg	550 to 950	93 001/80B-K-DS-P1	93 001/80D-K-DS-P1
	NS 2	300 kg	550 to 950	93 002/80B-K-DS-P1	93 002/80D-K-DS-P1
	NS 4	325 kg	550 to 950	93 004/80B-K-DS-P1	93 004/80D-K-DS-P1
	2 NS 1	270 kg	800 to 1200	93 001/120B-K-DS-P1	93 001/120D-K-DS-P1
	NS 2	300 kg	800 to 1200	93 002/120B-K-DS-P1	93 002/120D-K-DS-P1
	NS 4	325 kg	800 to 1200	93 004/120B-K-DS-P1	93 004/120D-K-DS-P1

Certification pending

Grease separator
Euro D+SP Auto Mix NS 1/2/4
with program-controlled Shredder-Mix system and direct disposal

- according to EN 1825 and DIN 4040-100, made of polyethylene material, pumping capacity 3.0 kW

For underground installation

Upper section made of polymer material, continuous height and level compensation, with cover, class A/B, D according to EN 124 made of cast iron (can be driven over by cars and trucks), sealed odour-tight, incl. removal mechanism.

- 1** for underground installation frost-free depth 800 mm
- 2** for underground installation frost-free depth 1200 mm

Resistant when installed in the groundwater up to the lower edge of the drain outlet.

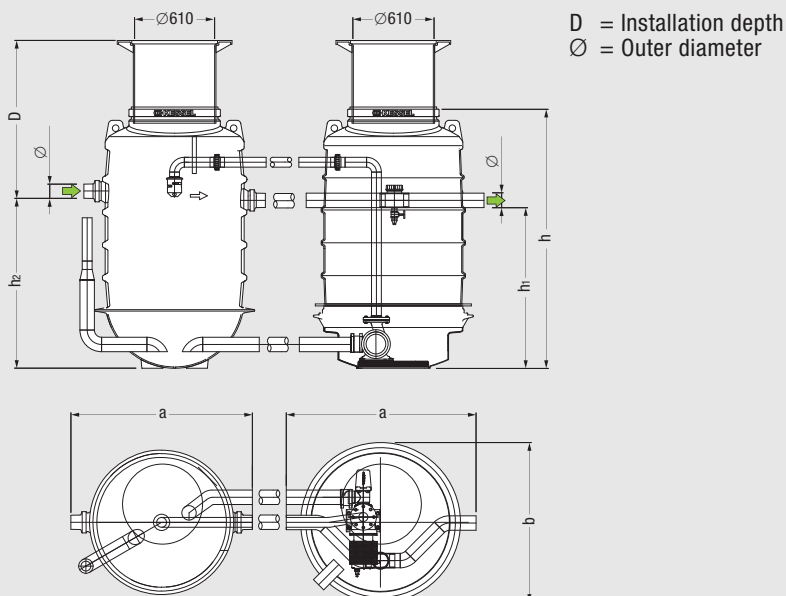
A load distribution plate must be planned for class D.

Delivery:

System completely assembled.
Further nominal sizes on request.
On-site connection pipes
(see connection accessories)

Accessories see page 256-258:


Joining / connection set, disposal chamber Ø 400 sampling chamber, adapter, *SonicControl* (NS 2 and NS 4).
Pumping stations see chapter 3 "lifting stations".



Nominal size	Ø	a	b	h	h1	h2	Wastewater content		Grease storage
							Sludge trap	Separator	
NS 1	110	1380	1220	1500	690	795	140 l	230 l	70 l
NS 2	110	1380	1220	1750	940	1045	200 l	370 l	120 l
NS 4	110	1380	1220	2000	1210	1295	400 l	370 l	160 l

Grease separators
for underground installation

Grease separators *Euro D+S Mix* **NEW** Products

Illustration	NS	Weight	Installation depth D in mm	Cover class A/B Article #	Cover class D Article #
	1 NS 1	270 kg	550 bis 950	93 001/80B-K-DS1	93 001/80D-K-DS1
	NS 2	300 kg	550 bis 950	93 002/80B-K-DS1	93 002/80D-K-DS1
	NS 4	325 kg	550 bis 950	93 004/80B-K-DS1	93 004/80D-K-DS1
	2 NS 1	270 kg	800 bis 1200	93 001/120B-K-DS1	93 001/120D-K-DS1
	NS 2	300 kg	800 bis 1200	93 002/120B-K-DS1	93 002/120D-K-DS1
	NS 4	325 kg	800 bis 1200	93 004/120B-K-DS1	93 004/120D-K-DS1

Certification pending
Grease separator *Euro D+S Mix* NS 1/2/4 with direct disposal and Shredder-mix system
☐ according to EN 1825 and DIN 4040-100, made of polyethylene material, pumping capacity 3.0 kW

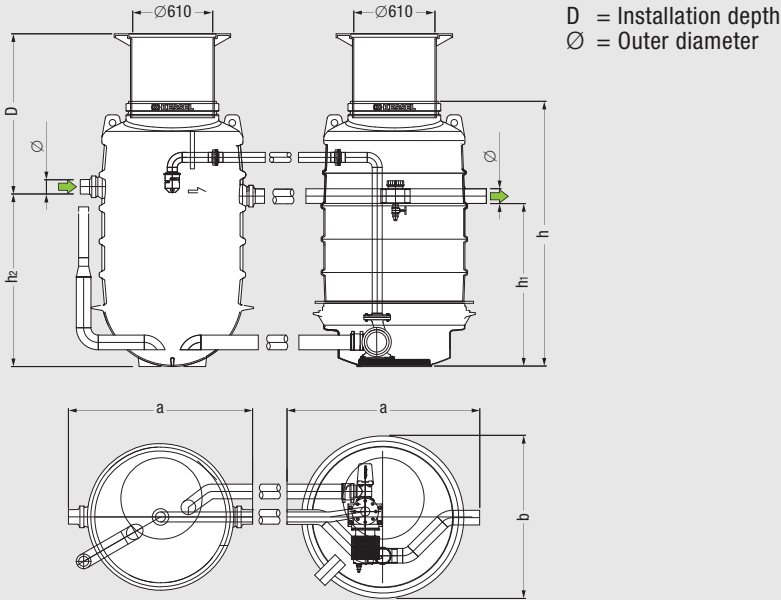
For underground installation
Upper section made of polymer material, continuous height and level compensation, with cover, class A/B, D according to EN 124 made of cast iron (can be driven over by cars and trucks), sealed odour-tight, incl. removal mechanism.

- 1** for underground installation
frost-free depth 800 mm
- 2** for underground installation
frost-free depth 1200 mm

Resistant when installed in the groundwater up to the lower edge of the drain outlet.
A load distribution plate must be planned for class D.

Delivery:
System completely assembled.
Further nominal sizes on request.
On-site connection pipes
(see connection accessories)


Accessories see page 256-258:
Joining / connection set, disposal chamber Ø 400
sampling chamber, adapter, *SonicControl* (NS 2 and NS 4).
Pumping stations see chapter 3 “lifting stations”.



Nominal size	Ø	a	b	h	h1	h2	Wastewater content		Grease storage
							Sludge trap	Separator	
NS 1	110	1380	1220	1500	690	795	140 l	230 l	70 l
NS 2	110	1380	1220	1750	940	1045	200 l	370 l	120 l
NS 4	110	1380	1220	2000	1210	1295	400 l	370 l	160 l

Grease separators for underground installation

Grease separators *Euro G Basic* Products

Illustration	NS	Weight	Installation depth D in mm	Cover class A/B Article #	Cover class D Article #
	1 NS 1	111 kg	550 to 950	93 001/80 B	93 001/80 D
	NS 2	120 kg	550 to 950	93 002/80 B	93 002/80 D
	NS 4	130 kg	550 to 950	93 004/80 B	93 004/80 D
	2 NS 1	111 kg	800 to 1200	93 001/120 B	93 001/120 D
	NS 2	120 kg	800 to 1200	93 002/120 B	93 002/120 D
	NS 4	130 kg	800 to 1200	93 004/120 B	93 004/120 D

Delivery:
System completely assembled.

Further installation depths on request

Accessories see page 256-258:
Sampling chamber, extension section,
direct disposal, *SonicControl* (NS 2 and NS 4).
Pumping stations see chapter 3 "lifting stations".

Certification: Z-54.1-440

Grease separator *Euro G Basic* NS 1/2/4

□ in accordance with EN 1825 and
DIN 4040-100, made of polyethylene

For underground installation

Upper section made of polymer,
infinite height and level adjustment,
with cover class A/B, D in accordance
with EN 124 made of cast iron,
sealed odour-tight, incl. lift-out key.

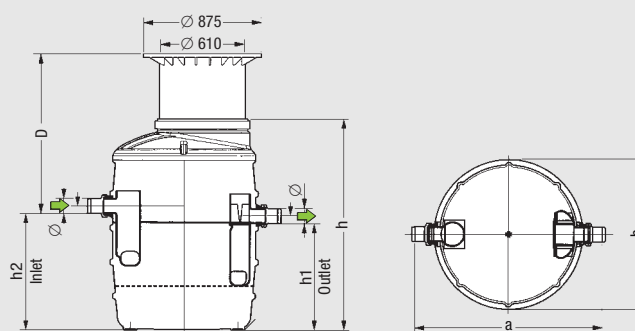
1 for ground installation frost-free depth 800 mm

2 for ground installation frost-free depth 1200 mm

**Resistant when installed
in the groundwater up to 500 mm**

**A load distribution plate must be
provided for class D.**

D = Installation depth
Ø = Outer diameter




Nominal size	Ø	a	b	h ¹⁾	h1	h2	Wastewater contents		Grease separator
							Sludge trap	Separators	
NS 1	110	1380	1106	1050	540	610	140 l	230 l	70 l
NS 2	110	1380	1106	1300	790	860	200 l	370 l	120 l
NS 4	110	1380	1106	1550	1040	1110	400 l	370 l	160 l

¹⁾ Specifications apply for type 80. For type 120, h* = h + 250 mm.

Grease separators for underground installation

Grease separators *Euro G Basic*

Products

Illustration	NS	Weight	Installation depth D in mm	Cover class A/B Article #	Cover class D Article #
	NS 7*	305 kg	745 to 1180	93 007/120 B	93 007/120 D
	NS 10*	360 kg	755 to 1190	93 010/120 B	93 010/120 D
	NS 15*	455 kg	755 to 1190	93 015/120 B	93 015/120 D
	NS 20*	530 kg	750 to 1185	93 020/120 B	93 020/120 D
	NS 25	570 kg	810 to 1245	93 925/120 B	93 925/120 D
	NS 30	570 kg	810 to 1245	93 930/120 B	93 930/120 D
	NS 35	570 kg	660 to 1095	93 935/120 B	93 935/120 D

Delivery:
System completely assembled.

Further installation depths on request

Accessories see page 256-258:
Sampling chamber, extension section,
direct disposal, *SonicControl*.
Pumping stations see chapter 3 "lifting stations".

* **Certification: Z-54.1-440** (NS 7 - 20)

Grease separator *Euro G Basic* NS 7/10/15/20/25/30/35

- ☐ in accordance with EN 1825 and
DIN 4040-100, made of polyethylene

For underground installation

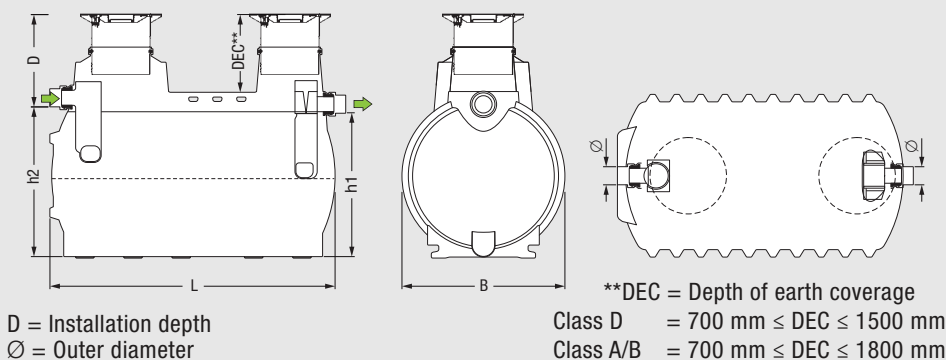
Upper section made of polymer,
infinite height and level adjustment,
with cover class A/B, D in accordance
with EN 124, made of cast iron
(can be driven over by cars and trucks),
sealed odour-tight, incl. lift-out key.

- ☐ for ground installation:
frost-free depth

Minimum installation depth
achieved by sawing the upper
section as required

Installation is possible with ground-
water up to the upper edge of the tank.

A load distribution plate must be
provided for class D.





Nominal size	Ø	L	B	h1	h2	Wastewater contents		Grease separator	D-DEC
						Sludge trap	Separators		
NS 7	160	2080	1200	1030	1100	700 l	1100 l	280 l	155 mm
NS 10	160	2860	1200	1030	1100	1000 l	1600 l	400 l	155 mm
NS 15	200	2300	1760	1550	1620	1500 l	2800 l	600 l	180 mm
NS 20	200	3060	1760	1550	1620	2000 l	3800 l	800 l	180 mm
NS 25	200	3470	2010	1550	1650	2500 l	5300 l	2000 l	480 mm
NS 30	250	3470	2010	1550	1650	3000 l	4800 l	2000 l	480 mm
NS 35	250	3470	2010	1700	1800	3500 l	4800 l	2000 l	330 mm

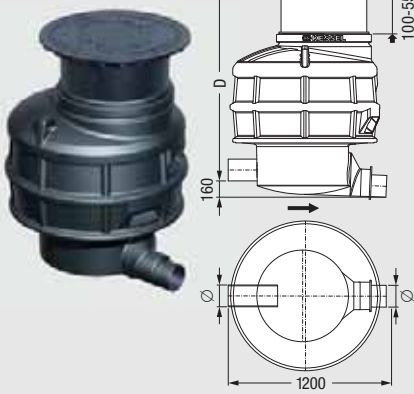


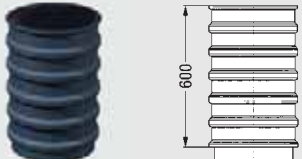
Technical note:

Weather-related influences or cooling of the tanks during the installation phase (caused by filling with cold water) can lead to deviations in dimensions from the catalogue specifications in the case of cisterns and separators installed in the ground.

Grease separators for underground installation

Direct disposal / disposal chamber NEW			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Direct disposal for grease separators <input type="checkbox"/> without disposal chamber	1 -	917 419.00
	Factory equipment for grease separators installed in the ground with direct disposal connection With flange connection Ø 65 PN 10 (welded collar and loose flange) for the suction pipe on site, with Storz-B coupling R 2 1/2" for disposal vehicle, for nominal sizes NS 1 - NS 35 1 Disposal connection right 2 Disposal connection left Delivery: Installed suction device for the joint disposal from sludge trap and separating chamber, tank and direct connection completely assembled, disposal pipe and Storz-B connection on site. Further installation depths, sizes and connections on request	2 -	917 419.50
	Direct disposal for grease separators <input type="checkbox"/> including disposal chamber Ø 400	1 -	917 420.00
	Factory equipment for grease separators installed in the ground with direct disposal connection With flange connection Ø 65 PN 10 (welded collar and loose flange) for the suction pipe on site, with Storz-B coupling R 2 1/2" for disposal vehicle, with chamber system Ø = 400 mm incl. cover class A/B/D, sealed, Installation depth 630 mm to 980 mm for nominal sizes NS 1 - NS 35 1 Disposal connection right 2 Disposal connection left Delivery: Installed suction device for the joint disposal from sludge trap and separating chamber, tank and direct connection completely assembled, disposal pipe on site. Further installation depths, sizes and connections on request	2 -	917 420.50
	Disposal chamber Ø 400 made of polyethylene, for separator systems for installation in the ground, watertight Installation depth (D) 750 mm to 1100 mm With telescopic, height-adjustable upper section made of polymer with clamping ring, with cover class A/B, D in accordance with EN 124 made of cast iron, sealed odour-tight, incl. lift-out key, with Storz-B coupling R 2 1/2" for disposal vehicle for grease separators <i>Euro PV+S Auto Mix & Pump</i> , <i>D+SP Auto Mix</i> and <i>D+S Mix</i>	-	917 422
	Joint and connection set made of polyethylene For connection of the grease separator (NS 1 - NS 4) to the technical chamber for the variants grease separators <i>Euro PV+S Auto Mix & Pump</i> , <i>D+SP Auto Mix</i> and <i>D+S Mix</i> in ground installation, incl. Storz-B coupling, pipe clamps	-	917 421

Grease separators for underground installation

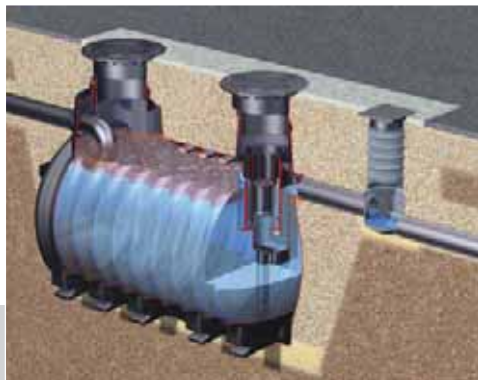
Grease separator in accordance with EN 1825				Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Suitable for grease separator	Article #
	Sampling chamber Ø 1000 in polyethylene, for separation systems, for underground installation Installation depth (D) 1180 - 1630 mm (Other installation depths available on request) Inlet and outlet Ø ... for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC-KG (according to EN 1401-1); PP or AS. With integrated access steps, with telescopically height-adjustable upper section made of polymer, with cover class A/B, D according to EN 124 in cast iron sealed odour-tight, incl. removal mechanism. Drop height 160 mm.	1 Ø 110 Ø 160 Ø 200 2 Ø 110 Ø 160 Ø 200	NS 1/NS 2/NS 4 NS 7 and NS 10 NS 15, NS 20 and custom-made NS 1/NS 2/NS 4 NS 7 and NS 10 NS 15, NS 20 and custom-made	915 10 10 B 915 10 15 B 915 10 20 B 915 10 10 D 915 10 15 D 915 10 20 D
	1 Cover class A/B 2 Cover class D			
	Extension section made of polymer for separation systems Fits all KESSEL Separation systems for underground installation, extension height 510 mm / 1010 mm; incl. gasket smaller/larger extension sections available on request	1 - 2 -	- -	917 406 917 407
	Sampling chamber Ø 400 in polymer, for separation systems, for underground installation Installation depth (D) 400 - 1300 mm (minimum installation depth can be achieved by cutting off) For connection to outlet pipe of separator. Telescopic upper section with clamping ring, cover class A/B/D, sealed odour-tight, without removal mechanism, drop height 120 mm . Drop height 160 mm on request.	1 Ø 110/150 Ø 200 2 Ø 110/150 Ø 200 3 Ø 110/150 Ø 200	- - - - -	915 880 A 915 880 A-200 915 880 B 915 880 B-200 915 880 D 915 880 D-200
	1 Cover class A 2 Cover class B 3 Cover class D Extension by 600 mm with extension section Art. # 915 402			
	Extension section For deep installation Extension height max. 600 mm (can be reduced). Check maintenance accessibility when installing in recesses! For sampling chamber Ø 400 and Ø 450	-	-	915 402

Grease separators for underground installation

Grease separator in accordance with EN 1825

Accessories

Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	<p>SonicControl level sensing system with ultra sonic sensor for grease separator Accurate monitoring and data transfer of grease levels. 230 V - 50 Hz power connection. With battery back up, connection for remote speaker. Installation set with easy assembly and maintenance. For use on above ground or below ground separators. For retrofit use on existing separators. Control unit with optical and audible alarm with potential free contact. Electronic log book with 12 month capacity. Data transfer by telemetry.</p> <p>Voltage: 230 V ~ 50 Hz Protection: IP 54 Plug: Schuko 1.5 m Cable length: 10 m (extendable on-site to 30 meters)</p> <p>Accessories Audible alarm Art. # 20 162, 25 m cable extension available upon request. PE-HD Cable access conduit Art. # 917 822</p>	-	917 821
	<p>Cable access conduit Required for watertight connection of <i>SonicControl</i> cable into separator chamber (for underground separators a conduit pipe with chase wire should be planned)</p>	-	917 822
<p>NEW</p> 	<p>TeleControl telemetric system for connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.</p>	-	28 792
	<p>TeleControl antenna booster for <i>TeleControl</i> telemetric system incl. 2.5 m cable to improve reception. With magnetic base.</p>	-	28 793
	<p>Antenna booster extension cable cable length 2.5 m</p>	-	28 794
	<p>Stainless steel access panel For recessed wall installation with Storz-B disposal pipe hook up connection and remote control connection for use with fully automated grease separators. Remote control not included. Dimensions: 640 x 440 x 160 mm (Width x Height x Depth) Model: "Recessed", 2 doors, lockable</p>	-	917 414
	<p>Stainless steel access panel For wall installation with Storz-B disposal pipe hook-up connection and remote control connection for use with fully automated grease separators. Remote control not included. Dimensions: 600 x 400 x 160 mm (Width x Height x Depth) Model: "Wall installation", 2 doors, lockable</p>	-	917 413



Coalescence separator
with DIBt approval



Oil-/Fuel separator
with DIBt approval

Light liquid separator made of polymer

The German Institute for Structural Engineering (DIBt) has granted site-inspection certification. This makes KESSEL the first manufacturer on the German market to be granted such an inspection certificate.

KESSEL extends the warranty period for tanks beyond the statutory requirement to 20 years.

This covers the water-tightness, usability and static safety of these components.



SYSTEM ADVANTAGES

RESISTANT

Our light liquid separators are resistant to E10 fuel and biodiesel.

SAFE

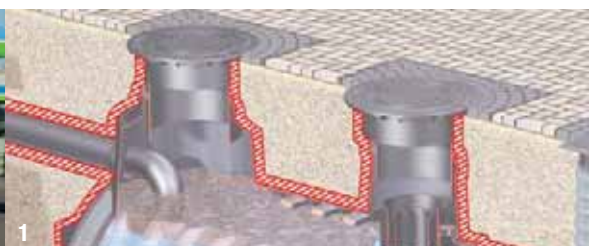
Water-tight up to the top ground surface thanks to variable upper section with lip seal (Fig. 1).

PRACTICAL

Automatic measuring devices *SonicControl*



The long-term solution



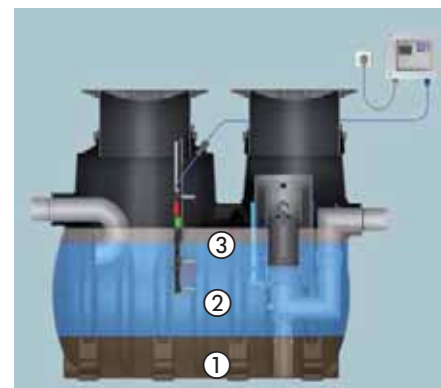
Oil-/Fuel separator, coalescence separator



The principle of gravity in the separator

The separating process is handled in the separator by making use of the principle of gravity (weight and buoyancy). The separator is divided into three zones, the sludge trap ①, the separator chamber ② and the oil trap ③. The sludge trap at the bottom serves to retain sediments such as sand. The oil trap located at the top serves to retain light liquids up to a density of 0.95 g/cm^3 . In the zone between the sludge trap and the oil trap, the so-called separating chamber, the incoming wastewater is calmed to a major extent due to the increase in flow cross-section and in surface area. Under the influence of the above-mentioned forces the light liquid, water and sludge are separated.

Drinking water is one of our most precious resources. Our water is in danger wherever contaminants such as oil and petrol are used, such as at filling stations or during vehicle servicing and cleaning, or where lubricants are used. One single drop of petrol is enough to contaminate 1000 liters of water, which is why environmental damage must be prevented at an early stage. For this reason, soiled waste water is treated and cleaned before it is discharged into the sewage system. These tasks are taken over by light liquid separators.



Oil- / Fuel separators

Oil/fuel separators are used to protect bodies of water and sewage systems from soiling through mineral oils. They work on the principle that the lower specific density of practically insoluble mineral oil products in wastewater makes them float upwards and collect at the surface. The outlet system with self-actuated closure prevents separated materials from flowing out.

Coalescence separators

Coalescence separators basically work on the same gravity principle as oil/fuel separators. To increase coalescence performance or improve draining values, there is an additional coalescence filter insert in the tank, unlike with oil/fuel separators. This insert is made of high-quality polymers and has two functions. Firstly, it has a positive influence on the flow within the separator, secondly it "filters" the entire wastewater through the coalescence material.

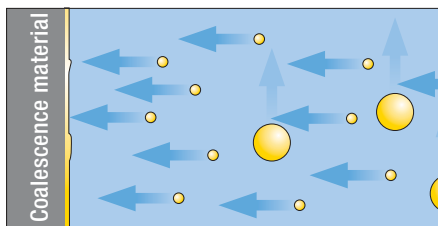


YouTube

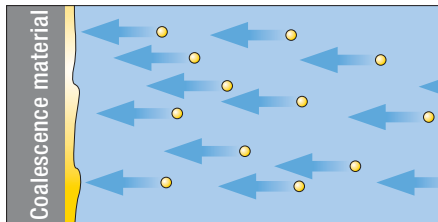
– Preventing environmental damage

Increased capacity using coalescence filter inserts

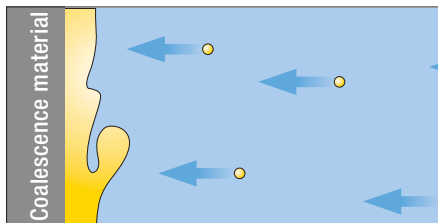
The capacity of the oil/fuel separators can be increased by using coalescence filters. The finest droplets of oil can be separated out owing to the increased separator capacity.



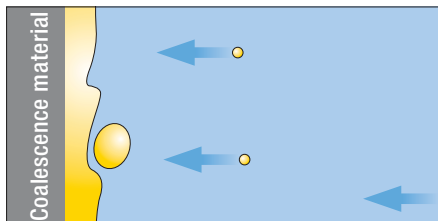
The oil droplets, which are not separated out owing to their different specific gravities with respect to the water, reach the oleophilic coalescence material and combine.



Owing to the coalescence effects, additional oil droplets can be retained. As a result of this, the oil film on the coalescence material continues to increase.



The increased size of the oil film increases the buoyancy. Individual large oil droplets split off.



The oil droplet floats to the surface and is separated out.

Outlet closure lock - self actuated

Oil/fuel separators and coalescence separators are equipped as standard with a self-actuated closure lock. This self-actuated closure lock prevents light liquid being released into the outlet, when the separator reaches its maximum oil/fuel storage volume. In the KESSEL light liquid separator this safety factor consists of a float inside a guide pipe which in normal operation is filled with water. The float is calibrated to float in water and sink in the light liquid (handles all substances with a specific gravity up to 0.95 g/cm³). If the maximum oil storage volume is achieved, the oil flows through lateral openings into the float guide pipe. The float then sinks and completely seals the outlet of the separator.

Automatic measuring device *SonicControl*

In compliance with the Euro standard EN 858-1, light liquid separators must be equipped with automatic warning devices. The ultrasonic measuring instrument *SonicControl* for light liquid separators is used for reliable and continual measurement of the oil layer, the sludge level and detection of backwater.

***SonicControl* for light liquid separators offers the following advantages:**

- Up to three warning devices in one
 - Monitoring of the oil layer
 - Monitoring of the sludge layer
 - Backwater warning
- Control through control unit
- USB - connection for data memory read-out
- Fast and easy installation
- Suitable for all light liquid separators from KESSEL AG
- Can be retrofitted to existing equipment
- Readout software *SonicControl Viewer* available on request



Low disposal costs thanks to oil/sludge extraction feature


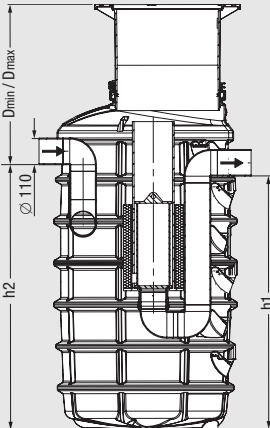
During standard disposal, the hose from the disposal vehicle is held into the light liquid separator and the entire contents are pumped out. However, the quantity of light liquid is significantly lower than the total volume of the separator. Here, the situation is remedied with the oil extraction device. The suction hose is coupled to the oil suction system for disposal of the light liquid. This means that the disposal vehicle can only dispose of the volume that corresponds to the maximum quantity of light liquid. This saves time during disposal, reduces disposal costs and goes easy on the built-in components in the separator.

In the same way, the sludge suction system can be used to significantly reduce the disposal quantity too.

Coalescence separator for underground installation

Grease separator in accordance with EN 1825

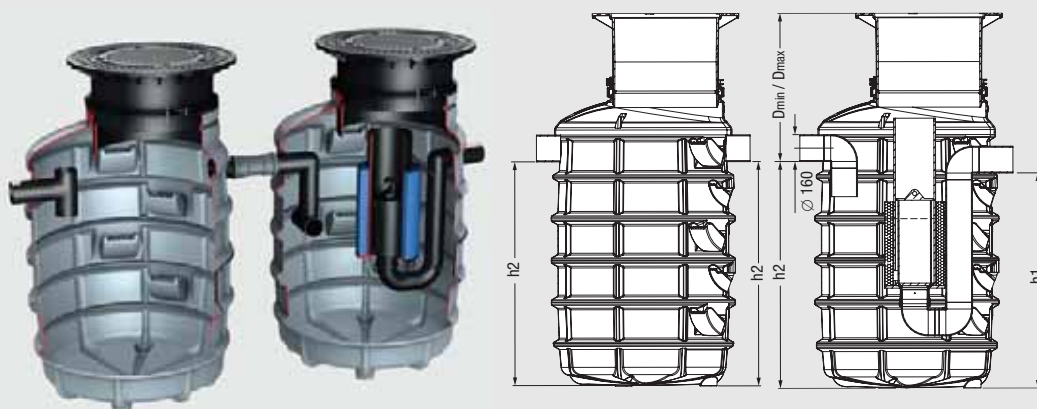
Products

Illustration	Article description	NS	Sludge trap capacity	Article #
 	Coalescence separator class I Ø 1000 <input type="checkbox"/> according to EN 858, made of polyethylene For underground installation, installation depth D from 565 to 1015 mm With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm ³ .	1 NS 6 NS 6 NS 3 NS 6 ¹⁾ NS 3 NS 6 ¹⁾	200 liter 600 liter 800 liter 1000 liter 1600 liter 1800 liter	99 706.02B 99 706.06B 99 703.04B 99 706.10B 99 703.10B 99 706.18B
	With removable coalescence filter insert. Completely water tight to top of cover, resistant against aggressive wastewaters. Vertically adjustable polymer upper section, tiltable to 5°, cast iron manhole cover according to EN 124, load class D, with removal key, certified structural test. Inlet and outlet Ø for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS. Choose separator size and article number from table below. Contact KESSEL for separator sizing support if required.	2 NS 6 NS 6 NS 3 NS 6 ¹⁾ NS 3 NS 6 ¹⁾	200 liter 600 liter 800 liter 1000 liter 1600 liter 1800 liter	99 706.02D 99 706.06D 99 703.04D 99 706.10D 99 703.10D 99 706.18D
	1 Cover class A/B			
	2 Cover class D			

Accessories:
see page 266 and 268

Delivery:
Completely assembled.

Not for installation in high groundwater areas!




NS	Ø*	Sludge disposal volume in liter	D		Weight in kg	h2 (Inlet bottom) in mm	h1 (Outlet bottom) in mm	Oil storage capacity in liter
			min	max				
NS 6	160	100	560	1090	175	1090	1020	200
NS 6	160	300	560	1090	175	1590	1520	200
NS 3	110	400	545	995	175	1105	1055	200
NS 6 ¹⁾	160	500	560	1090	305	1090	1020	200
NS 3	110	800	545	995	190	1605	1555	200
NS 6 ¹⁾	160	800	560	1090	320	1590	1520	200
NS 6	160	100	560	1090	205	1090	1020	200
NS 6	160	300	560	1090	220	1590	1520	200
NS 3	110	400	545	995	205	1105	1055	200
NS 6 ¹⁾	160	500	560	1090	338	1090	1020	200
NS 3	110	800	545	995	220	1605	1555	200
NS 6 ¹⁾	160	900	560	1090	353	1590	1520	200

¹⁾ = Twin-chamber system * Ø = Inlet and outlet outer diameter (mm)

Coalescence separator for underground installation with DIBt-Certification

Coalescence separator NS 3 - NS 15

Products

Illustration	Article description	NS	Total volume	Article #
<p>Suitable for filling stations with high-performance filling pumps, E10 and biodiesel fuels</p> 	<p>Coalescence separator NS 3 - NS 15, class I 1</p> <p>□ according to EN 858, made of polymer</p> <p>For underground installation, installation depth D = mm</p> <p>With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm³.</p> <p>With removable coalescence filter.</p>	NS 3	1800	99 503.10B EX
		NS 6	4300	99 706.30B EX
		NS 6	5800	99 706.80B EX
		NS 10	2600	99 710.15B EX
		NS 10	4300	99 710.30B EX
		NS 10	5800	99 710.80B EX
	<p>Upper sections made of polymer, continuous height and level adjustment, tiltable to 5°, with covers class B, D according to EN 124 in cast iron, including removal mechanism, private vehicle traffic proof (depth of earth coverage DEC 700 to 1800 mm), traffic proof for heavy duty vehicles (depth of earth coverage DEC 700 to 1500 mm and additional concrete slab provided on-site), certified statics, Inlet and outlet Ø ... for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS.</p> <p>Choose separator size and article number from table below. Contact KESSEL for separator sizing support if required.</p> <p>1 Cover class A/B</p> <p>2 Cover class D</p>	NS 15	5800	99 715.80B EX
		2 NS 3	1800	99 503.10D EX
		NS 6	4300	99 706.30D EX
		NS 6	5800	99 706.80D EX
		NS 10	2600	99 710.15D EX
		NS 10	4300	99 710.30D EX
		NS 10	5800	99 710.80D EX
		NS 15	5800	99 715.80D EX

Certification no. Z-54.3-454

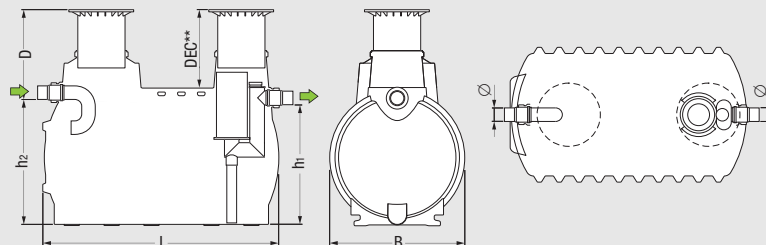
Change pending

Accessories:

Sampling chamber for underground installation, extension section for deep installation, alarm units for when the maximum oil level is reached and there is a back-up of water (required according to EN 858) Part 1, oil and sludge suction system, pump station, *SonicControl*, *TeleControl*.

Installation is possible with groundwater up to the base of the tank outlet.

A load distribution plate must be planned for class D.



Ø 160: D-DEC = 155 mm

Ø 200: D-DEC = 180 mm

**DEC = Depth of earth coverage
Class D = 700 mm ≤ DEC ≤ 1500 mm
Class A/B = 700 mm ≤ DEC ≤ 1800 mm

NS	Ø*	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level	Weight	Lmax mm
NS 3	160	1000 l	2080	1200	min	max	1110	1040	187 l	80 mm	395 kg	3080
NS 6	200 ²⁾	2500 l ¹⁾	2300	1760	850	1230	1630	1560	265 l	100 mm	535 kg	3535
NS 6	200 ²⁾	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	610 kg	4295
NS 10	160	1500 l	2860	1200	840	1240	1110	1040	262 l	100 mm	440 kg	3860
NS 10	200 ²⁾	2500 l ¹⁾	2300	1760	850	1230	1630	1560	265 l	100 mm	535 kg	3535
NS 10	200 ²⁾	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	610 kg	4295
NS 15	200	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	610 kg	4295

¹⁾ Comparable sludge trap total volume in accordance with the dimensioning according to EN 858.

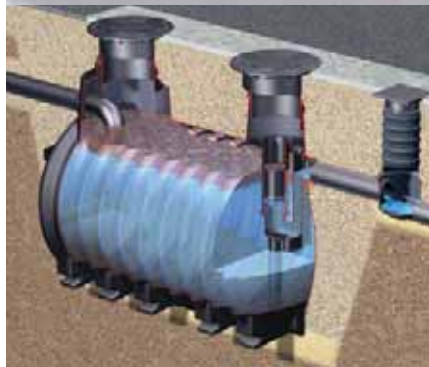
²⁾ eccentric reduction inlet/outlet to Ø 160 possible on-site, as a consequence the sampling chamber 915880 A/B/D can be used see page 266.

* Ø = Inlet and outlet outer diameter (mm)

Oil-/fuel separator for underground installation with DIBt-Certification

Oil-/fuel separator NS 3 - NS 20

Products

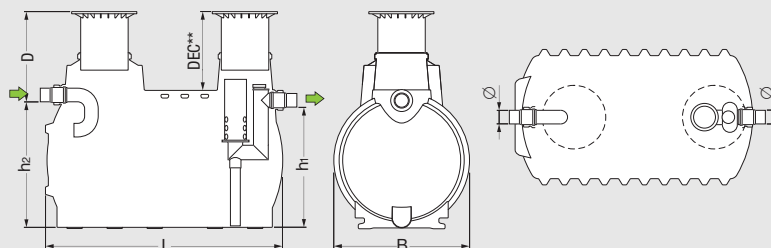
Illustration	Article description	NS	Total volume	Article #
Suitable for filling stations with high-performance filling pumps, E10 and biodiesel fuels 	Oil-/fuel separator NS 3 - NS 20, class II <input type="checkbox"/> according to EN 858, made of polymer For underground installation, installation depth D = mm With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm ³ . Upper sections made of polymer, continuous height and level adjustment, tiltable up to 5°, with covers class B, D according to EN 124 in cast iron, incl. removal mechanism, private vehicle traffic proof (depth of earth coverage DEC 700 to 1800 mm), traffic proof for heavy duty vehicles (depth of earth coverage DEC 700 to 1500 mm and additional concrete slab provided on-site), certified statics, Inlet and outlet Ø ... for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS. Choose separator size and article number from table below. Contact KESSEL for separator sizing support if required.			
	1 Cover class A/B 2 Cover class D			
		NS 3 1800 NS 6 4300 NS 6 5800 NS 10 2600 NS 10 4300 NS 10 5800 NS 15 5800 NS 20 5800	1800 4300 5800 2600 4300 5800 5800 5800	99 403.10B EX 99 606.30B EX 99 606.80B EX 99 610.15B EX 99 610.30B EX 99 610.80B EX 99 615.80B EX 99 620.80B EX
		NS 3 1800 NS 6 4300 NS 6 5800 NS 10 2600 NS 10 4300 NS 10 5800 NS 15 5800 NS 20 5800	1800 4300 5800 2600 4300 5800 5800 5800	99 403.10D EX 99 606.30D EX 99 606.80D EX 99 610.15D EX 99 610.30D EX 99 610.80D EX 99 615.80D EX 99 620.80D EX

Certification no. Z-54.2-453

Change pending

Accessories:

Sampling chamber for underground installation, extension section for deep installation, alarm units for when the maximum oil level is reached and there is a back-up of water (required according to EN 858) Part 1, oil and sludge suction system, coalescence filter insert for retrofitting to the coalescence separator, pump station, *SonicControl*, *TeleControl*.



Ø 160: D-DEC = 155 mm

Ø 200: D-DEC = 180 mm

Installation is possible with groundwater up to the base of the tank outlet.

A load distribution plate must be planned for class D.

**DEC = Depth of earth coverage

Class D = 700 mm ≤ DEC ≤ 1500 mm

Class A/B = 700 mm ≤ DEC ≤ 1800 mm

NS	Ø*	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level	Weight	Lmax mm
					min	max						
NS 3	150	1000 l	2080	1200	840	1240	1110	1040	187 l	80 mm	379 kg	3080
NS 6	200 ²⁾	2500 l ¹⁾	2300	1760	850	1230	1630	1560	265 l	100 mm	519 kg	3535
NS 6	200 ²⁾	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	594 kg	4295
NS 10	150	1500 l	2860	1200	840	1240	1110	1040	262 l	100 mm	424 kg	3860
NS 10	200 ²⁾	2500 l ¹⁾	2300	1760	850	1230	1630	1560	265 l	100 mm	519 kg	3535
NS 10	200 ²⁾	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	594 kg	4295
NS 15	200	5000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	594 kg	4295
NS 20	200	4000 l	3060	1760	870	1250	1630	1560	380 l	130 mm	600 kg	4295

¹⁾ Comparable sludge trap total volume in accordance with the dimensioning according to EN 858-2.

²⁾ eccentric reduction inlet/outlet to Ø 160 possible on-site, as a consequence the sampling chamber 915880 A/B/D can be used see page 266.



Technical note:

Weather-related influences or cooling of the tanks during the installation phase (caused by filling with cold water) can lead to deviations in dimensions from the catalogue specifications in the case of cisterns and separators installed in the ground.

* Ø = Inlet and outlet outer diameter (mm)

Oil-/fuel separator for underground installation

Oil-/fuel separator NS 1.5 according to KESSEL Standard

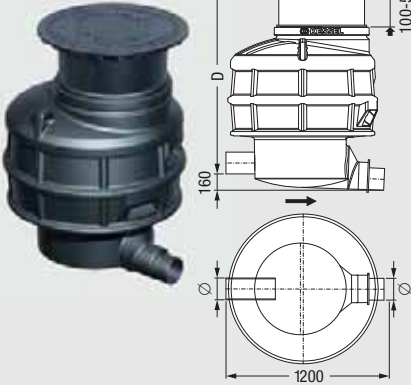
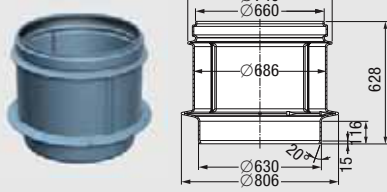
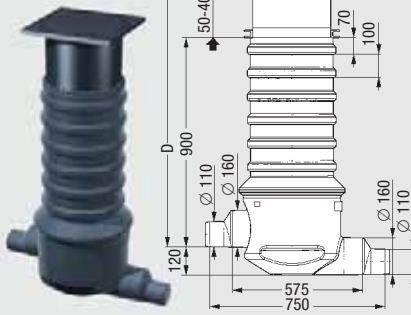
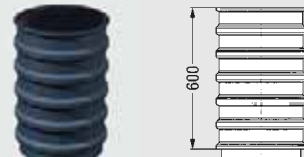
Products

Illustration and dimensioned drawing	Article description	Ø	Weight	Article #																																		
	<p>Oil-/fuel separator NS 1.5, class II, Ø 1000</p> <p>For underground installation, installation depth D = mm</p> <p>With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm³.</p> <p>Optional with backwater flap valve according to DIN 13564</p> <p>Upper sections made of polymer, continuous height and level adjustment, cover class D. Inlet and outlet Ø 110 for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS.</p> <p>Accessories:</p> <p>Sampling chamber for underground installation, alarm unit when the maximum oil level is reached and there is a back-up of water (required according to EN 858), pump station.</p> <p>A <i>SonicControl</i> automatic measuring device not for use with this separator.</p>	1000	110 kg	99 601.041D																																		
					<table><tr><th>NS</th><th>Ø</th><th>Sludge trap capacity</th><th>L</th><th>B</th><th colspan="2">D</th><th>h2</th><th>h1</th><th>Oil storage capacity</th><th>Excess level</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th>min</th><th>max</th><th></th><th></th><th></th><th></th></tr><tr><td>NS 1.5</td><td>110</td><td>360 l</td><td>1425</td><td>1300</td><td>570</td><td>995</td><td>630</td><td>583</td><td>110 l</td><td>70</td></tr></table>	NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level						min	max					NS 1.5	110	360 l	1425	1300	570	995	630	583	110 l	70
NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level																												
					min	max																																
NS 1.5	110	360 l	1425	1300	570	995	630	583	110 l	70																												
	<p>Oil-/fuel separator NS 1.5, class II, Ø 800</p> <p>For underground installation, installation depth D = mm</p> <p>With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm³.</p> <p>Optional with backwater flap valve according to DIN 13564</p> <p>Upper sections made of polymer, continuous height and level adjustment, cover class B/D. Inlet and outlet Ø 110 for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS.</p> <p>Accessories:</p> <p>Sampling chamber for underground installation, alarm unit when the maximum oil level is reached and there is a back-up of water (required according to EN 858), pump station.</p> <p>A <i>SonicControl</i> automatic measuring device not for use with this separator.</p>	800 800	74 kg 74 kg	99 601.016B 99 601.016D																																		
					<table><tr><th>NS</th><th>Ø</th><th>Sludge trap capacity</th><th>L</th><th>B</th><th colspan="2">D</th><th>h2</th><th>h1</th><th>Oil storage capacity</th><th>Excess level</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th>min</th><th>max</th><th></th><th></th><th></th><th></th></tr><tr><td>NS 1.5</td><td>110</td><td>130 l</td><td>1091</td><td>1012</td><td>518</td><td>942</td><td>508</td><td>461</td><td>70.5 l</td><td>50</td></tr></table>	NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level						min	max					NS 1.5	110	130 l	1091	1012	518	942	508	461	70.5 l	50
NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level																												
					min	max																																
NS 1.5	110	130 l	1091	1012	518	942	508	461	70.5 l	50																												
	<p>Oil-/fuel separator NS 1.5, class II, Ø 400</p> <p>For underground installation, installation depth D = mm</p> <p>With integrated sludge trap and self-actuated closure lock, calibrated for light liquid with densities between 0.85 to 0.95 g/cm³.</p> <p>Optional with backwater flap valve according to DIN 13564</p> <p>Upper sections made of polymer, continuous height and level adjustment, cover class B. Inlet and outlet Ø 110 for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC pipe (according to EN 1401-1); PP or AS.</p> <p>Accessories:</p> <p>Sampling chamber for underground installation, pump station. A <i>SonicControl</i> automatic measuring device not for use with this separator.</p>	400	12 kg	99 601.002B																																		
					<table><tr><th>NS</th><th>Ø</th><th>Sludge trap capacity</th><th>L</th><th>B</th><th colspan="2">D</th><th>h2</th><th>h1</th><th>Oil storage capacity</th><th>Excess level</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th>min</th><th>max</th><th></th><th></th><th></th><th></th></tr><tr><td>NS 1.5</td><td>110</td><td>17 l</td><td>582</td><td>520</td><td>231</td><td>324</td><td>389</td><td>342</td><td>17.6 l</td><td>50</td></tr></table>	NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level						min	max					NS 1.5	110	17 l	582	520	231	324	389	342	17.6 l	50
NS	Ø	Sludge trap capacity	L	B	D		h2	h1	Oil storage capacity	Excess level																												
					min	max																																
NS 1.5	110	17 l	582	520	231	324	389	342	17.6 l	50																												





Oil-/fuel separator / Coalescence separator for underground installation

Sampling chamber / Extension section



Accessories



Illustration and dimensioned drawing	Article description	Nominal width	Suitable for grease separator	Article #
	<p>Sampling chamber Ø 1000 in polyethylene, for separation systems, for underground installation</p> <p>Installation depth (D) 1180 - 1630 mm (Other installation depths available on request)</p> <p>Inlet and outlet Ø ... for synthetic material pipes in: PE-HD (according to EN 12666-1); PVC (according to EN 1401-1); PP or AS.</p> <p>With integrated access steps, with telescopically height-adjustable upper section made of polymer, with cover class A/B, D according to EN 124 in cast iron sealed odour-tight, incl. removal mechanism. Drop height 160 mm.</p> <p>1 Cover class A/B 2 Cover class D</p>	<p>1 Ø 110 Ø 160 Ø 200</p> <p>2 Ø 110 Ø 160 Ø 200</p>	<p>NS 1/NS 2/NS 4 NS 7 and NS 10 NS 15, NS 20 and custom-made</p> <p>NS 1/NS 2/NS 4 NS 7 and NS 10 NS 15, NS 20 and custom-made</p>	<p>915 10 10 B 915 10 15 B 915 10 20 B</p> <p>915 10 10 D 915 10 15 D 915 10 20 D</p>
	<p>Extension section made of polymer for separation systems</p> <p>Fits all KESSEL separation systems for underground installation, extension height 510 mm / 1010 mm; incl. gasket smaller/larger extension sections available on request</p> <p>1 Extension height 510 mm 2 Extension height 1010 mm</p>	<p>1 - 2 -</p>	<p>- -</p>	<p>917 406 917 407</p>
	<p>Sampling chamber Ø 400 in polymer, for separation systems, for underground installation</p> <p>Installation depth (D) 400 - 1300 mm (minimum installation depth can be achieved by cutting off)</p> <p>For connection to outlet pipe of separator. Telescopic upper section with clamping ring, cover class A/B/D, sealed odour-tight, without removal mechanism, drop height 120 mm. Drop height 160 mm on request.</p> <p>1 Cover class A 2 Cover class B 3 Cover class D</p> <p>Extension by 600 mm with extension section Art. # 915 402</p>	<p>1 Ø 110/150 Ø 200</p> <p>2 Ø 110/150 Ø 200</p> <p>3 Ø 110/150 Ø 200</p>	<p>- - - - -</p>	<p>915 880 A 915 880 A-200</p> <p>915 880 B 915 880 B-200</p> <p>915 880 D 915 880 D-200</p>
	<p>Extension section</p> <p>For deep installation</p> <p>Extension height max. 600 mm (can be reduced).</p> <p>Check maintenance accessibility when installing in recesses!</p> <p>For sampling chamber Ø 400 and Ø 450</p>	<p>-</p>	<p>-</p>	<p>915 402</p>

Oil-/fuel separator / Coalescence separator for underground installation

Oil-/fuel separator / Coalescence separator			Accessories
Illustration	Article description	Type	Article #
 <p>Certification: BVS 11 ATEX E 040 X</p> <div> <p>- Can be used in explosive areas (Zone 0)</p> <p>- Acc. to RL 94/9/EC designed in ignition protection class "Intrinsic safety"</p> </div>	<p>SonicControl level sensing system with ultra sonic sensor for oil / coalescence separators from NS 3. With ATEX certification Accurate monitoring and data transfer...</p> <p><input type="checkbox"/> ...Type 1 OSA of oil- and sludge layer thickness and back-up / overflow warning;</p> <p><input type="checkbox"/> ...Type 2 OS of oil- and sludge layer thickness;</p> <p><input type="checkbox"/> ...Type 3 OA of oil layer thickness and back-up / overflow warning;</p> <p><input type="checkbox"/> ...Type 4 SA of sludge layer thickness and back-up / overflow warning;</p> <p><input type="checkbox"/> ...Type 5 O of oil layer thickness;</p> <p><input type="checkbox"/> ...Type 6 S of sludge layer thickness;</p> <p><input type="checkbox"/> ...Type 7 A back-up / overflow warning;</p> <p>With power chord, battery buffer system and connection for remote signalling device.</p> <p>Voltage: 230 V ~ 50 Hz; Protection type: IP 54; Plug: Schuko (double pole); Cable length: 30 m with cable duct set</p> <p>The sensor cable can be extended to a total length of 60 m.</p>	Type 1	917 824
		Type 2	917 825
		Type 3	917 826
		Type 4	917 827
		Type 5	917 828
		Type 6	917 829
		Type 7	917 830
<p>NEW</p> 	<p>TeleControl telemetric system for connection to KESSEL Comfort control units 230 Volt and 400 Volt. Relaying of full text messages to up to three mobile phones. Without SIM card.</p>	-	28 792
	<p>TeleControl antenna booster for TeleControl telemetric system incl. 2.5 m cable to improve reception. With magnetic base.</p>	-	28 793
	<p>Antenna booster extension cable cable length 2.5 m</p>	-	28 794
	<p>Cable extension set SonicControl for oil-, coalescence separators</p> <p><input type="checkbox"/> 10 m cable length</p>	-	917 861
	<p><input type="checkbox"/> 20 m cable length</p>	-	917 862
	<p><input type="checkbox"/> 30 m cable length</p>	-	917 863
	<p>Cable access conduit Required for watertight connection of SonicControl cable into separator chamber (for underground separators a conduit pipe with chase wire should be planned)</p>	-	917 822

Oil/fuel separator / Coalescence separator for underground installation

Oil/fuel separator / Coalescence separator			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Oil / fuel suction system Intake suction hose (50 cm length) for direct suction of oil / fuel into disposal vehicle. Equipped with Storz B connection coupling.	Ø 160 Ø 200	917 803 917 808
	Sludge suction system Intake suction hose (50 cm length) for direct suction of sludge / sediment into disposal vehicle. Equipped with Storz B connection coupling.	Ø 160 Ø 200	917 804 917 809

Coalescence separator			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Coalescence filter insert for retrofitting the KESSEL Oil/fuel separator NS 3 - NS 15 to coalescence separator	-	917 805
	Coalescence filter for KESSEL coalescence separator class I Ø 1000	-	917 816



Underground lifting stations for use after oil-/fuel and coalescence separators see chapter 3 "lifting stations".



6 Wastewater treatment systems

InnoClean PLUS **wastewater treatment systems**

Page **273 – 276**

Small sewage treatment plants
using the activated sludge principle (SBR)

Renovation/retrofit set and OEM original equipment set *InnoClean PLUS*

Page **280**

for concrete tanks

Collecting tank without drain

Page **281 – 282**

for domestic wastewater

InnoClean PLUS wastewater treatment systems made of polyethylene



InnoClean PLUS
wastewater treatment system
made of polyethylene

SYSTEM ADVANTAGES / INSTALLATION

InnoClean PLUS wastewater treatment system

Proven wastewater treatment method using SBR reactors - biological treatment method with technical wastewater aeration.

CONVENIENCE

Only two maintenance checks per year rather than three thanks to automatic power failure recognition.

Low power costs - economy and holiday modes reduce energy costs.

Interactive control unit (Fig. 1) with digital display and user-friendly user interface.

Treatment tower and perforated aeration rod can be removed without having to enter or empty the tank (Fig. 2).

INSTALLATION

Installation made easier thanks to plug-and-play delivery (Fig. 3).

Low weight, small installation dimensions.

Telescopic, height-adjustable upper section can be driven over by passenger cars (Fig. 4, 5).

20-year warranty
for PE material



YouTube



In remote rural areas in particular, houses are not always connected to the public sewer system. Polyethylene septic tanks are much more than just an alternative to concrete systems. Low transport costs, absolute watertightness, durability and extreme fracture resistance are just a few of the advantages of the polyethylene material used.



OEM original equipment set **InnoClean PLUS**
for two-chamber tanks made of concrete

Renovation/retrofitting set **InnoClean PLUS**
for septic and three-chamber tanks made of concrete

SYSTEM ADVANTAGES / INSTALLATION

OEM original equipment set

Treatment tower with integrated sampling chamber for use in two-chamber tanks made of concrete to add an additional biological treatment stage using the activated sludge method SBR.

CONVENIENCE

Energy-saving and low-maintenance air lift pumps (pneumatic).
Automatic power failure detection (2 maintenance checks/year).
Perforated aeration rod can also be removed when the tank is full.
Interactive control unit in several languages.

INSTALLATION

Pre-assembled in the factory, very straightforward mounting through simple clipping onto the partition wall.

SYSTEM ADVANTAGES / INSTALLATION

renovation/retrofit set

For retrofitting conventional septic and three-chamber tanks made of concrete to add an additional biological treatment stage using the activated sludge method SBR.

CONVENIENCE

Energy-saving and low-maintenance pneumatic lifting technology.
Automatic power failure detection (2 maintenance checks/year).
Perforated aeration rod can also be removed when the tank is full.
Interactive control unit in several languages.

INSTALLATION


Very straightforward mounting through simple clipping onto the partition walls. No intervention in the direction of system flow and thus no need for any excavation work (except for the cable conduit).

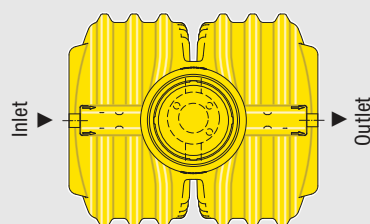


InnoClean PLUS wastewater treatment systems for underground installation

Single tank system

Products

Illustration / Article description	Population equivalent *	Total capacity of the system (liters)	Weight in kg (approx.)	Installation version		
				①	②	③
	PE 4	4800 l	530	97 804	97 804A	97 804B
	PE 6	4800 l	530	97 806	97 806A	97 806B
	PE 8	7600 l	700	97 808	97 808A	97 808B
	PE 10	7600 l	700	97 810	97 810A	97 810B



GW = max. ground water level (Dmin 700 mm)
 DEC = depth of earth coverage
 h_{empty} = height of cable piping

InnoClean PLUS Fully biological wastewater treatment system according to EN 12566 manufactured from polyethylene

Single body (monolythic) tank, for underground installation. Installation depth D = mm. Chamber with gasketed inlet / outlet openings for connection of Ø 160 mm PVC inlet and outlet piping according to EN 1401-1 or for Ø 160 mm PE-HD inlet and outlet piping according to EN 12666-1. For installation in high groundwater areas, maximum groundwater level GW = 1840 mm. With integrated, pre-installed cleaning system. All ventilation hoses and clamps for connection of InnoClean PLUS tank to control unit / compressor are included with system.

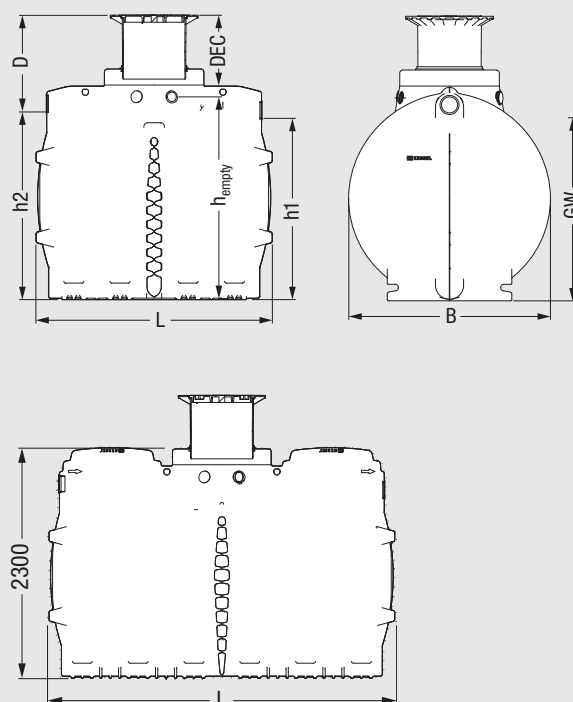
With control unit and low maintenance compressor (230 V 50 Hz). Float switch and air compressor connections to be made on-site.

Certification number: Z-55.3-185 / Z-55.3-187

Installation versions:

- ① With polyethylene temporary construction debris cover (can be used as a cover in green areas if there is sufficient protection against unauthorised opening).
- ② With polymer vertically adjustable upper section, with polymer cover (600 kg load class).
- ③ With polymer vertically adjustable upper section, with concrete / cast iron cover (Class B, 12.5 t).

Accessories: see page 277 to page 279

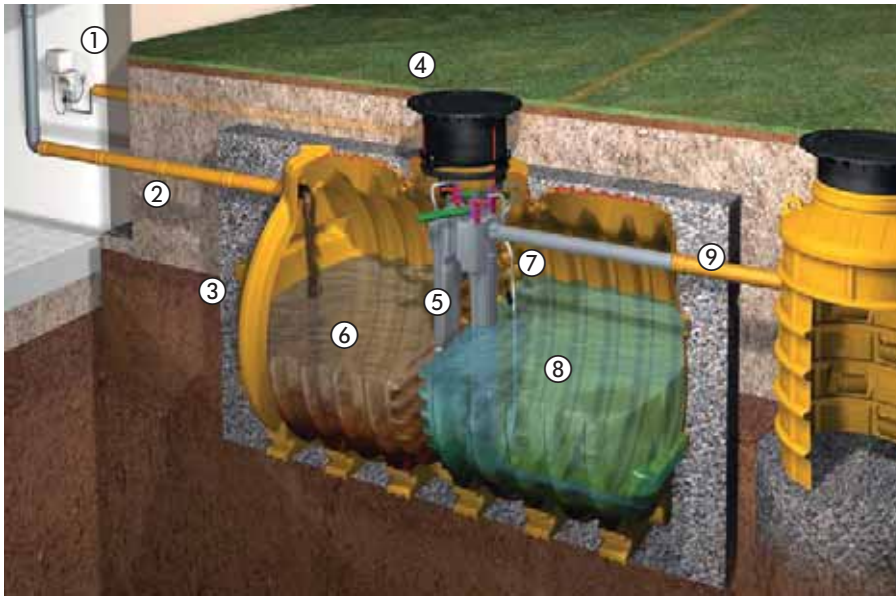


Population equivalent *	L	B	D		DEC = D	GW	h2	h1	h _{empty}
			min.	max.					
PE 4	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 6	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 8	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 10	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000

* Population equivalent = number of people living in home which will be connected to the InnoClean PLUS

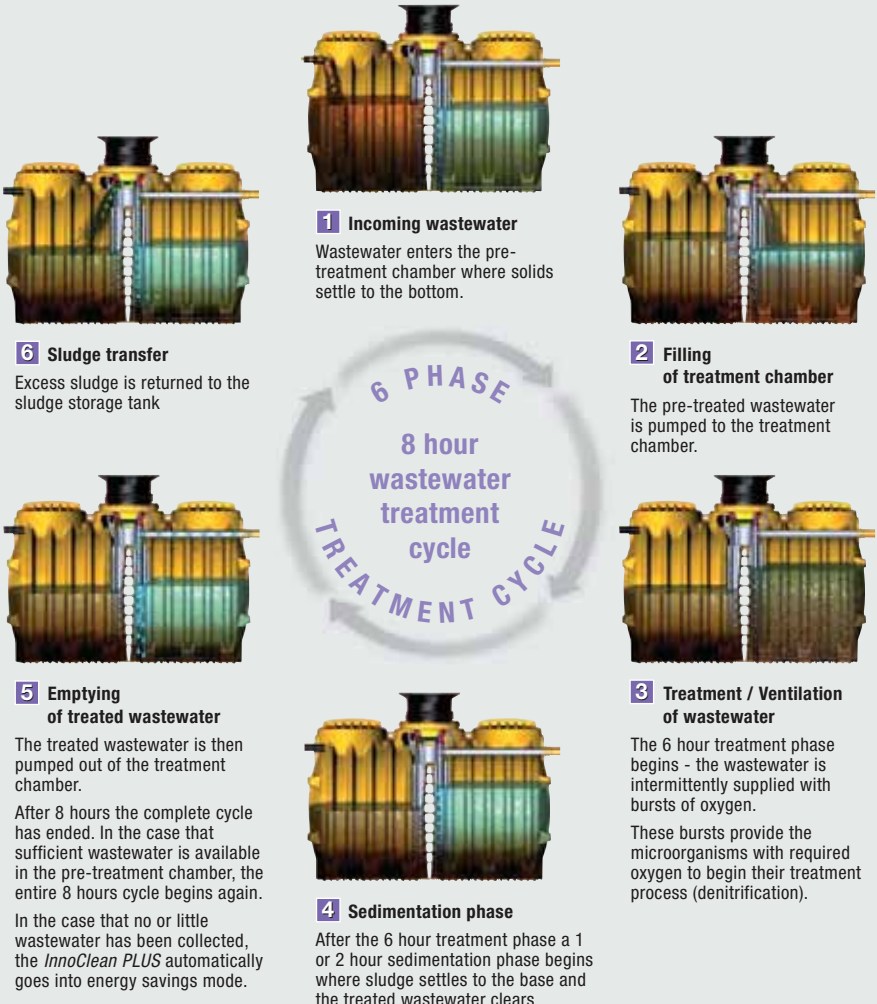
InnoClean PLUS wastewater treatment systems for underground installation

Installation example



- | | |
|---|------------------------------|
| ① Control unit and compressor | ⑥ Pre-treatment chamber |
| ② Wastewater inlet | ⑦ Integrated separation wall |
| ③ KESSEL InnoClean PLUS tank | ⑧ Activation chamber |
| ④ Child proof load class B (12.5 ton) cover | ⑨ Outlet to dry well |
| ⑤ Treatment tower with integrated sampling | |

Description of operation



Professional advantages

- **Full line of system sizes**
Available in size PE 4 to PE 50
- **User friendly operation**
Interactive control unit with LCD read-out and user friendly touch pad (max. distance to system 27.5 m)
- **Low weight**
Complete installation handled with standard construction equipment.
- **Quick connection** for ventilation hoses
- **Easy connection** of air compressor – no tools required
- **Treatment tower is completely removable for maintenance / inspection**
- **Ready to go system** provides simplified on-site installation
- **Compressor pump and aeration diffuser** easily removed for inspection and maintenance
- **Three different installation versions** to meet custom installation requirements
- **Variable upper section**
inclined, height adjustable
and private vehicle traffic proof

Power usage calculation example:

0.11 KWh x 2 hours/day x 365 days/year = 80.30 KWh (Power usage air compressor)

0,01 KWh x 24 hours/day x 365 days/year = 87.60 KWh (Power usage control unit)

Total annual power consumption: = 167.90 KWh

At 0.25 €/KWh this results in a total annual operational cost of only 42 €

Note: If the InnoClean automatically goes into vacation or sleep mode, annual power costs would be even lower.



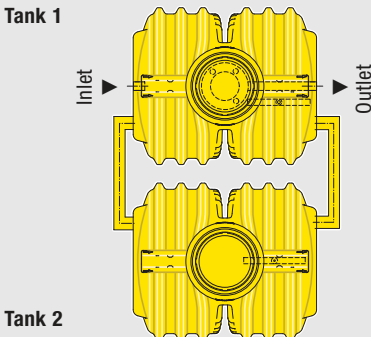
Scan this QR code to directly view the corresponding product video.



InnoClean PLUS wastewater treatment systems for underground installation

Twin tank system

Products

Illustration / Article description	Population equivalent *	Total capacity of the system (liters)	Weight in kg (approx.)	Installation version		
				①	②	③
	PE 12	9600 l	970	97 812	97 812A	97 812B
	PE 14	12400 l	1130	97 814	97 814A	97 814B
	PE 16	12400 l	1130	97 816	97 816A	97 816B
	PE 18	15200 l	1300	97 818	97 818A	97 818B
	PE 20	15200 l	1300	97 820	97 820A	97 820B

GW = max. ground water level (Dmin 700 mm)
 DEC = depth of earth coverage
 h_{empty} = height of cable piping

InnoClean PLUS

Fully biological wastewater treatment system according to EN 12566 manufactured from polyethylene

Single body (monolythic) tank, for underground installation. Installation depth D = mm. Chamber with gasketed inlet / outlet openings for connection of Ø 160 mm PVC inlet and outlet piping according to EN 1401-1 or for Ø 160 mm PE-HD inlet and outlet piping according to EN 12666-1. For installation in high groundwater areas, maximum groundwater level GW = 1840 mm. With integrated, pre-installed cleaning system. All ventilation hoses and clamps for connection of InnoClean PLUS tank to control unit / compressor are included with system.

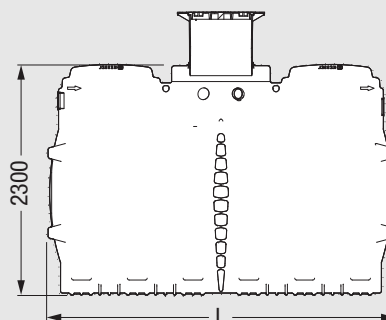
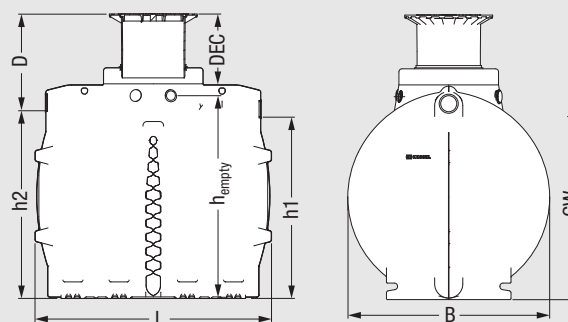
With control unit and low maintenance compressor (230 V 50 Hz). Float switch and air compressor connections to be made on-site.

Certification number: Z-55.3-185 / Z-55.3-187

Installation versions:

- With polyethylene temporary construction debris cover (can be used as a cover in green areas if there is sufficient protection against unauthorised opening).
- With polymer vertically adjustable upper section, with polymer cover (600 kg load class).
- With polymer vertically adjustable upper section, with concrete / cast iron cover (Class B, 12.5 t).

Accessories: see page 277 to page 279



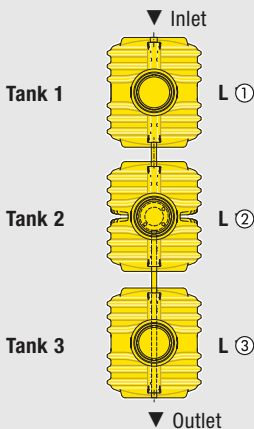
Population equivalent *	L		B	D		DEC = D	GW	h2	h1	h _{empty}
	①	②		min.	max.					
PE 12	2350	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 14	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 16	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 18	3470	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 20	3470	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000

* Population equivalent = number of people living in home which will be connected to the InnoClean PLUS

InnoClean PLUS wastewater treatment systems for underground installation

Three tank system

Products

Illustration / Article description	Population equivalent *	Total capacity of the system (liters)	Weight in kg (approx.)	Installation version		
				①	②	③
	PE 22	18300 l	1270	97 822	97 822A	97 822B
	PE 24	21000 l	1570	97 824	97 824A	97 824B
	PE 26	21000 l	1570	97 826	97 826A	97 826B
	PE 28	23800 l	1740	97 828	97 828A	97 828B
	PE 30	23800 l	1740	97 830	97 830A	97 830B

GW = max. ground water level (Dmin 700 mm)
 DEC = depth of earth coverage
 h_{empty} = height of cable piping

InnoClean PLUS Fully biological wastewater treatment system according to EN 12566 manufactured from polyethylene

Single body (monolythic) tank, for underground installation. Installation depth D = mm. Chamber with gasketed inlet / outlet openings for connection of Ø 160 mm PVC inlet and outlet piping according to EN 1401-1 or for Ø 160 mm PE-HD inlet and outlet piping according to EN 12666-1. For installation in high groundwater areas, maximum groundwater level GW = 1840 mm. With integrated, pre-installed cleaning system. All ventilation hoses and clamps for connection of InnoClean PLUS tank to control unit / compressor are included with system.

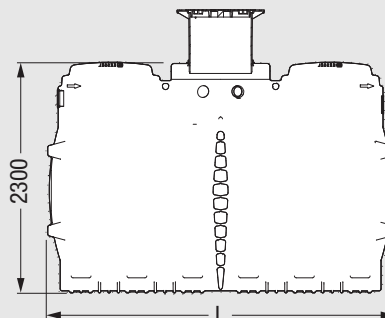
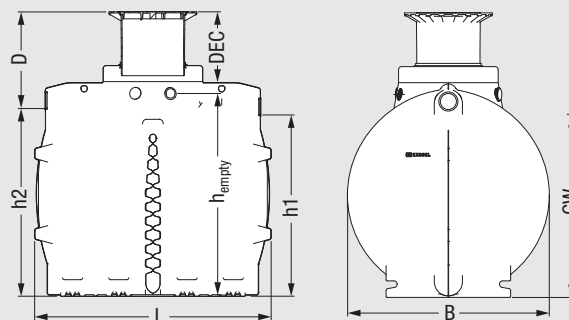
With control unit and low maintenance compressor (230 V 50 Hz). Float switch and air compressor connections to be made on-site.

Certification number: Z-55.3-185 / Z-55.3-187

Installation versions:

- ① With polyethylene temporary construction debris cover (can be used as a cover in green areas if there is sufficient protection against unauthorised opening).
- ② With polymer vertically adjustable upper section, with polymer cover (600 kg load class).
- ③ With polymer vertically adjustable upper section, with concrete / cast iron cover (Class B, 12.5 t).

Accessories: see page 277 to page 279



Population equivalent *	L			B	D		DEC = D	GW	h2	h1	h _{empty}
	①	②	③		min.	max.					
PE 22	2350	3470	2350	2000	590	1026	D - 255	1775	1875	1775	2000
PE 24	3470	2350	3470	2000	590	1026	D - 255	1775	1875	1775	2000
PE 26	3470	2350	3470	2000	590	1026	D - 255	1775	1875	1775	2000
PE 28	3470	3470	3470	2000	590	1026	D - 255	1775	1875	1775	2000
PE 30	3470	3470	3470	2000	590	1026	D - 255	1775	1875	1775	2000

* Population equivalent = number of people living in home which will be connected to the InnoClean PLUS

InnoClean PLUS wastewater treatment systems for underground installation

Six tank system

Products

Illustration / Article description	Population equivalent *	Total capacity of the system (liters)	Weight in kg (approx.)	Installation version		
				①	②	③
	PE 32	31000 l	2620	97 832	97 832A	97 832B
	PE 34	31000 l	2620	97 834	97 834A	97 834B
	PE 36	31000 l	2620	97 836	97 836A	97 836B
	PE 38	36600 l	2950	97 838	97 838A	97 838B
	PE 40	36600 l	2950	97 840	97 840A	97 840B
	PE 42	36600 l	2950	97 842	97 842A	97 842B
	PE 44	36600 l	2950	97 844	97 844A	97 844B
	PE 46	42000 l	3150	97 846	97 846A	97 846B
	PE 48	42000 l	3150	97 848	97 848A	97 848B
	PE 50	42000 l	3150	97 850	97 850A	97 850B

GW = max. ground water level (Dmin 700 mm)
 DEC = depth of earth coverage
 h_{empty} = height of cable piping

InnoClean PLUS Fully biological wastewater treatment system according to EN 12566 manufactured from polyethylene

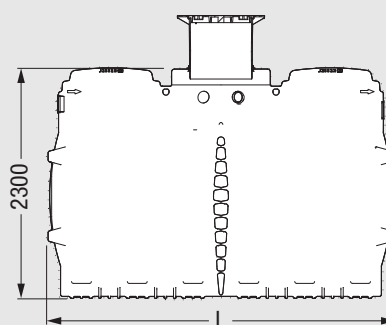
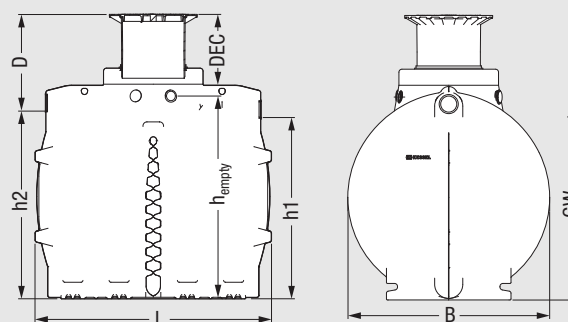
Single body (monolythic) tank, for underground installation. Installation depth $D = \dots$ mm. Chamber with gasketed inlet / outlet openings for connection of $\varnothing 160$ mm PVC inlet and outlet piping according to EN 1401-1 or for $\varnothing 160$ mm PE-HD inlet and outlet piping according to EN 12666-1. For installation in high groundwater areas, maximum groundwater level $GW = 1840$ mm. With integrated, pre-installed cleaning system. All ventilation hoses and clamps for connection of InnoClean PLUS tank to control unit / compressor are included with system.

With control unit and low maintenance compressor (230 V 50 Hz). Float switch and air compressor connections to be made on-site.

Certification number: Z-55.3-185 / Z-55.3-187

Installation versions:

- ① With polyethylene temporary construction debris cover (can be used as a cover in green areas if there is sufficient protection against unauthorised opening).
- ② With polymer vertically adjustable upper section, with polymer cover (600 kg load class).
- ③ With polymer vertically adjustable upper section, with concrete / cast iron cover (Class B, 12.5 t).




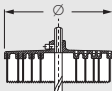







Accessories: see page 277 to page 279

Population equivalent *	L			B	D		DEC = D	GW	h2	h1	h_{empty}
	①	②	③		min.	max.					
PE 32	2350	2350	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 34	2350	2350	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 36	2350	2350	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 38	2350	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 40	2350	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 42	2350	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 44	2350	3470	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 46	3470	2350	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 48	3470	2350	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000
PE 50	3470	2350	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000

* Population equivalent = number of people living in home which will be connected to the InnoClean PLUS

InnoClean PLUS wastewater treatment systems / Wastewater collection tanks			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
	Cover plate made of polymer unlocked, 600 kg load class	-	860 117
	Cover plate in concrete / cast iron unlocked, traffic proof up to class B / 12.5 t.	-	860 131
	Cover plate in cast iron surface water tight, locked, traffic proof up to class D / 40 t.	-	860 136
	Upper section made of polymer, surface water tight For flexible adaption to the ground level, use in combination with covers Art. # 860 131, 860 136 and 860 117. Load class A/B or D locked, continuous height adjustment from 50 mm up to 500 mm.	-	860 150
	Upper section made of polymer for standard manhole extension rings made of concrete and for concrete / cast iron covers Can be used in combination with standard concrete extension rings for a flexible adaption to the ground level. Continuous height adjustment from 50 mm up to 500 mm.	-	860 125
	Clamping ring for upper section for fixing the upper section during construction	-	860 129
	Lip-sealing gasket for connection between <i>InnoClean PLUS</i> tank and adjustable upper section	Ø 600	860 116
 	Extension section made of polymer for use with deeper installation depths Extension height 510 mm; incl. gasket smaller/larger extension sections available on request	-	917 406


InnoClean PLUS wastewater treatment systems			Accessories
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Phosphate treatment "+P" for InnoClean PLUS For additional phosphate reduction for InnoClean PLUS wastewater treatment systems. Consists of: Dosing pump, plastic hose with screw connection and cable sleeve.	-	97 718
	Polyethylene wall mount (includes mounting hardware) For installation of control unit and compressor	-	97 705
	Cable entrance seal Water/Odour tight seal for passage of ventilation hose and single float switch cable. Includes additional passage for electrical cable if required.	-	97 711
	Kiosk for control unit and compressor housing for outdoor applications	-	97 716
	Thermostat / Hygrostat For use in InnoClean PLUS outdoor kiosks For condensation reduction	-	97 713
	Warning beacon For installation on InnoClean PLUS outdoor kiosks. For connection to InnoClean PLUS control unit.	-	97 715
	InnoClean PLUS cable extension set For extension of control unit and compressor cables. Max extension – 27.5 meters.	-	97 712


InnoClean PLUS wastewater treatment systems / Wastewater collection tanks			Accessories
Illustration and dimensioned drawing	Article description	Outer diameter Ø (mm)	Article #
 	Hole saw for cutting holes for pipe sealing gaskets Ø 50, 75, 110, 125, 160. (Saw blade holder Ø = 190 mm)	Ø 50-160	50 100
 	Gasket for pipe conduit For drilling lateral surfaces for inlets and outlets.	Ø 50 Ø 75 Ø 110 Ø 125 Ø 160	850 114 850 116 850 117 850 118 850 119
	Manhole cover removal tool Suitable for articles 860 131 and 860 136	-	915 595
	Activated charcoal filter made of polymer (ABS), with replaceable cartridge, with activated charcoal. Suitable for pipes Ø 75 and Ø 110	-	915 600
	Activated charcoal cartridge as alternative for filter element in the activated charcoal filter (Art. # 915 600)	-	915 601
	Aluminium cover with polystyrene insulating hood; fits activated charcoal filter	-	915 602
	Warning sticker for toilet lid Sheet with 2 stickers Ø 9.5 cm and 5 stickers Ø 6 cm	-	97 760

i Technical note:
Weather-related influences or cooling of the tanks during the installation phase (caused by filling with cold water) can lead to deviations in dimensions from the catalogue specifications in the case of wastewater treatment systems installed in the ground.

Retro-fit or upgrade package *InnoClean PLUS*

OEM set *InnoClean PLUS*


Retro-fit or upgrade package <i>InnoClean PLUS</i>			Products
Illustration	Article description	Outer diameter Ø (mm)	Article #
	Retro-fit or upgrade package <i>InnoClean PLUS</i> <input type="checkbox"/> SBR upgrade package for use in twin or multiple chamber concrete septic systems, for use with divider walls up to 190 cm in height. Package consists of: Air lift for loading water transfer and sludge return, quick release locks for compressor air hose, aerator hose, valve block, air compressor, control unit and sampling chamber. Cable and hose for connection from control unit to <i>InnoClean PLUS</i> - max length 15 m	4/6 8/10	97 720 97 722
	Certification number: Z-55.32-460		

OEM set <i>InnoClean PLUS</i>			Products
Illustration	Article description	Outer diameter Ø (mm)	Article #
	OEM set <i>InnoClean PLUS</i> <input type="checkbox"/> Treatment tower with integrated sampling for standard equipping of twin tank pit made of concrete with fully biological treatment in an activated sludge system Package consists of: Air lift pumps for loading, water transfer pipes and sludge return with quick-release locks for the compressed air hose, aerator hose, valve block with float switch, compressor, control unit. 15 m compressed air hose.	4-50	97 730
	Certification number: Z-55.31-454		

Wastewater collection tanks for underground installation

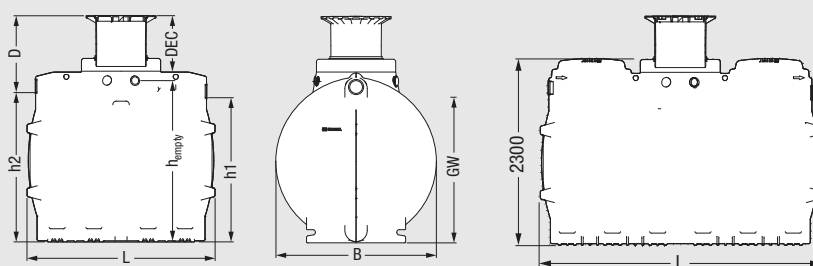
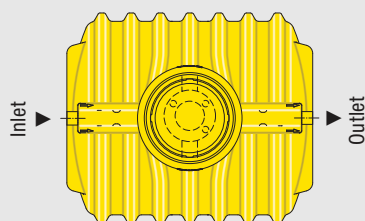
6000 and 9000 liter

Products

Illustration	Article description	Capacity	Article #
	Wastewater collection tank <input type="checkbox"/> for collecting household wastewater For underground installation with protective cover for installation period, drilling surfaces for inlet, venting and connection socket up to Ø 160 Accessories Telescopic upper section Art. # 860 121 and covers class A/B/D Art. # 860 130, 860 131, 860 136 see page 277	6000 l 9000 l	85 471A 85 481A

GW = max. ground water level (Dmin 700 mm)

Illustration shows Art. # **85 481A** with upper section as accessories



DEC = depth of earth coverage

h_{empty} = height of cable piping

Capacity	L	B	D		DEC = D	GW	h2	h1	h_{empty}
			min.	max.					
6000 liter	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
9000 liter	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000


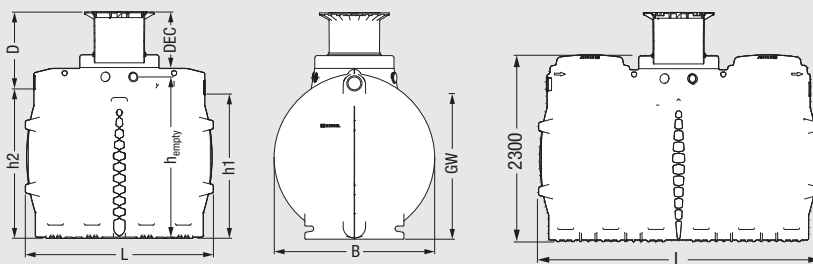
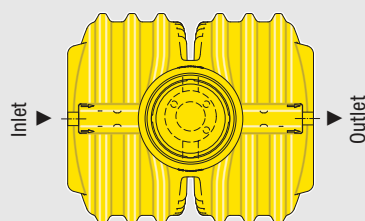
	Wastewater collection tank with two chambers <input type="checkbox"/> for collecting household wastewater <input type="checkbox"/> can be retrofited to a fully biological sewage treatment system InnoClean PLUS (Retro-fit or upgrade package see page 286) For underground installation with protective cover for installation period, drilling surfaces for inlet, venting and connection socket up to Ø 160 Accessories Telescopic upper section Art. # 860 121 and covers class A/B/D Art. # 860 130, 860 131, 860 136 see page 277	6000 l 9000 l	85 471B 85 481B
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Illustration shows Art. # **85 481B** with upper section as accessories



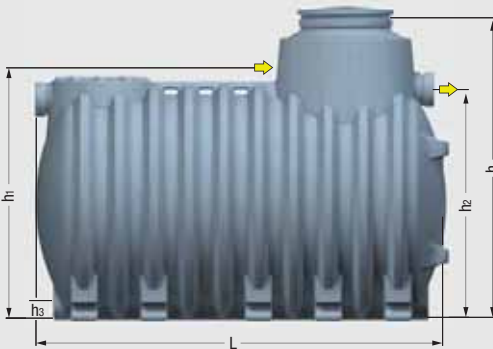


DEC = depth of earth coverage

h_{empty} = height of cable piping

Capacity	L	B	D		DEC = D	GW	h2	h1	h_{empty}
			min.	max.					
6000 liter	2350	2000	590	- 1026	D - 255	1775	1875	1775	2000
9000 liter	3470	2000	590	- 1026	D - 255	1775	1875	1775	2000

Wastewater collection tanks for underground installation

2000, 3000 and 4500 liter					Products	
Illustration	Article description				Capacity	Article #
	Drainless collection tank <input type="checkbox"/> for collecting household wastewater For underground installation with protective cover for installation period, drilling surfaces for inlet, venting and connection socket up to Ø 160 Accessories Telescopic upper section Art. # 860 121 and covers class A/B/D Art. # 860 130, 860 131, 860 136 see page 277				2000 l	85 421B
					3000 l	85 431B
					4500 l	85 446B
<div></div>						
Capacity	Ø D mm	h mm	h1* mm	h2* mm	h3* mm	L mm
2000 liter	1200	1785	1425	1205	200	2080
3000 liter	1200	1785	1425	1205	200	2860
4500 liter	1760	2300	1940	1735	200	2280
* Middle dimension cutting surfaces						

i

Technical note:
 Weather-related influences or cooling of the tanks during the installation phase (caused by filling with cold water) can lead to deviations in dimensions from the catalogue specifications in the case of wastewater treatment systems installed in the ground.



7 Individual solutions

Lifting stations	Page 286 – 289
Drains	Page 290
Grease separators	Page 291 – 293
Coalescence separators	Page 294 – 295
Sediment separators	Page 296 – 297
Sludge traps	Page 298
Inspection chambers	Page 299
Spring tapping system	Page 300
Rainwater management system	Page 301

KESSEL - The drainage specialist

Today's modern commercial construction projects as well as private homes and building developments often require customized drainage solutions not available on an every day basis. It is this exact market that the KESSEL Custom Solutions Department is designed to support. The Customs Solution Department has been in existence for 15 years and is currently comprised of 12 engineers and technicians working directly on customized drainage solution products for KESSEL customers around the world. The broad as well as in-depth experience of our department allows KESSEL to offer these customized solutions for products such as grease separators, lifting stations, backwater valves, inspection chambers and floor drains.

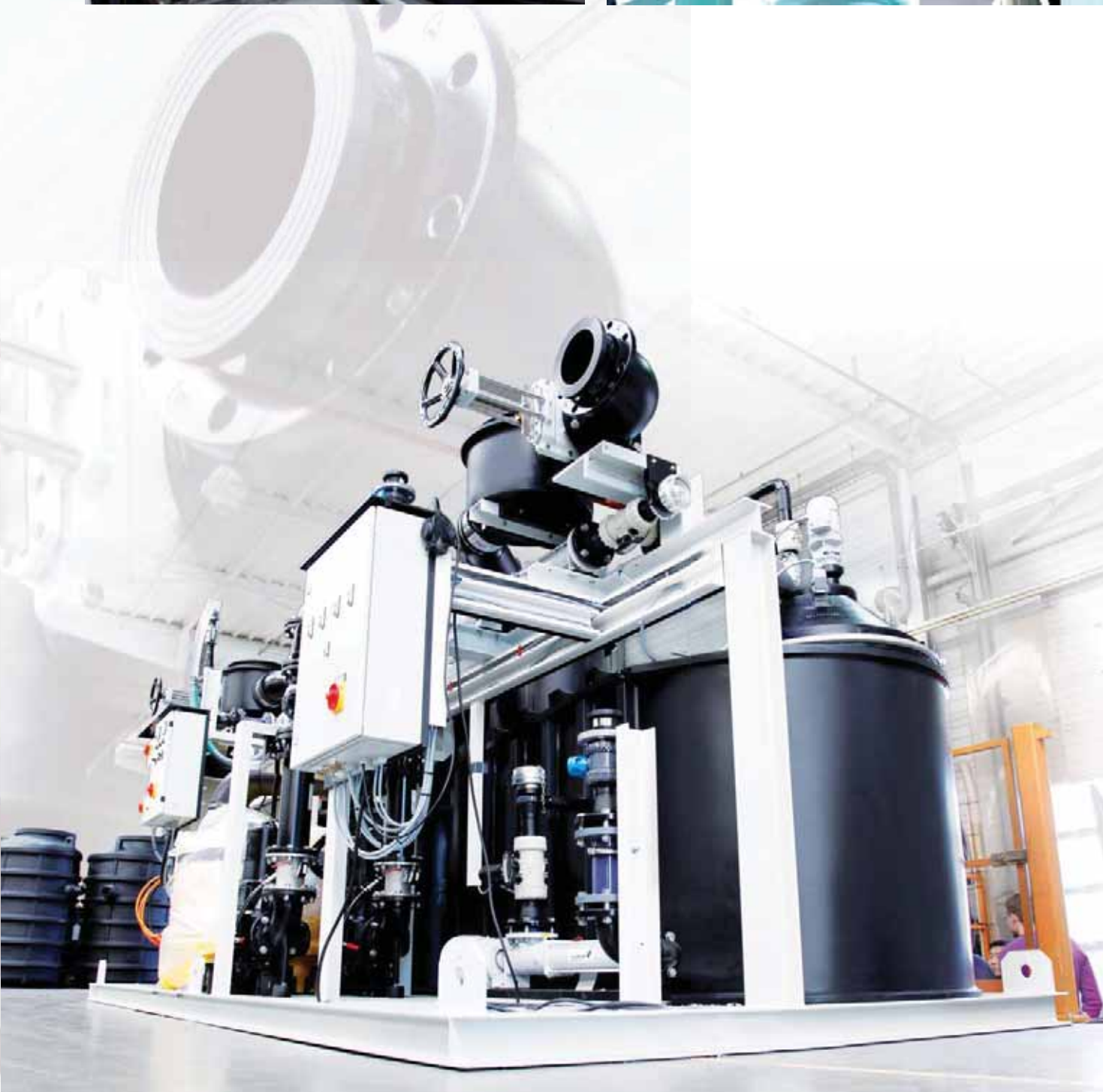
Unmatched customer service and support

Along with specialized drainage knowledge our department also offers dedicated support service to these projects. Preferably becoming involved in the very beginning stages of the building and drainage design, our department offers technical consultation, CAD engineering support as well as on-site visits from our sales engineers in order to advise the best solution for the project. If required our Custom Solutions Department also has a team of installation specialists who can travel to any site worldwide to professionally install and commission the KESSEL system.

The typical "life" of a Custom Solutions Department project progresses as follow:

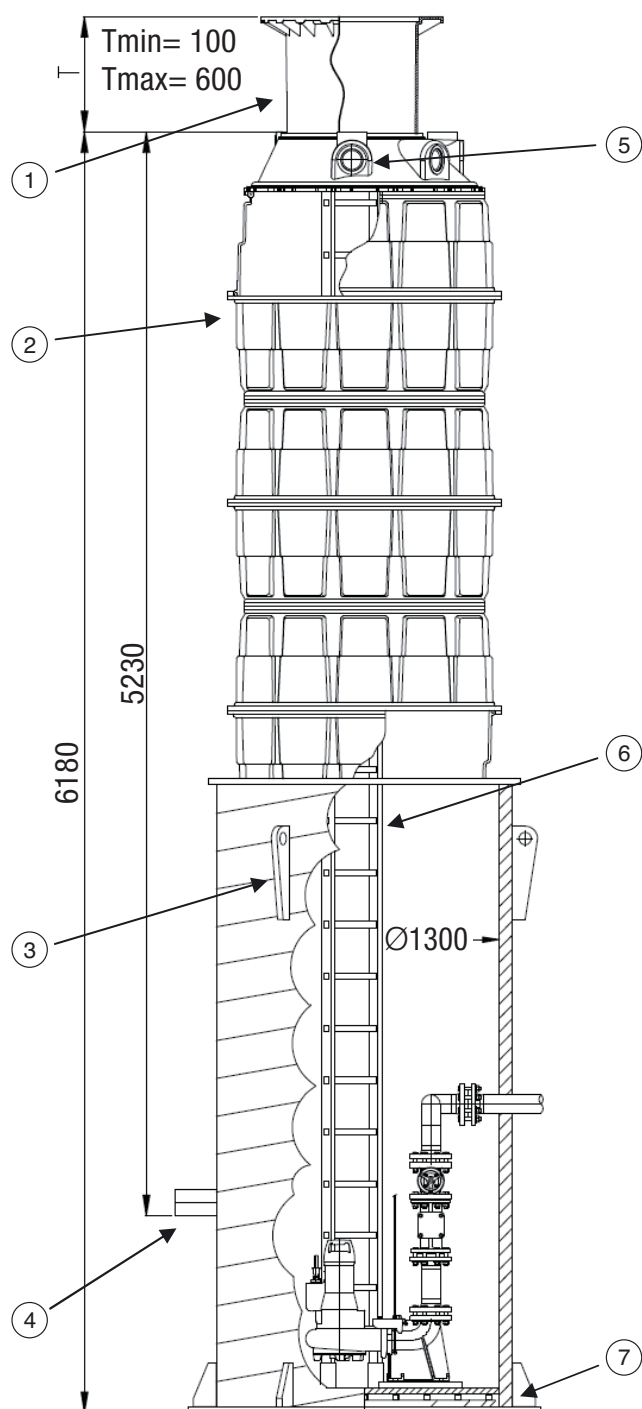
- Telephone / Internet / or on-site consultation at beginning of project
- Preparation of technical and economically feasible solution
- Proposal of detailed CAD drawings and specifications including price / delivery offer
- Negotiation of customized solution leading to customer approval of product / drawings
- Manufacture of custom system at KESSEL Germany or on-site which includes testing of system
- Shipping of system to site
- Off-site KESSEL support of installation (if required on-site support can be agreed upon)
- Commissioning and hand-over of the system to the owner / operator





Pumping station in re-enforced corrugated chamber Ø 1300

(for installation in groundwater-endangered areas)



1	Upper cover section, vertically adjustable, with cover class B
2	Chamber system Komfort Ø 1000
3	Load and transport connection hooks
4	Inlet up to Ø 200
5	Connection seal Ø 110 (cable conduit and ventilation)
6	Access ladder
7	Corrugated chamber Ø 1300, with re-enforced, ground plate

Tender text:

KESSEL chamber system Ø 1300 made of polyethylene (PE-HD) as a collecting tank for housing a lifting/pumping station, **for installation in the ground 5.330 - 5.830 mm**, round version, waterproof, resistant to aggressive wastewater, comprising:

- ☐ **Re-enforced corrugated chamber according to DIN 16961**, Ø 1300, further set-up with Komfort chamber system Ø 1000
- ☐ with **re-enforced, ground plate**
- ☐ **Upper section** made of thermoset 2K (Ø = 630 mm) for continuous height and level compensation
- ☐ **Cover Cl. B** made of cast iron according to EN 124, with lift-out key
- ☐ one PE-HD socket **up to Ø 200** (inlet)
- ☐ two connection seals **up to Ø 110** (cable conduit, ventilation/aeration)
- ☐ **Access ladder made of GRP** (CW= 300 mm, rung spacing 250 mm)
- ☐ three load and transport connection hooks

Overall depth of the shaft structure:
6180 mm + T (Tmin= 100, Tmax= 600)

Please note the following:

- ☐ When the system is installed in a groundwater-endangered area, the structure must be anchored **on site** in concrete as buoyancy protection.
- ☐ Where drop heights of **more than 5 m** are involved, safety measures must be taken on site.

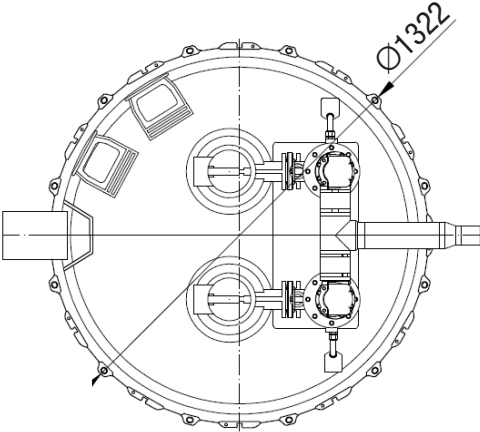
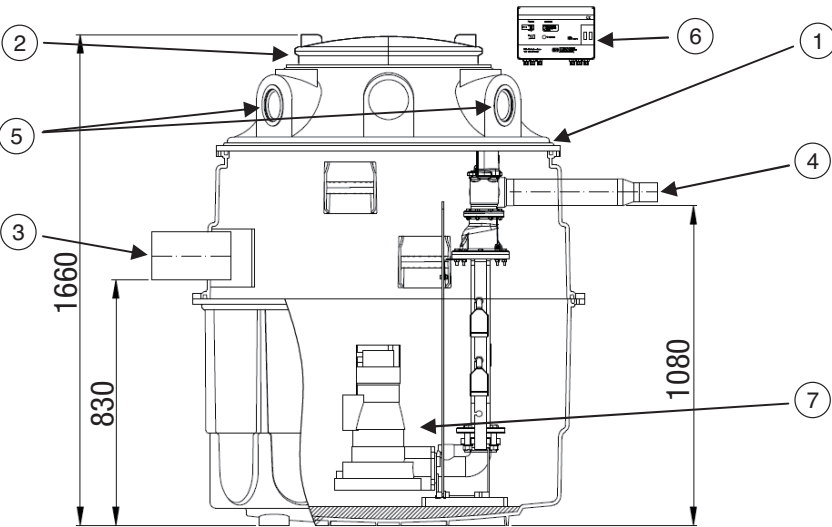
In accordance with GUV V-36 and BGV D36 §5 Sect. 9 access ladders and iron rungs for entry which have a fall height of more than 5.00 m must be equipped with on-site safety measures to prevent people falling.

On request and at extra charge, the shaft structure can be fitted with a high-quality safety package in the factory, this comprises:

- ☐ Climbing protection rail made of stainless steel AISI 316L (1.4571)
- ☐ Slide mechanism made of stainless steel AISI 316L (1.4571)
- ☐ Safety harness (DIN EN 361)
- ☐ Entry aid, for entry / exiting chamber (AISI 316L)

Pumping station *Aqualift F Duo* (TPF 1.3 / TPF 1.9) for free-standing installation

(Illustration shows Art. # 1000-HA 1F and Art. # TPF 13 KE DUO)



1	Komfort chamber system Ø 1000
2	Cover hood with quick action closure
3	Inlet Ø 110 mm
4	Pressure outlet Ø= 63/90 mm
5	Connection seal Ø 110 (cable conduit and ventilation/aeration)
6	Control unit <i>Duo</i> , level control
7	Twin pumping system with pump type TPF 1.3 KE or TPF 1.9 KE

Tender text:

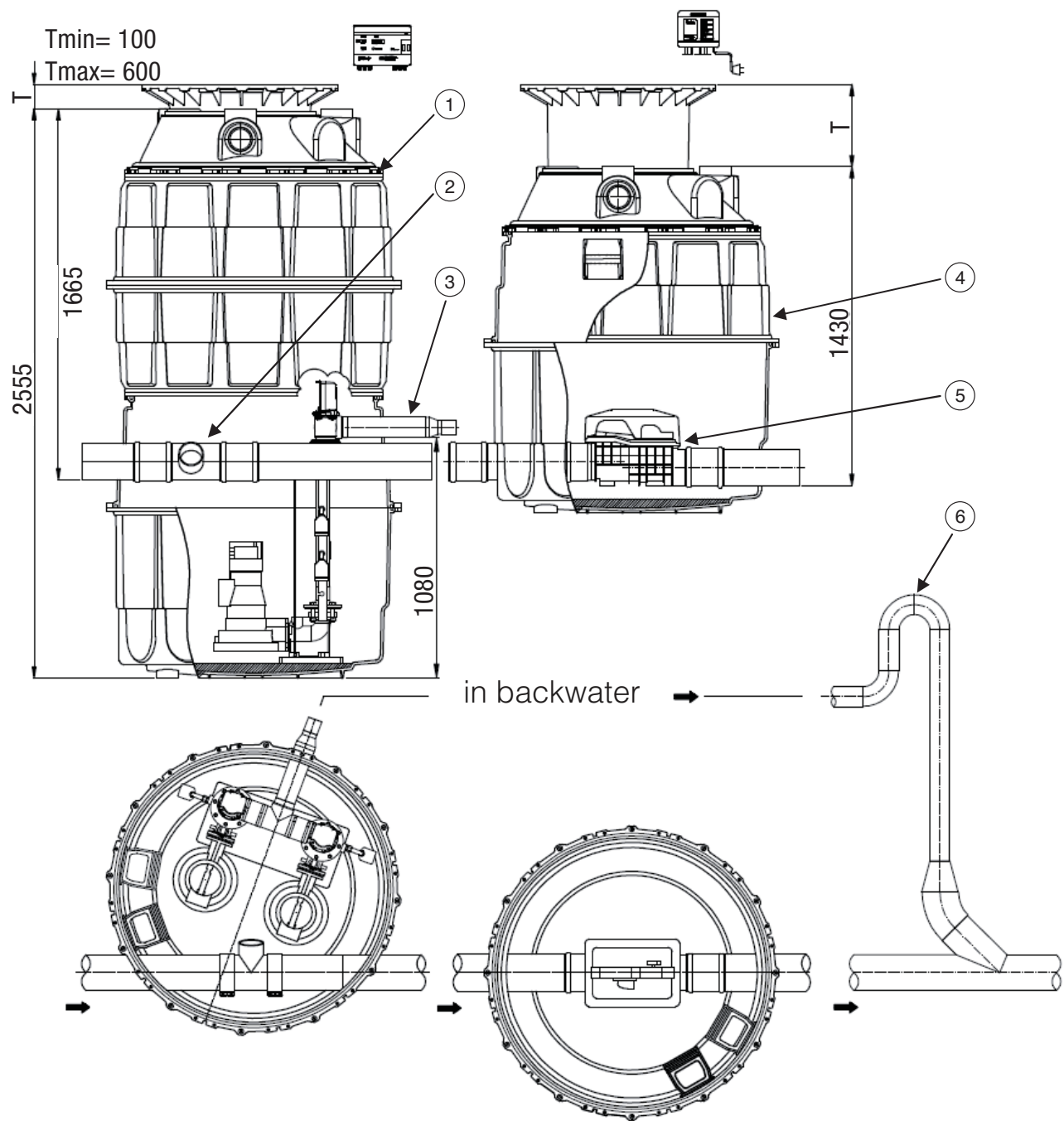
Pump chamber Ø 1000 with wastewater lifting station *Aqualift F Duo*

with pump type TPF ____ KE for free-standing set-up in frost-free rooms,
made of polyethylene PE-HD, waterproof, resistant against aggressive wastewater.
Cover hood made of plastic, with quick action closure, sealed odour-tight.
Inlet muff made of PE-HD, connection for Ø 110 according to EN 1401
and EN 12666-1 one each for ventilation and cable conduit.

- Chamber system: Komfort Ø 1000
- Design height: 1660 mm
- Diameter (Ø): 1322 mm
- Inlet muff: up to Ø 200
- Type of cover: Cover hood, odour-tight
- Pressure connection: Ø 63/90 mm
- Pumping medium: wastewater with and without sewage
- Pump control: float control

Pumping station *Aqualift F Duo*, with overflow channel and backwater valve *FKA*

(Illustration shows Art. # 864 630B and chamber system *Komfort* Ø 1000 with *Staufix FKA*)



1	Pumping station <i>Aqualift F Duo</i>	4	Chamber system <i>Komfort</i> Ø 1000
2	Channel passage with overflow opening	5	Backwater valve <i>Staufix FKA</i> for wastewater with/without sewage
3	Outlet for pressure pipe	6	Loop via backwater level

Pumping station *Aqualift F Duo*, with overflow channel and backwater valve *FKA*

Function:

- ☐ **Standard operation:**
In standard operation, the disposal units connected can drain by means of natural gravity through the open channel to the sewer.
- ☐ **Backwater protection:**
If there is any backwater from the sewer, the sensor system in the backwater valve *Staufix FKA* detects backwater in the drain pipe and closes the motor-driven flap, thus securing the building.
- ☐ **Disposal during the backwater phase**
Any wastewater from the building which occurs during this phase pours through the overflow opening into the pumping station. When the respective switching level is reached, the wastewater is disposed of by the pumping station into the sewer via the pressure pipe against the pressure of the backwater.
- ☐ **Standard operation:**
After backwater and the opening of the backwater valve *Staufix FKA*, the disposal units connected can be drained through the open channel again.

Tender text:

Pumping station *Aqualift F* (Duo system)

for wastewater with or without sewage, for underground installation, made of polyethylene PE-HD with access steps, watertight, resistant against aggressive wastewater. Polymer upper section for continuous height and level compensation, cover plate made of cast iron according to EN 124. Connection bore hole with sealing gasket Ø 110 in accordance with EN 1401 and EN 12666-1 for ventilation and cable conduits respectively, pump volume approx. 200 l. Pressure pipe pre-assembled with backwater flap, closure valve and 4 float switches for level control.

Two submersible pumps in explosion-protected version, with cutting unit for pumping wastewater with and sewage, flood-proof. Electric control unit for fully automatic pump control, splashwater-proof, for wall mounting in dry, frost-free areas of the building, PTB approval for potentially explosive areas (ATEX), with potential-free contact.

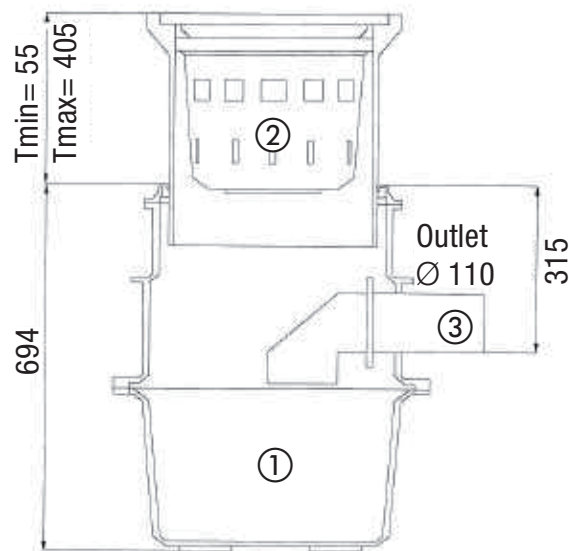
Chamber system: Komfort Ø 1000
 Standard: EN 752
 Installation depth: _____ - _____ mm
 Inlet depth: _____ - _____ mm
 Inlet: passage channel Ø _____ with overflow opening
 Pressure socket: Ø 63 mm / Ø 90 mm
 Type of cover: unscrewed
 Load class: B 125 (12.5 t)

Pump type: (optional)

Pumping station: *Aqualift F* (Duo system)
 Pump type: TPF 1.3 KE
 Standard: EN 12050-1
 Feed rate: max. 15 m³/h
 Pumping height: max. 17.5 m
 Rated power: 2 x 1.3 kW
 Input power: 2 x 1.75 kW
 Operating voltage: 400 V DC
 Rated frequency: 50 Hz
 Rated current: 3.5 A
 Fuse protection: 3 x 16 A slow-blow
 Protective rating (pumps): IP 68 EX-protection
 Protective rating (control unit): IP 65
 Cable length: 10 m (7 x 1.5 mm²)

Pumping station: *Aqualift F* (Duo system)
 Pump type: TPF 1.9 KE
 Standard: EN 12050-1
 Feed rate: max. 20.5 m³/h
 Pumping height: max. 32.0 m
 Rated power: 2 x 1.9 kW
 Input power: 2 x 2.6 kW
 Operating voltage: 400 V DC
 Rated frequency: 50 Hz
 Rated current: 4.5 A
 Fuse protection: 3 x 16 A slow-blow
 Protective rating (pumps): IP 68 EX-protection
 Protective rating (control unit): IP 65
 Cable length: 10 m (7 x 1.5 mm²)

Yard drain, Type Hannover



1	Yard drain, type Hannover
2	Polymer sludge bucket
3	Drain Ø 100 with odour trap

Advantages:

- ☐ Optimum pipe cleaning by simply removing the odour trap
- ☐ Upper section can be twisted, tilted and height-adjusted
- ☐ Can be driven over by passenger cars or trucks
- ☐ Resistant to aggressive media
- ☐ Drain suitable for heat-sealing to PE-HD pipes
- ☐ Further inlets up to Ø 160 can be made by drilling on site

Tender text:**KESSEL-yard drain, type Hannover**

made of polyethylene PE-HD, watertight, resistant against aggressive wastewater, with sludge bucket. Polymer upper section for continuous height and level compensation, slotted cover made of cast iron in accordance with EN 124, screwed.

Standard: EN 752
 Dimension: Ø 110 mm
 Outlet: 2.5° (at the side)
 Installation depth: 370 - 720 mm
 Flow rate: 4.5 l/s
 Upper section: Polymer
 Adjustment range: 55 mm to 405 mm
 Slotted cover: cast iron
 Base frame: 400 x 400 mm
 Load class: B 125 (12.5 t)

Information about the scope of delivery and installation requirements

- ☐ Yard drain with upper section, sludge bucket and odour trap
- ☐ Pipe inlet seal for further inlets (accessories)

Free-standing grease separator in custom design

In some cases, the correct installation of standardised grease separator systems is not possible due to a lack of access opening, base area, accessibility or inlet and outlet heights.

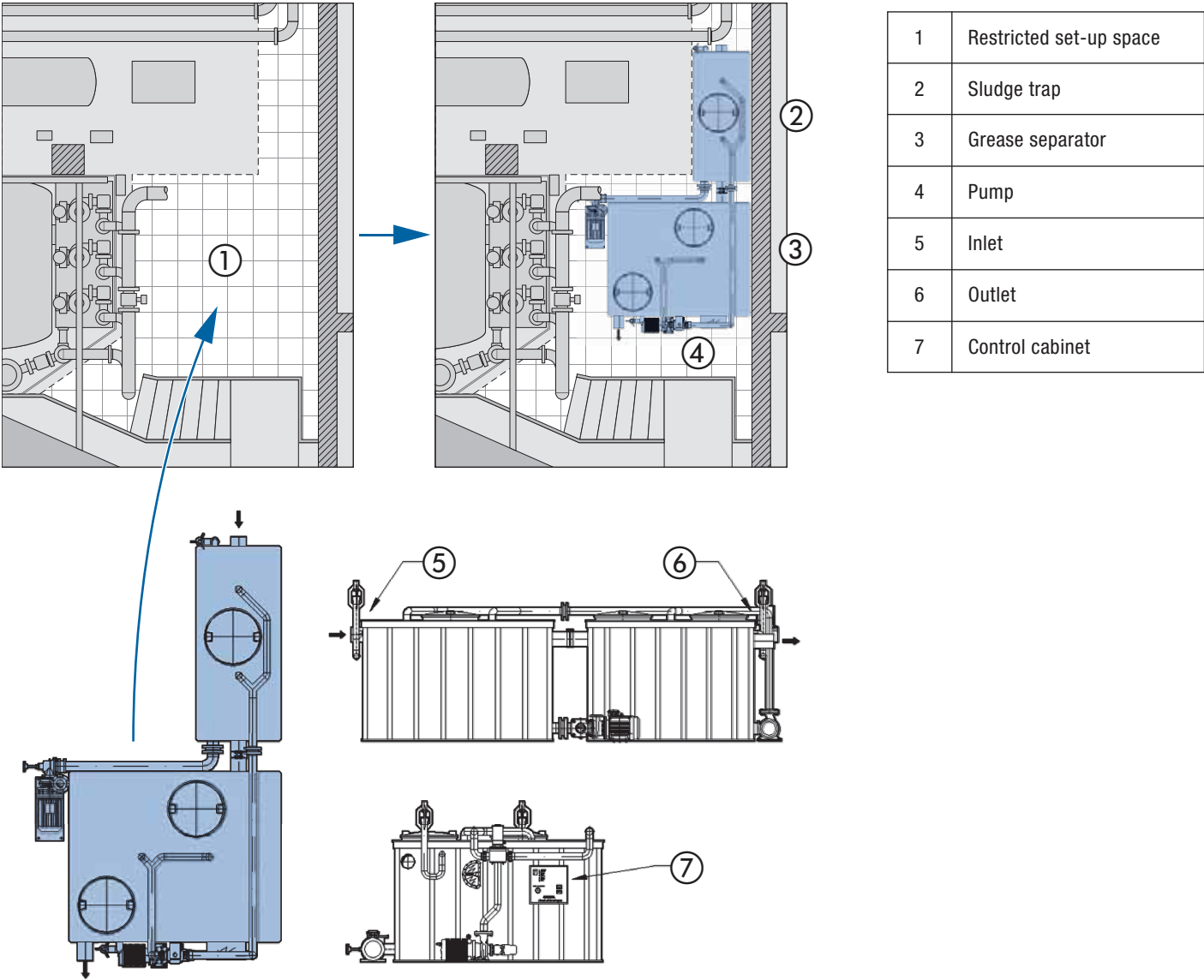
We can still fulfil wastewater treatment requirements by constructing customised separators, taking geometric specifications as well as process and static requirements into account. There are numerous variants possible under these basic conditions:

- ☐ modified inlet and/or outlet height and/or dimensions
- ☐ custom design
- ☐ alternative placement of pumping technology
- ☐ larger sludge trap volume
- ☐ disposal pump with increased pumping capacity and/or pumping height

These measures must always be agreed separately with the water authority responsible.

Application example:

Grease separator “PV” NS15 in accordance with DIN 4040 in two-part design with 5.5 kW disposal pump.

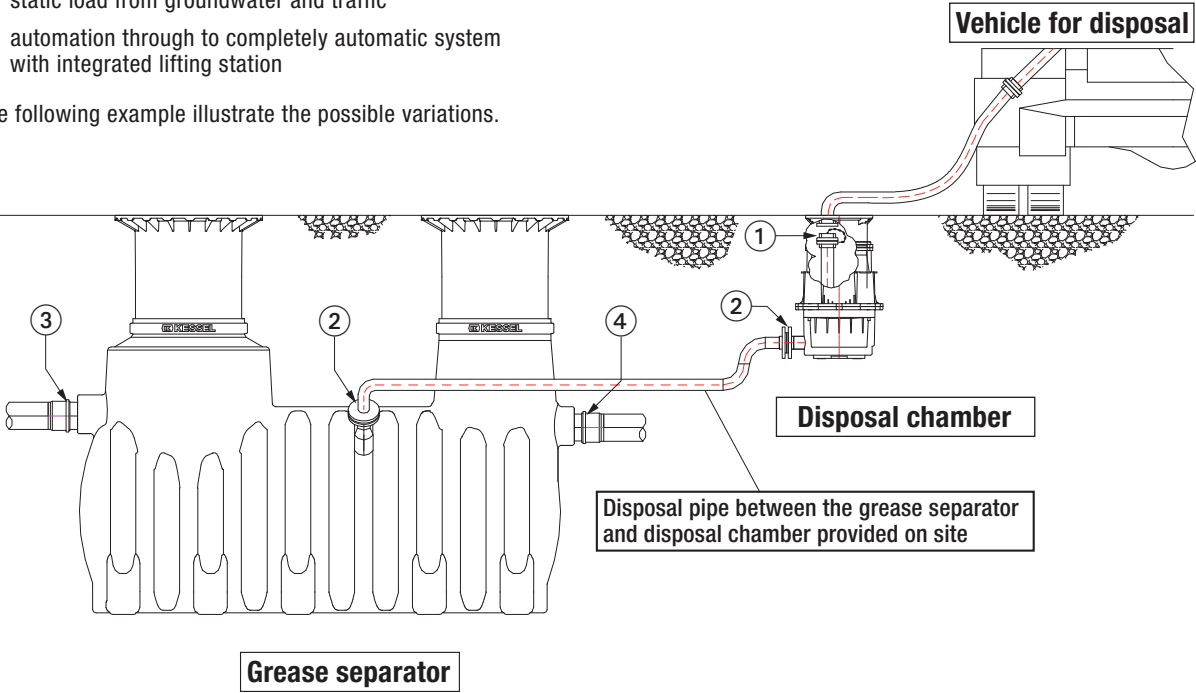


Grease separator for underground installation

Many variants and special adaptations are possible for grease separators installed in the ground. These variants concern

- ☐ the shape of separator
- ☐ inlet and outlet heights
- ☐ static load from groundwater and traffic
- ☐ automation through to completely automatic system with integrated lifting station

The following example illustrate the possible variations.



1	Storz B coupling
2	Disposal pipe Ø 65
3	Inlet Ø 160
4	Outlet Ø 160

Backwater protection for grease separators

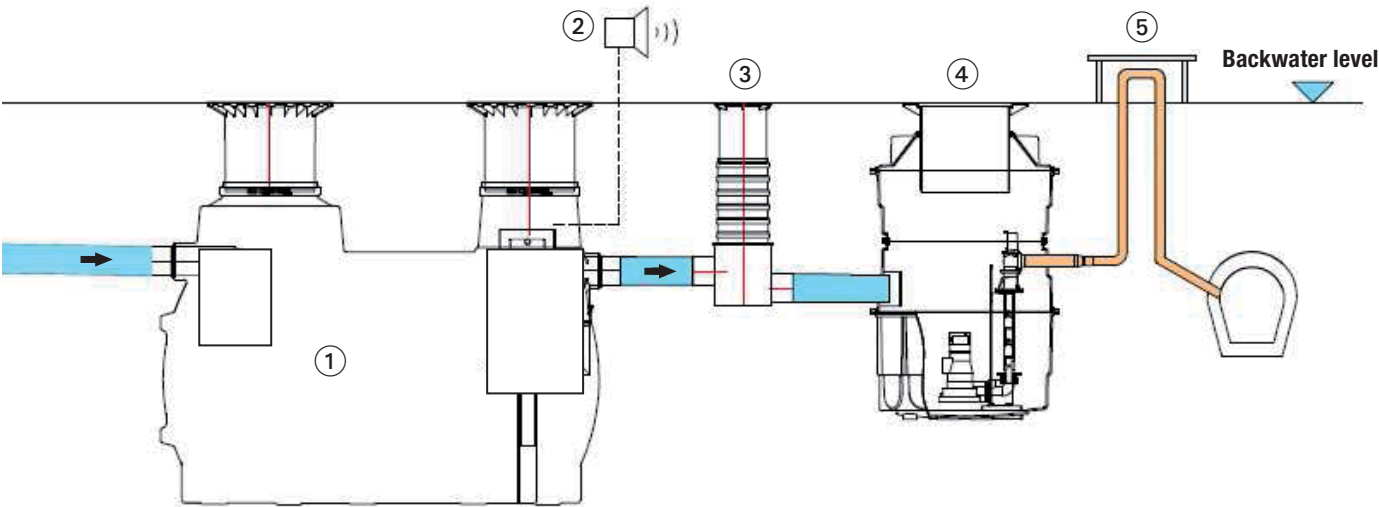
According to DIN 1986-100 and EN 1825, a grease separator must always be secured against backwater when the grease separator outlet is below the backwater level.

In the case of industrial systems where the wastewater flow must not be interrupted, a twin lifting station must be installed corresponding to the application case according to EN 12050-1 or EN 12050-2.

This applies both for both free standing and underground separators.



1	Grease separator
2	<i>SonicControl</i>
3	Sampling chamber
4	Lifting station
5	Backwater loop

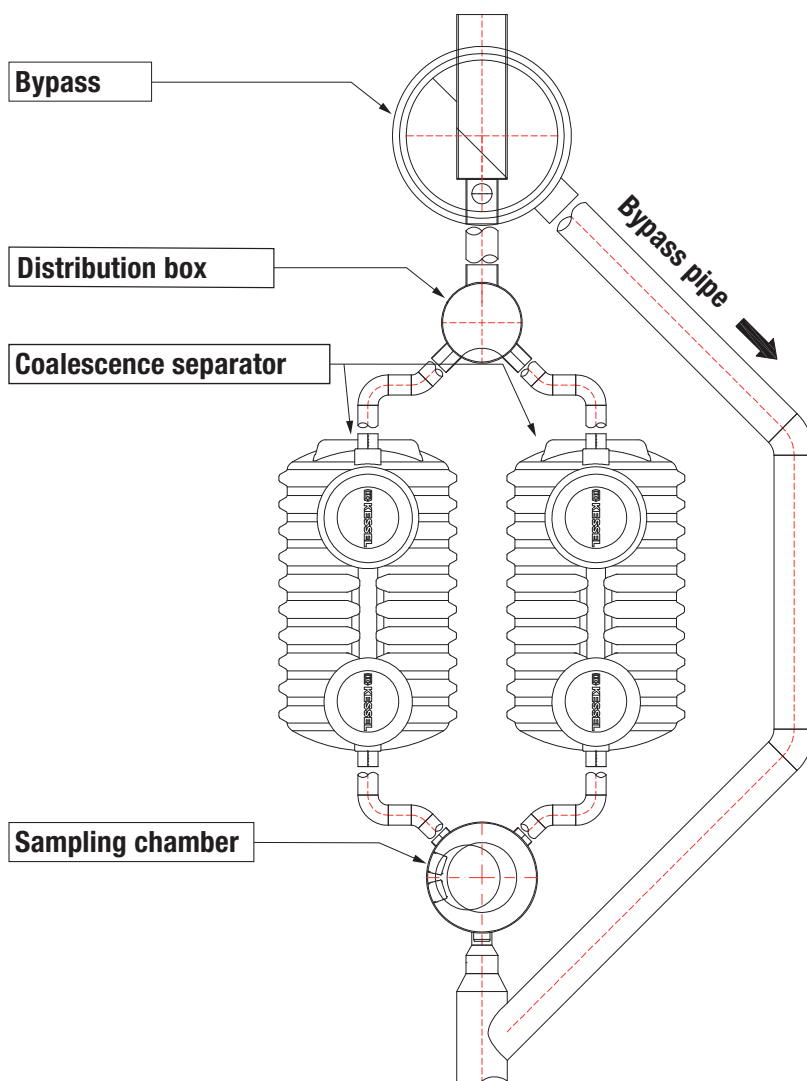


Coalescence separator with bypass

EN 858-2 permits bypasses upstream from coalescence separators for cases where it is unlikely that significant contamination will result from light liquid in heavy rain. This means:

- ☐ for the treatment of oil contaminated run-off from car-parks, roads, parking lots or yards.
- ☐ not for treating contaminated water (industrial wastewater) from industrial processes.

Separators with bypass include a device which allows the liquid flow which exceeds the maximum permissible flow to be guided past the separator via a bypass.

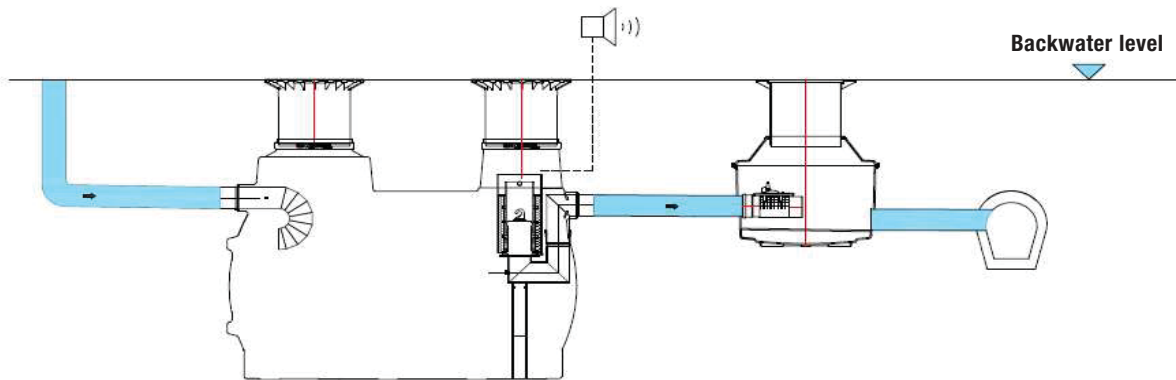


Backwater protection for coalescence separators

According to DIN 1986-100 and EN 858, a coalescence separator must always be protected against backwater when the separator outlet is below the backwater level.

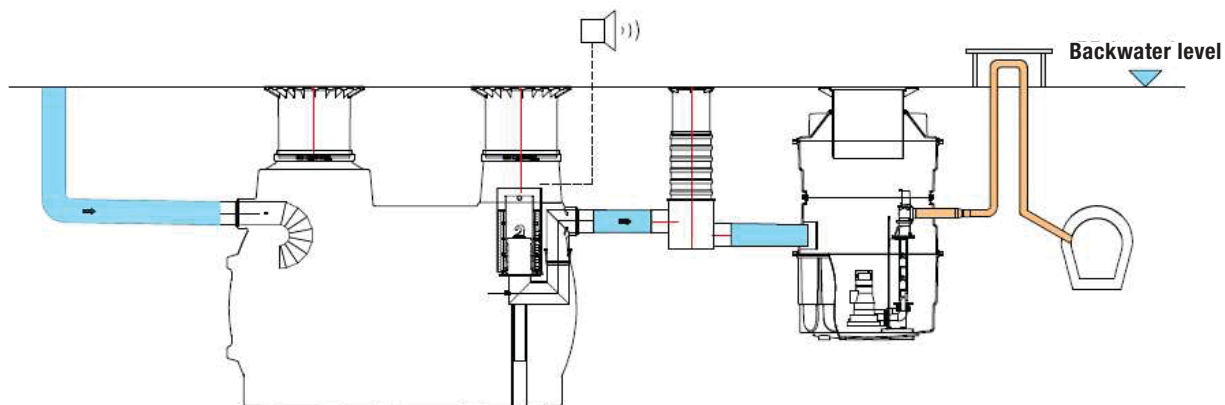
Backwater valves may be used if

- ☐ there is no need to use all the draining points
 - > no rainwater - roof covering
 - > no wastewater without sewage - interruption of operation !!



Lifting stations must be used if

- ☐ here is no gravity drainage to the sewer
- ☐ interruption of separator operation is not allowed.

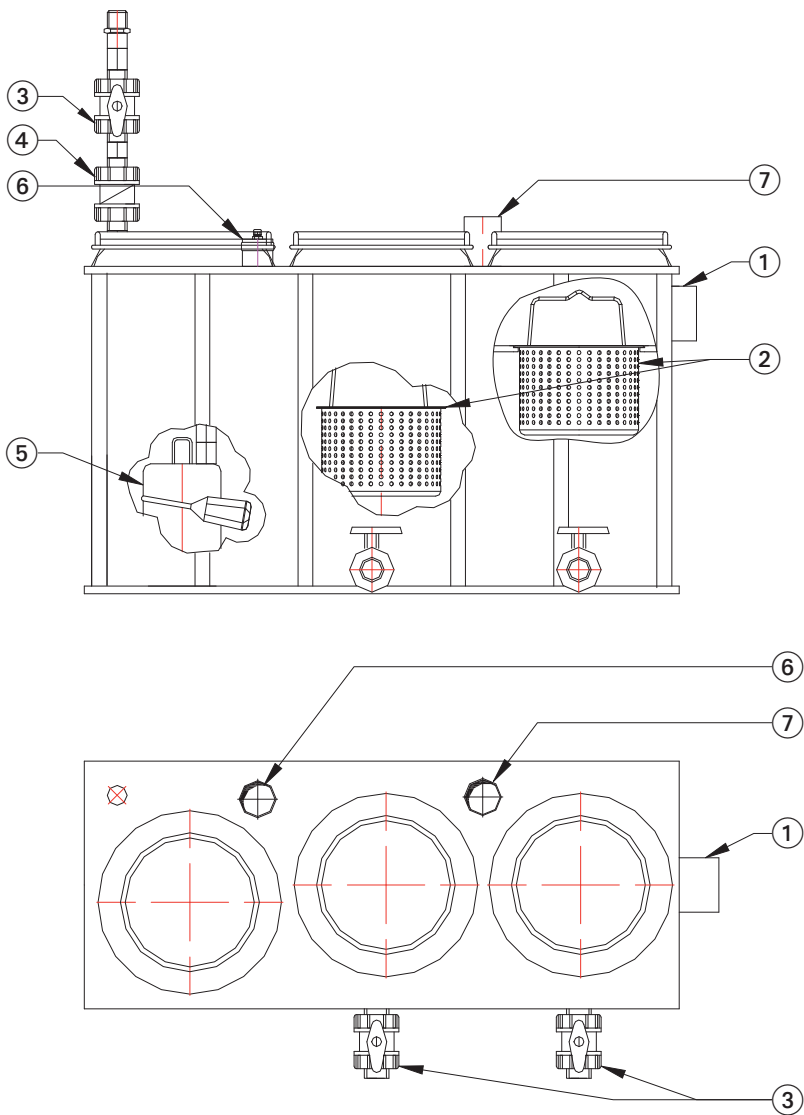


Sediment separators

Sediment separators are systems designed to separate substances that can be deposited from the wastewater. The field of application is varied and covers different areas of industrial applications as well as laboratory equipment or other commercial systems.

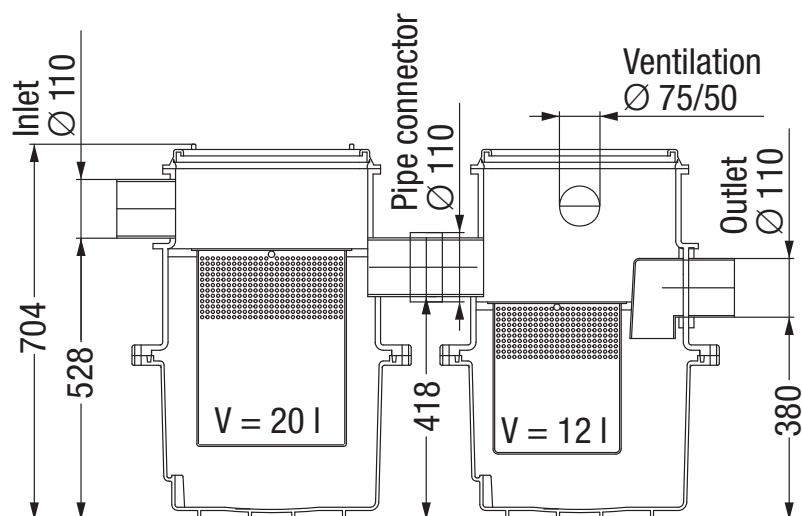
Sediment separators are dimensioned on the basis of the inlet quantity, load and depositing behaviour of the substances involved.

These systems can then be extended by additional equipment or further units such as stainless steel screens, outlet screens, pumping stations or sampling equipment.



1	Inlet Ø 160
2	Stainless steel bucket
3	Ball valve Ø 40
4	Backwater flap
5	Submersible pump
6	Cable gland
7	Ventilation

Sediment separator for free-standing installation

**Tender text for article example 97202/400:****KESSEL-sediment separator Ø 400**

according to KESSEL factory standard, made of polyethylene, for free-standing set-up in frost-free rooms, with removable collecting tanks made of stainless steel (hole diameter 5 mm), outlet with odour trap, cover hood with quick action closure, sealed odour-tight.

Inlet and outlet for the connection to PE-HD pipes according to EN 12666-1, PVC pipes according to EN 1566-1 or PP pipes according to EN 1451-1.

Nominal size: NS 2

Collecting tank: 32 Litres
Inlet/outlet: Ø 110
Weight: approx. 40 kg

Tank dimensions:
Length: 1185 mm
Width: 510 mm
Height: 704 mm
Inlet height h2: 528 mm
Outlet height h1: 380 mm

Options:
Inlet/outlet Ø = 40, 50, 75 mm

Hole diameter on collecting tank:
3, 6, 8, 10, 12, 15 mm

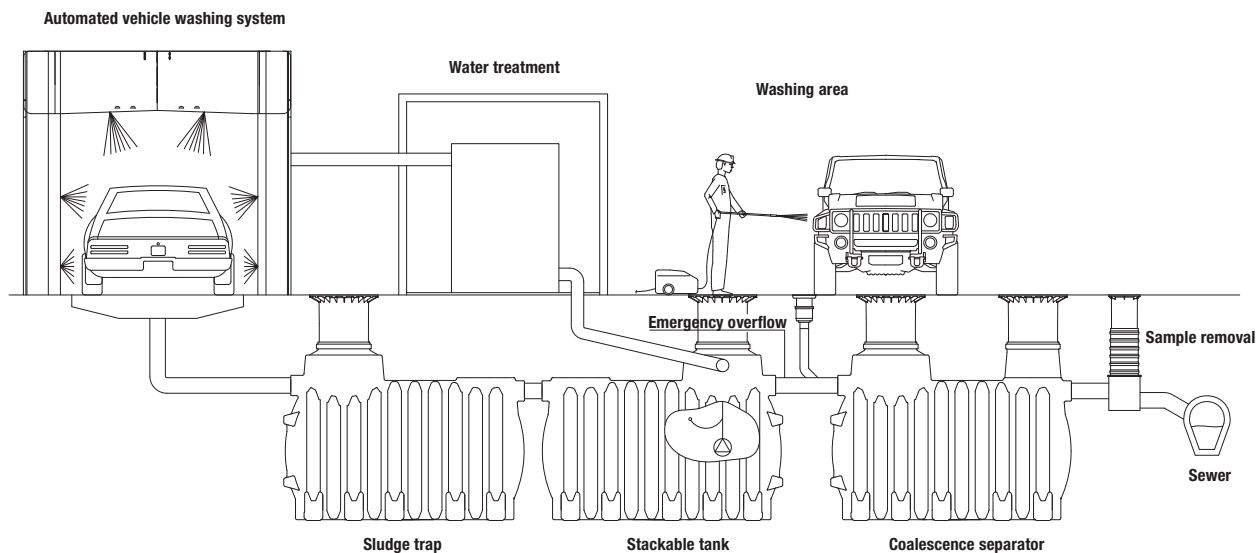
Additional charge for an additional fine sieve (mesh width 1.0 mm)

20-year guarantee on the PE material

Delivery: System completely assembled
Delivery date: according to agreement

Sludge trap

Sludge traps use the physical principle of gravity to separate deposited substances from the wastewater flow. In most cases, a cistern design is installed underground. Different sludge trap volumes in combination with hydraulically optimised inlet and outlet structures permit numerous variants. In addition to rotating tanks of the nominal sizes 2, 3, 4, 5, 6, and 9, cylindrical chamber structures are available, as well as re-enforced corrugated pipe solutions for high load cases. There is a wide range of installation depths, inlet and outlet heights and storage volumes to choose from.



Tender text:

KESSEL-sludge trap

made of PE, for underground installation, resistant against aggressive wastewater (incl. biodiesel, fatty acids), a polymer upper section for continuous height and level compensation, cover plate made of cast iron in accordance with EN 124, screwed odour-tight, tested statics, inlet and outlet with submersible pipe for connection to PE-HD pipes in accordance with EN 12666-1, PVC pipes in accordance with EN 1401-1.

Sludge trap volume: 6000 liters
Inlet/outlet: up to Ø 200
Weight: approx. 470 kg

Installation depth (inlet depth) D: 760 - 1.260 mm

Dimensions:
Length: 3060 mm
Width: 1760 mm
Height: 1630 mm + D

Load class: B (12.5 t)

20-year guarantee on the PE material

Delivery: system completely assembled
Delivery date: according to agreement

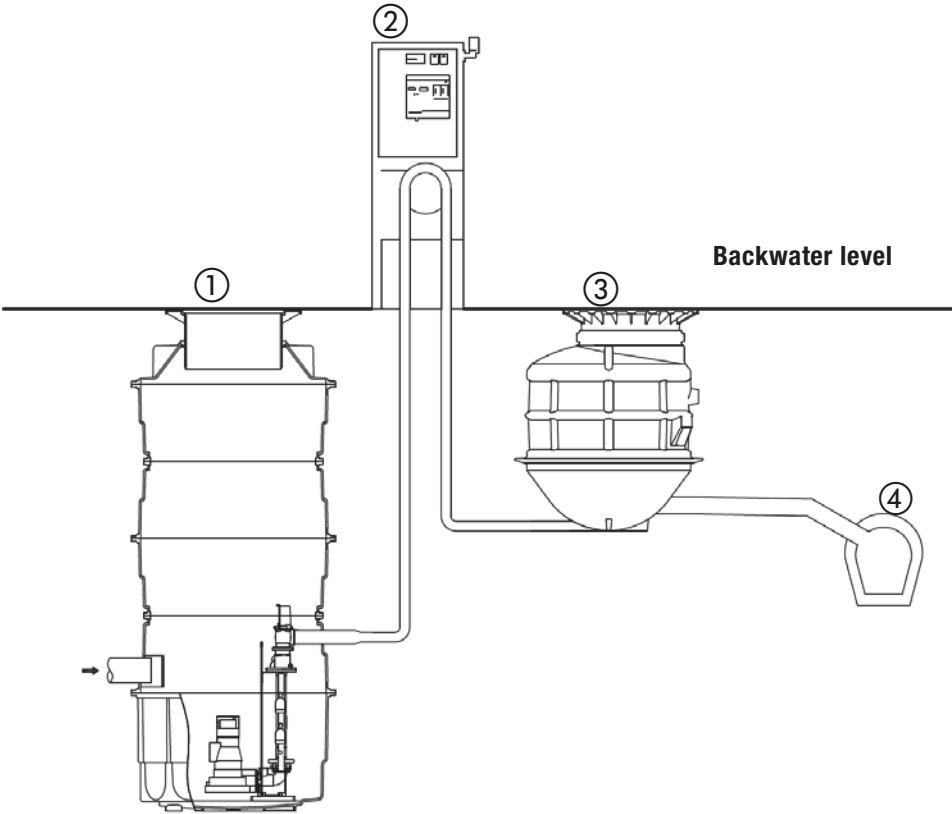
Art. #:

991031/B = 300 liters sludge trap
991061/B = 600 liters sludge trap
991091/B = 900 liters sludge trap
991121/B = 1200 liters sludge trap
991201/B = 2000 liters sludge trap
991301/B = 3000 liters sludge trap
991451/B = 4500 liters sludge trap
991501/B = 5000 liters sludge trap
991601/B = 6000 liters sludge trap
991901/B = 9000 liters sludge trap

Art. #:

991031/D = 300 liters sludge trap
991061/D = 600 liters sludge trap
991091/D = 900 liters sludge trap
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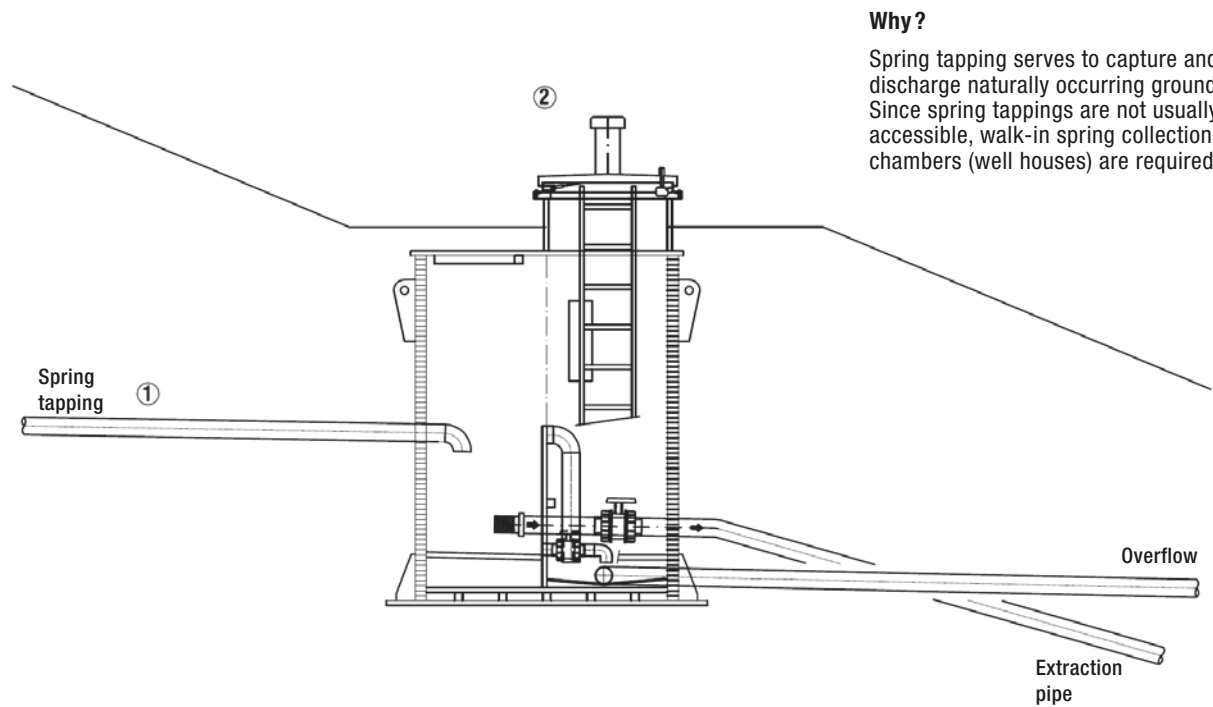
Discharging the pressure pipe into the chamber or sewer



	Product	Function	Further details
1	Pumping station	Lifting of the wastewater above the backwater level	Section on lifting stations in the KESSEL catalogue or IS catalogue
2	External control cabinet with integrated backwater loop	Control of the lifting station and frost-free protection against backwater	Section on lifting stations in the IS catalogue
3	Pressure relief chamber	Relief of the pressure in the pressure pipe and access for control and cleaning	Section in chambers in the IS catalogue
4	Sewer		On site

Why?
According to ATV-DVWK-A 157, the outlet of a pressure pipe to a downstream structure must be particularly carefully protected against corrosion. The inlet should be inserted under water if possible, as shown in the example. Since PE is corrosion-resistant, an alternative solution is to use pressure relief chambers with a free tangential inlet socket instead (see section in chambers in the IS catalogue).

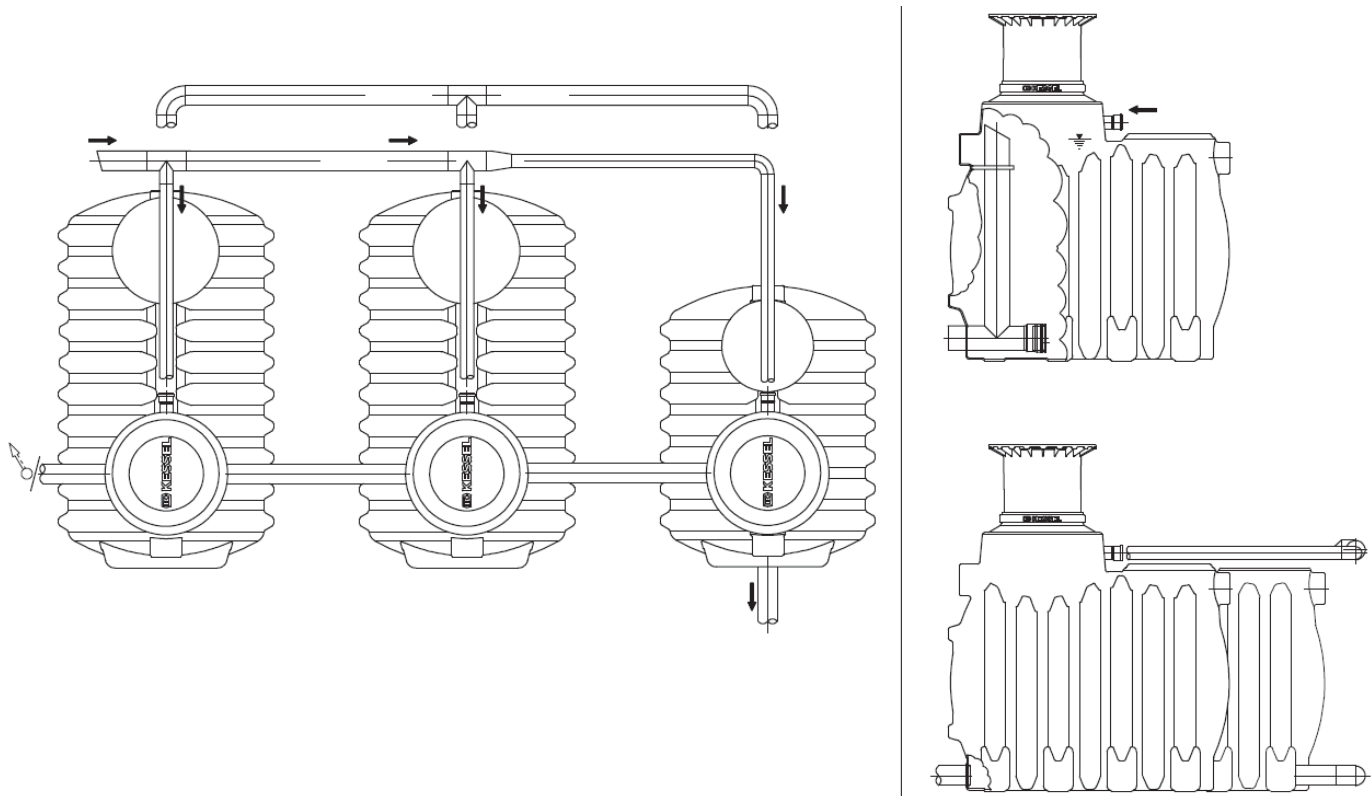
Spring tapping system



Why?
Spring tapping serves to capture and discharge naturally occurring groundwater. Since spring tapplings are not usually accessible, walk-in spring collection chambers (well houses) are required.

	Product	Function	Further details
1	Spring tapping	Capturing and discharge of groundwater	On site
2	Spring collection chamber	<div><input type="checkbox"/> Housing of fittings and any measuring instruments</div> <div><input type="checkbox"/> Sand trap</div> <div><input type="checkbox"/> Delivery metering</div> <div><input type="checkbox"/> Sample removal</div> <div><input type="checkbox"/> Combination of several spring tapplings if appropriate</div>	Section on chambers in the IS catalogue

Rainwater storage / attenuation systems



Why?

Where new development areas are drained, whether these are residential or industrial estates, the existing sewage system is often overburdened. Additional feed pipes are usually no longer possible. Sensible rainwater harvesting systems can remedy the situation in this case. To prevent excess strain on the sewage system and sewage treatment plants, the outflow has to be restricted, in other words discharged gradually.

Aqabase Retention makes use of a retention volume. Rainwater is stored there as soon as the rainwater outflow from the plot areas is larger than the integrated restricted outflow. On the one hand, the retention tank makes rainwater available through a so-called useful volume. On the other, a so-called retention volume for restricted discharge to the sewer is created. This means the sewage system can cope better with the direct, restricted outflow from the development areas.

Variant:

- The hydrostatic pressure is kept constant by means of a float ball at the restrictor opening so that there is a constant quantity flow (0.1 – 1.0 l/s).
- Hydrostatic pressure is exerted on the outlet opening of the static restrictor by the design water level. The size of the outlet opening can be calculated using hydrodynamic (liquid dynamics) equations (from 1.0 l/s).

The retention volume can be extended as required by combining several cisterns (installed in serial or parallel layout).



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93 003.32	244	93 007.11	244	97 711	278	97 834 B	276	99 706.06 B	262
93 003.32/D	242	93 007.11/D	242	97 712	278	97 836	276	99 706.06 D	262
93 003.32/DS	240	93 007.12	244	97 713	278	97 836 A	276	99 706.10 B	262
93 004.01	244	93 007.12/D	242	97 715	278	97 836 B	276	99 706.10 D	262
93 004.01/D	242	93 007.21	244	97 716	278	97 838	276	99 706.18 B	262
93 004.01/DS	240	93 007.21/D	242	97 718	278	97 838 A	276	99 706.18 D	262
93 004.01/DSP	238	93 007.22	244	97 720	280	97 838 B	276	99 706.30BEX	263
93 004.01/MS	236	93 007.22/D	242	97 722	280	97 840	276	99 706.30DEX	263
93 004.01/PVS	234	93 007.31	244	97 730	280	97 840 A	276	99 706.80BEX	263
93 004.02	244	93 007.31/D	242	97 760	279	97 840 B	276	99 706.80DEX	263
93 004.02/D	242	93 007.31/DS	240	97 804	272	97 842	276	99 710.15BEX	263
93 004.02/DS	240	93 007.32	244	97 804 A	272	97 842 A	276	99 710.15DEX	263
93 004.02/DSP	238	93 007.32/D	242	97 804 B	272	97 842 B	276	99 710.30BEX	263
93 004.02/MS	236	93 007.32/DS	240	97 806	272	97 844	276	99 710.30DEX	263
93 004.02/PVS	234	93 007/120B	255	97 806 A	272	97 844 A	276	99 710.80BEX	263
93 004.11	244	93 007/120D	255	97 806 B	272	97 844 B	276	99 710.80DEX	263
93 004.11/D	242	93 010.01	244	97 808	272	97 846	276	99 715.80BEX	263
93 004.12	244	93 010.01/D	242	97 808 A	272	97 846 A	276	99 715.80DEX	263
93 004.12/D	242	93 010.01/DS	240	97 808 B	272	97 846 B	276		
93 004.21	244	93 010.01/DSP	238	97 810	272	97 848	276		
93 004.21/D	242	93 010.01/MS	236	97 810 A	272	97 848 A	276		
93 004.22	244	93 010.01/PVS	234	97 810 B	272	97 848 B	276		
93 004.22/D	242	93 010.02	244	97 812	274	97 850	276		
93 004.31	244	93 010.02/D	242	97 812 A	274	97 850 A	276		
93 004.31/D	242	93 010.02/DS	240	97 812 B	274	97 850 B	276		
93 004.31/DS	240	93 010.02/DSP	238	97 814	274	99 002.01	246		
93 004.32	244	93 010.02/MS	236	97 814 A	274	99 004.01	246		
93 004.32/D	242	93 010.02/PVS	234	97 814 B	274	99 007.01	246		
93 004.32/DS	240	93 010.11	244	97 816	274	99 010.01	246		

General Terms of Sale

General

1. All deliveries, services, offers and other contractual performance shall be effected solely on the basis of these terms of business. Future terms of business shall govern the contractual relationship even if they are not expressly agreed. Terms of business or of purchase of the other party to a contract with KESSEL shall not apply, even if KESSEL does not expressly reject them. This shall also apply to all future business relationships.

2. All individual contractual agreements in writing shall take precedence, but these terms of business shall also apply insofar as they are not in contradiction to the individual contractual agreements. KESSEL retains the ownership of and copyright in cost estimates, drawings and other documents. All infringements whatsoever of these rights shall give rise to a liability for damages.

3. KESSEL expressly states that the information contained in the descriptions, documents and illustrations relating to characteristics of the subject matter of the contract are only authoritative in general terms and that they expressly do not represent any warranted characteristics whatsoever. Characteristics are warranted only if KESSEL states this expressly in writing.

Offer and entering into contract

1. Offers are prepared on the basis of the documents supplied to KESSEL and until the order is firmly placed they remain non-binding and subject to change without notice. The documents supplied are the basis of the offers made by KESSEL. No contract is entered into until KESSEL confirms the order in writing. The same applies to any supplementary agreements or agreements amending the contract.

2. Offers made by KESSEL may be treated as performance specifications only with KESSEL's consent. In this case, the costs incurred by KESSEL as a result of preparing the project shall be reimbursed in a reasonable amount if the order is placed elsewhere.

3. The other contracting party shall review drawings by KESSEL with regard to the possibility of execution of the order, including the technical aspects and the necessary installation measures. KESSEL shall be informed immediately of any discrepancies, failing which KESSEL cannot and shall not take responsibility for any manufacturing defects. KESSEL does not accept cancellations of orders after the contract is entered into.

Passing of risk

1. The risks attached to the subject of contract shall pass to the buyer at the time when it is shipped. If the shipping is delayed or impossible and KESSEL is not at fault, the risk shall pass to the buyer at the time when it is notified that the products are ready for collection. This shall always apply if collection by the other party to the contract is agreed. If the delay results from the breach of a duty of cooperation of the buyer (for example, failure to collect in good time, refusal to take delivery), KESSEL is entitled, after granting additional time without results, to store the subject of contract at the costs of the buyer. Acceptance is then deemed to have been effected. KESSEL may also take the necessary measures and make the delivery, or withdraw from the part of the contract that has not yet been performed, or demand damages, at its own discretion. This does not affect KESSEL's further rights.

2. If the buyer definitively fails to take delivery of the subject of contract it ordered, KESSEL shall be entitled to damages in the amount of 25% of the contract price; in this case, the buyer reserves the right to show that less damage occurred, and KESSEL may present evidence of greater damage.

Price and payment

1. Prices shall be ex works and do not include incidental costs such as statutory value-added tax, packaging, customs, insurance etc. The prices are net prices without any deduction.

2. Payment for each delivery or service shall be made in accordance with the agreed conditions; failing this, payment shall be made immediately in cash without deduction, after notification that the consignment is ready for dispatch. Cash discounts or other deductions will not be granted. The payment shall not be deemed to have been made until KESSEL has unrestricted disposal of the amount. Payments shall be made free of charge for KESSEL.

3. KESSEL shall be entitled, notwithstanding provisions of the buyer to the contrary, to set payments off first against the buyer's older debts. If costs and interest have already become payable, KESSEL shall be entitled to set off the payment first against the costs, then against the interest, and then against the principal claim.

4. In the case of default in payment, enterprises, legal persons under public law or special funds under public law will be required to pay default interest in the amount of 8% above the base rate. Other persons will be required to pay the statutory interest rate of 5% above the base rate. KESSEL reserves the right to provide evidence of and demand higher damages.

5. KESSEL shall be entitled to require advance payments or suitable security of up to 100% of the order value. As a general rule, this right is not subject to any conditions whatsoever. If the buyer does not comply with such requests within a stipulated period of time, KESSEL shall be entitled to withdraw from the contract in whole or in part.

6. The buyer is only entitled to use set-off against KESSEL's payment claims or to exercise a right of retention or price reduction, even if it asserts defects or counterclaims, if the counterclaims have been finally and non-appealably established or are undisputed.

7. KESSEL reserves the right, in the case of default in payment, to assert further loss incurred as a result of the default, even if this exceeds the loss of interest receipts referred to under 4. above.

8. If, in the execution of the contract, return shipments are made, these must be agreed with KESSEL in advance. Return shipments for which KESSEL is not responsible must be sent carriage paid. In the case of a return shipment, KESSEL shall be entitled to charge 25% of the value of the goods, but at minimum EUR 15.00 as a processing fee. The buyer shall have the right to show that the cost of processing was less, and KESSEL shall have the right to show that the cost of processing was higher.

Delivery time

1. Delivery periods shall commence when the contract is entered into, but not before the documents and releases to be supplied by the buyer are provided.

2. The delivery period shall be deemed to have been complied with if the subject of contract has left KESSEL's premises or the buyer has been informed that the subject of contract is ready for dispatch before the delivery period ends. If the buyer exceeds the deadline for collection, KESSEL shall be entitled, after the period ends without results, to impose a final deadline of two weeks, to withdraw from the contract in whole or in part, or to require damages for breach of duty, for delay of performance or instead of performance. The delivery period stated in the confirmation of order is subject to the condition that the buyer has performed its obligations under the contract. If the buyer makes repeat orders or requests changes, the delivery period will be correspondingly extended.

3. In the event of force majeure, such as insurrection, strike or lockout, or the occurrence of other unforeseeable obstructions that are outside KESSEL's sphere of influence, for example stoppages or other events caused by a supplier, the delivery period shall be extended appropriately. This shall also apply if the obstructions occur in the course of an existing delay. If the obstruction lasts longer than three months, the buyer is entitled, after setting a reasonable final deadline, to withdraw from the contract with regard to the part not yet performed.

4. If KESSEL is responsible for non-observance of bindingly agreed periods and dates or is in default, the buyer shall be entitled to compensation for damage resulting from default in the amount of 0.5% for every complete week of default, but up to a maximum total of 5% of the net invoice price of the deliveries and/or services to which the contract relates. Claims exceeding this are excluded, unless the default results at least from gross negligence. KESSEL shall at all times be entitled to part deliveries and part performance.

5. KESSEL gives no guarantee with regard to procurement.

Retention of title

1. KESSEL retains title of the subject of contract until all claims are satisfied, including all claims for payment of current account balance, which KESSEL may assert on whatsoever legal basis against the buyer at present or in future, including the obligation to cash cheques received by KESSEL. If the value of the securities existing for KESSEL exceeds the claims against the buyer by more than 20%, KESSEL shall at its own discretion release securities at the request of the buyer.

2. During the period of retention of title, the buyer shall neither pledge the subject of contract nor transfer its ownership as security. This applies in particular to the transfer of title to warehouse contents by way of security. The buyer shall use its best efforts to ensure that the secured parties in question are adequately informed of this.

3. As long as the retention of title continues, a sale or other disposal of the subject of contract shall require KESSEL's prior consent in writing. In the event of contravention, the rights against third parties that have accrued to the buyer shall be deemed to have been assigned to KESSEL with effect from the time when the contract was entered into. The assignment shall apply in the same way in the case where the goods subject to retention of title are altered or processed by the buyer or if they are sold to more than one person.

4. In the case of conduct in breach of contract by the buyer, in particular in the case of default in payment or if court insolvency proceedings are commenced or applied for with regard to the buyer's assets, KESSEL shall be entitled to take the subject of contract back and the buyer shall be obliged to return it, excluding any right of retention. In this connection, KESSEL shall have a separate right of termination. The buyer shall then bear the costs arising from the taking back. KESSEL is entitled, without prejudice to the buyer's payment obligation, to sell the subject of contract taken back at the best price by sale by private agreement. After deduction of the costs of KESSEL, the proceeds of sale shall be set off against the debt still outstanding.

5. However, if KESSEL asserts its retention of title, this shall not be deemed a withdrawal from the contract. Withdrawal from the contract shall be declared separately by KESSEL if it is to be effected.

6. If the subject of contract is delivered abroad, the above clause shall apply to the extent that this is permissible under the law in whose jurisdiction the delivered item is situated. If the law prescribes a particular form for reservation of title, or even a registration, the buyer shall make the declarations that are necessary to comply with the formal requirements and for registration. If the foreign law permits reservation of property, it shall be deemed to have been agreed on.

Warranty

1. If a delivery or service is defective, KESSEL shall, at its own discretion, remove the defect by subsequent improvement or deliver a product that is free of defects. If the subsequent improvement fails twice or if it is not financially justifiable, the buyer shall have the right to withdraw from the contract or to correspondingly reduce its obligation to pay. In the case of obvious defects, the buyer must notify these without delay in writing; in the case of defects that are concealed or not discernible, it must notify them without delay after they become discernible. KESSEL shall be liable for subsequent improvements and subsequent deliveries in the same extent as for the original subject of contract. For replacement deliveries, the warranty period begins to run anew, but only to the extent of the new delivery.

A warranty is given only for newly manufactured products.

The warranty period is twenty-four months from the date of delivery to the other party to the contract. Sections 377 and 378 of the German Commercial Code (Handelsgesetzbuch) shall continue to apply.

KESSEL GmbH gives a twenty-year warranty that is more extensive than the statutory warranty for light liquid separators, grease separators, inspection chambers, septic systems and rainwater cisterns. This relates to impermeability, fitness for use and structural stability.

This is subject to the requirement that the products are professionally installed and are operated in accordance with their intended use, in compliance with the current installation and operation instructions and the applicable statutory provisions.

2. KESSEL expressly states that wear and tear is not a defect. The same applies to defects that result from defective servicing.

Limitation of liability

KESSEL's liability shall be limited to damage that is caused by KESSEL or one of its agents for whom it is vicariously liable intentionally or with gross negligence. This does not apply to injury to the life, body or health of the buyer.

In other respects, KESSEL's liability is excluded insofar as this is permitted by law.

Place of performance and place of jurisdiction

1. The place of performance is Lenting. All legal relations between KESSEL and the buyer are governed solely by the law of the Federal Republic of Germany.

2. For entrepreneurs, legal persons under public law or special funds under public law, the exclusive place of jurisdiction for all litigation arising directly or indirectly from the contractual relationship, including summary actions to enforce bills of exchange and cheques, is Ingolstadt.

This agreement on jurisdiction also applies to the case where the buyer has no general place of jurisdiction within Germany or after the contract is entered into moves its domicile, seat or habitual abode outside Germany, or where its domicile, seat or habitual abode is unknown at the time when the action is brought. However, KESSEL shall also be entitled to take legal action against the buyer in any other place of jurisdiction that is applicable to the buyer.

Assignment of rights and duties

Assignments of rights and duties under contracts between the buyer and KESSEL shall be valid only with the prior consent of KESSEL in writing. Potential claims of KESSEL may therefore be assigned to third parties only with KESSEL's prior consent in writing.

Provisions on the purchase of consumer goods

KESSEL will recognize recognizes a right of recourse for enterprises pursuant to Section 478 of the German Civil Code where a defect does in fact exist for which KESSEL is responsible and provided that our warranty period has not ended. The other party to the contract must contribute to ensuring that KESSEL is informed in full without delay of possible recourse to KESSEL. At its own discretion, KESSEL shall be entitled, disregarding intermediaries, to settle claims of the consumer or entrepreneur for its own account, whether by subsequent performance, reduction of purchase price or subsequent improvement. Parties to a contract with KESSEL shall submit to or procure for KESSEL without delay all necessary documentation in order that claims of consumers or dealers may be settled as promptly as possible. This does not imply any acknowledgement of a claim on the part of KESSEL.

Invalidity of a condition

If a provision in these terms or a provision in connection with other agreements should be or become invalid, this shall not affect the validity of the other provisions or of individual agreements. In this case, either party to the contract may require a valid provision to be agreed, insofar as this approaches as closely as possible the business and legal purpose of the invalid provision.

Date of these general terms 01 July 2006
KESSEL AG, Bahnhofstrasse 31, 85101 Lenting



Leading in drainage



KESSEL AG

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