INSTALLATION AND OPERATING INSTRUCTIONS

KESSEL Grease Separator Euro “G” NS 1, 2 and 4 for underground installation

KESSEL Grease Separator “G” according to EN 1825-1

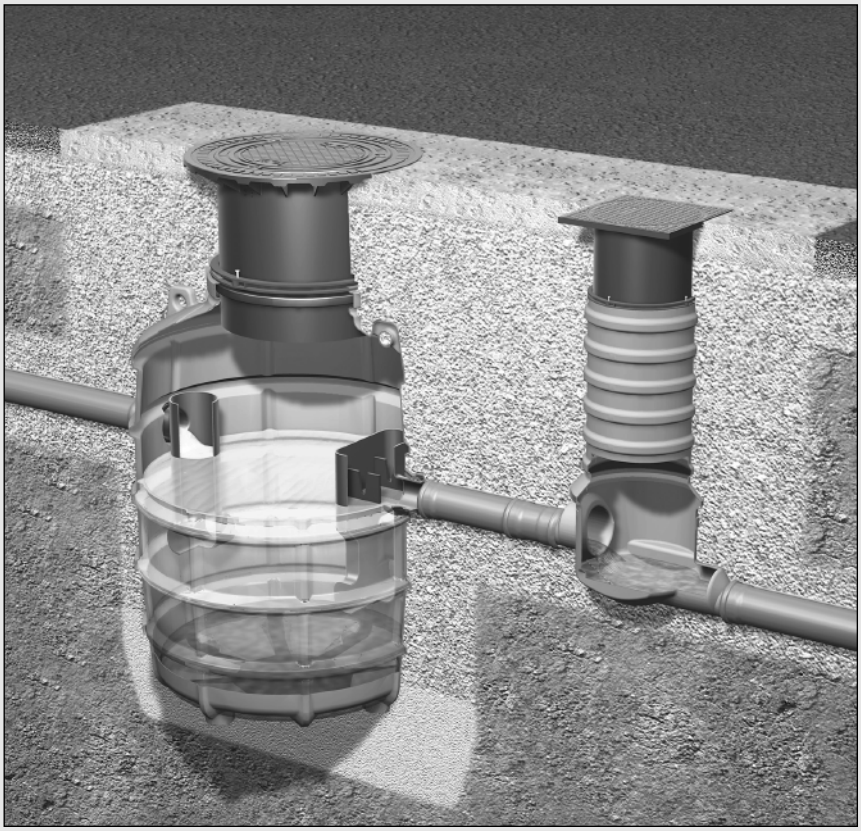


Illustration shows Euro-Norm separator and sampling chamber (load class D)

Product advantages

- **Euro-Norm 1825-1 certified**
- **Quick and easy assembly**
- **Compact / light**
- **100% resistance against aggressive grease and soil acids**
- **Transport friendly**
- **Vertically adjustable upper section**

The installation and service of this unit should be carried out by a licensed professional servicer

Company - Telephone No.

stamp

Subject to technical amendment

Edition 2009/12

ID-Number. 010-614

KESSEL

1. Safety Precautions

By installation, use, maintenance and repair of this unit please follow all appropriate DIN / VDE / DVGW safety precautions and accident prevention guidelines. Also please follow any local safety precautions and accident prevention guidelines established in your area. Also please observe the following:

- BGV C22 (formerly VBG 37)
- DIN 4124 - Safety precautions for excavations / trenches
- DIN EN 1610 - Standard procedures for the installation of drainage piping

BGR 117 (formerly ZH1/77) - Standard procedures for working in confined spaces
Do not allow any type of wastewater into the separator which could hinder the proper separation between oils / fuels and water.

ACCESS:
NO SMOKING! Smoking is strictly prohibited near or around the separator at all times !
All sources of ignition or sparks are prohibited near or around the separator at all times !

SLIPPERY WHEN WET! Take caution when standing / walking near the separator. During disposal, cleaning and maintenance the surrounding area can become extremely slippery due to spilled oil / fuel.

SEPARATOR AREA REGULATIONS:

- No access of the separator for unauthorized personnel
- The location of the separator should be chosen carefully as to allow sufficient access for maintenance, inspection, repair and disposal of the separator.
- The wastewater in the separator can contain skin irritants. After coming in contact with wastewater or the separator itself, it is important to wash, clean and disinfect all skin and clothing which has been contaminated.
- All personnel having anything to do with the separator should have a sound knowledge of the above safety precautions.

Helpful Hints:

1. Manhole covers on top of fuel separators must not be screwed or locked on.
2. Manhole covers on top of fuel separators must not have ventilation ports.
3. All drains connected to the separator must not have any type of odour trap.
4. All drains connected to the separator should be equipped with sludge traps.
5. Wastewater must not be pumped into the separator, it must be gravity fed.
6. Detergents and cleaners used to clean the separator must not be emulsifiable, they should be cleaners which separate quickly with water (contact detergent / cleaner manufacturer for additional details).

Table of contents

Dear Customer,

Before the KESSEL Euro Separator Version G is installed and placed in operation please carefully read and follow all of the instructions contained in this Installation, Maintenance and User's Manual.

Upon delivery of the Euro Separator please thoroughly inspect the separator to make sure that it has not been damaged during shipping. In case damage has occurred to the separator, please follow the instructions listed in the ‚Guarantee' section of this user's manual.

2. General

2.1 Application

According to DIN 4040 and EN 1825, the installation of grease separators is required wherever oils and fats from animals and plants are introduced into waster water systems. Uncollected, oils and fats can cause serious damage to wastewater piping and private / public waste water treatment plants.

2.2 Separator description

The KESSEL Euro Grease Separator Version G consist of a grease separator with integrated sludge trap. The separator is constructed from Polyethylene (PE). Due to the smooth, wax like surface of the material Polyethylene, no additional protective coating is necessary. The separator is designed to be installed underground at a predetermined depth (below the frost level) and with the selected load class manhole cover (Class A, B or D).

3. Installation

The KESSEL grease separator is delivered in ready for operation condition. If the separator consists of more than one container, each container will be packed separately on a pallet. Assembly material and accessories will also be packed on a pallet. In some circumstances the material and accessories will be inside one of the containers. When the shipment arrives, please inspect it immediately for damages which may have been caused during transport / shipping. The KESSEL Euro Grease Separator Version G should be installed underground as close as possible to the fixtures to which it is connected. In circumstances where it is not possible to install the separator in near proximity to the fixtures to which it is connected, the drainage piping (from fixtures to separator) should be equipped with heating elements. The inlet of the KESSEL Euro Grease Separator Version G must be installed below the frost level. This can be achieved by the use of the vertically adjustable upper sections. The manhole covers for the upper sections are lockable, odour tight and available in load classes A (1.5 ton), B (12.5 ton) and D (40.0 ton) and meet EN 124 standards.

Installation

1. The excavation in which the separator is to be installed must be level and capable of handling the appropriate loads.
2. Place the separator in the prepared excavation hole. Make sure the separator rests at the appropriate level. Fill the separator with water to the outlet level.
3. The excavation should now be backfilled with non-binding material such as sand, gravel or process. Backfill only the main body of the separator, do not backfill around the upper sections. The backfill should be firmly compacted at incremental levels (approx 500 mm). For load class D (40.0 ton) situations, the upper section and manhole cover of the underground separator must be poured into a steel reinforced concrete apron for proper load support. Additional information regarding this load class D support is available from KESSEL.
4. Connect the inlet and outlet of the separator to the drainage piping.
5. No vertical pipes should be connected within one meter of the inlet of the separator. This one meter section (immediately prior to the inlet of the separator) serves as a wastewater calming section which hinders turbulence which can introduce unwanted oxygen and foam into the separator. All connections of vertical pipe (outside of the 1 meter calming section) should me connected to the main inlet pipe with two 45 degree fittings rather than one abrupt 90 degree fitting.
6. Install and adjust the upper section(s) of the separator to the desired level and secure with the included clamp ring (clamp ring will rest on the chamber itself). Final upper section level ad-justments can be made by manipulating the elevation adjustment screws located on the clamp ring

Watertightness test

Before the separator is fully backfilled, the upper section and gasket must be tested for watertight-ness. To perform this test, insert inflatable closure balloons into the inlet and outlet of the separator and inflate to insure a tight seal. Fill the remainder of the separator with fresh water until the water level is toward the top of the upper section (where the manhole cover is placed). Check to make sure that there are no leaks. If there are no leaks, the inflatable closure balloons can be removed and the upper section can be backfilled and compacted.

Note - When the outlet of the separator is to be installed below the sewer or wastewater piping level, a lifting station (based on DIN 1986 and prEN1825) must be installed. KESSEL offers a full line of lifting stations designed for this circumstance.

Note - Underground separators to be installed below the groundwater table are available upon request.

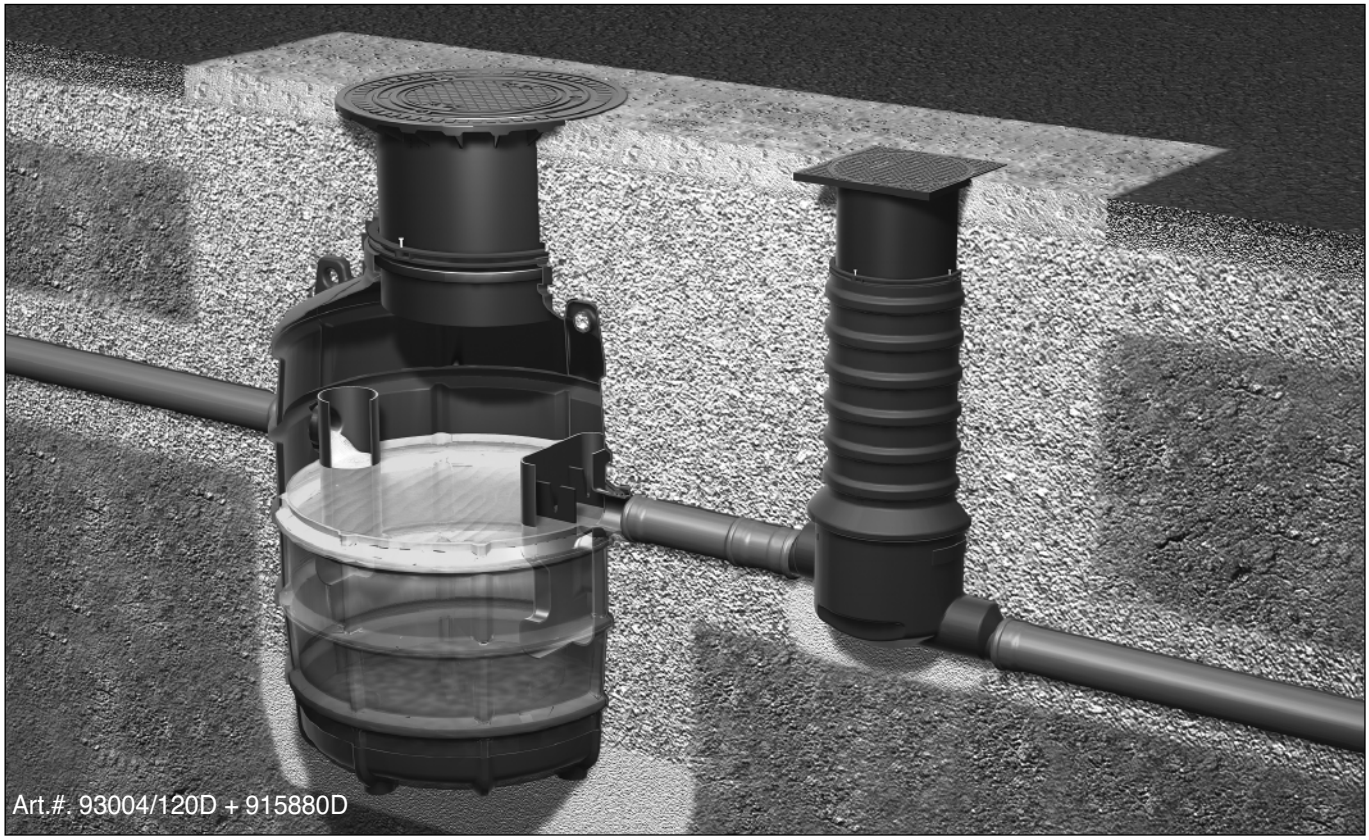
Note

The KESSEL Euro Grease Separator Version G is designed for locations where:

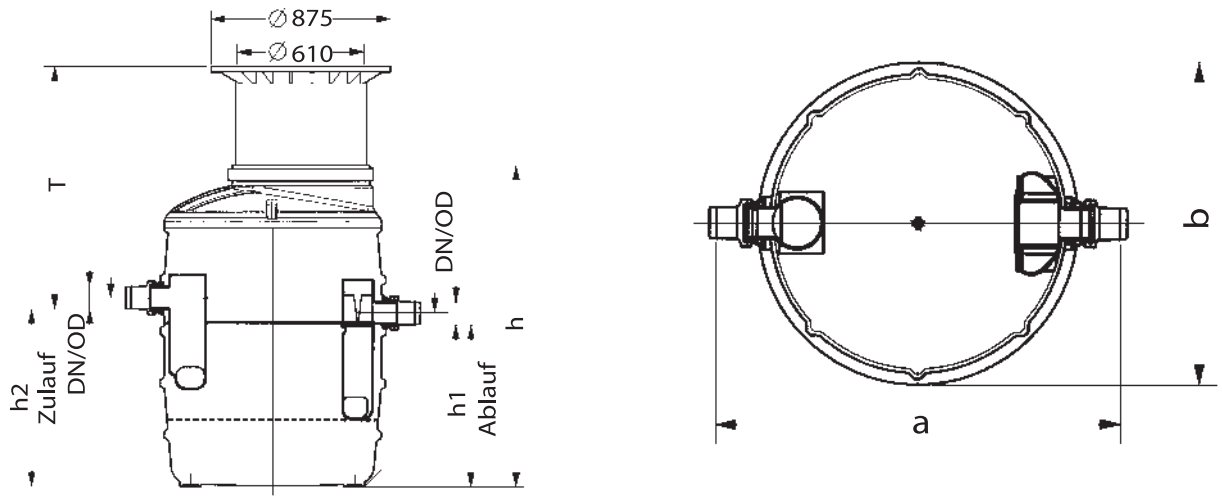
1) Dispersion of odours during the emptying, cleaning or maintenance of the separator will not pose a problem.
2) Access of the disposal hose from the disposal truck to the separator will not pose a problem.

3. Installation

3.1 Installation Illustrations (Class B, 12.5 ton)



Dimensioned drawing



T = Installation Depth OD = Outer diameter

NS	DN	OD	a	b	h*	h1	h2	Wastewater content		
								Sludge trap	Separator volume	Grease storage
1	100	110	1380	1106	1050	540	610	140 l	230 l	70 l
2	100	110	1380	1106	1300	790	860	200 l	370 l	120 l
4	100	110	1380	1106	1550	1040	1110	400 l	370 l	160 l

Additional installation depths available upon request.

3. Installation

Assembly
The KESSEL separator is shipped fully assembled and ready for operation. Each chamber is shipped on an individual pallet. Accessories may either be packed along side the separator or possibly be stored inside a separator tank.

Notice:
Separators are packaged and shipped upside down due to the heavy weight of the cast iron manhole cover. Take caution when unpacking the separators.
These separators can be easily dissassembled if required. In order to re-assemble the separator please follow these steps:

NS 1 and NS 2 Separator

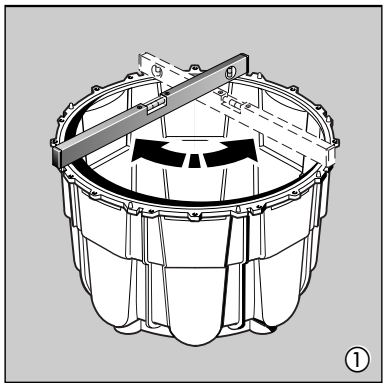
1. Place separator base section on floor (see Abb 1).
2. Place the large sealing gasket inside the recessed area. After gasket is installed lubricate the upper visual portion of the gasket only (see Abb 2).
3. Place sludge trap in the appropriate location in the base section (see Abb 3).
4. Place sludge trap overflow in the direction of the outlet of the separator (see Abb 4).
5. Lower top section of separator onto the base section until slots on top section insert into slots on base section (see Abb 5). Make sure that the lubricated seal on the base section is completely inserted into the recessed gasket area of the top section.
6. Connect the top and base section together with the provided clips as illustrated (see Abb 6 a/b/c). Place the outlet pipe into the separator through the opening on the top section until the base fits into the guide slot at the base of the separator. Lubricated the gasket and connect outlet pipe with outlet (see Abb 7). Insert sealing gasket into recessed hole of top section. Lubricate the visible portion of the gasket and then insert upper section with cast iron manhole cover into top section of separator.

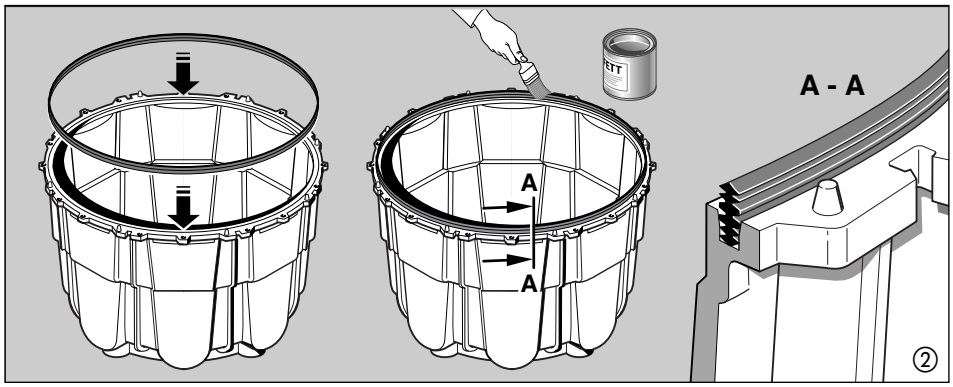
1. Place separator base section on floor (see Abb 1).

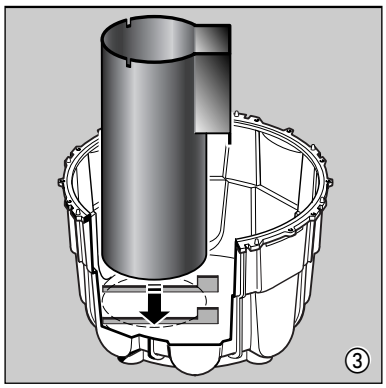
NS 4 Separator

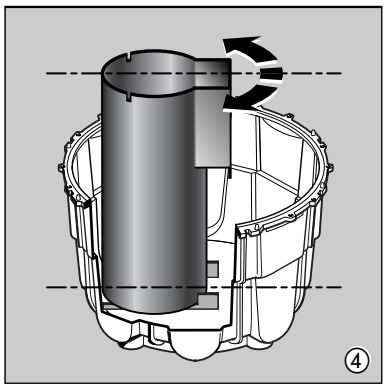
ket is installed lubricate the upper visual portion of the gasket only. Take caution that the NS 4 separators are made up with chamber section with different diameters. Be sure that the proper sized sealing gasket is used with the corresponding sized chamber section (see Abb 2).
3. Connect the top and base section together with the provided clips as illustrated (see Abb 6 a/b/c).
4. Place the outlet pipe into the separator through the opening on the top section until the base fits into the guide slot at the base of the separator. Lubricated the gasket and connect outlet pipe with outlet (see Abb 7). Insert sealing gasket into recessed hole of top section. Lubricate the visible portion of the gasket and then insert upper section with cast iron manhole cover into top section of separator.
6. Connect two chamber tanks with another with the supplied coupling (see Abb 9)

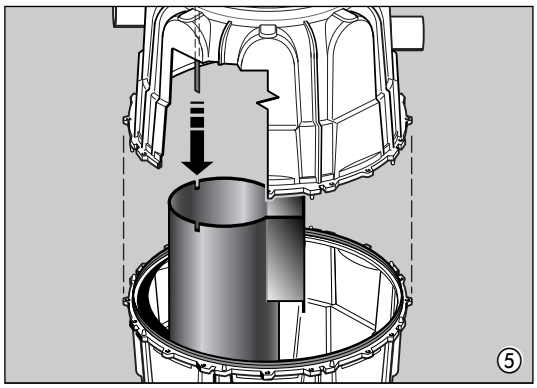
3. Installation

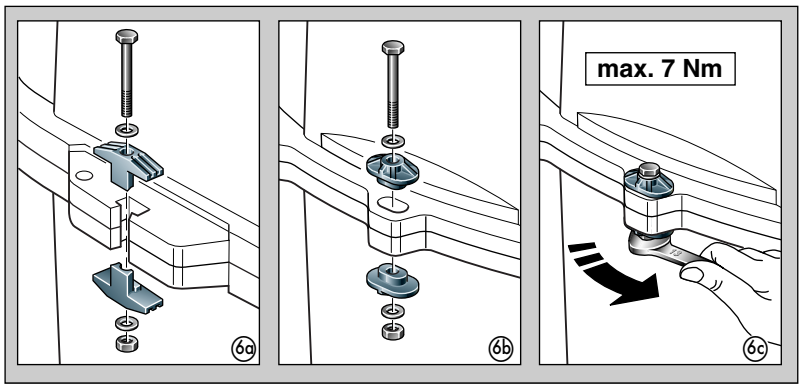


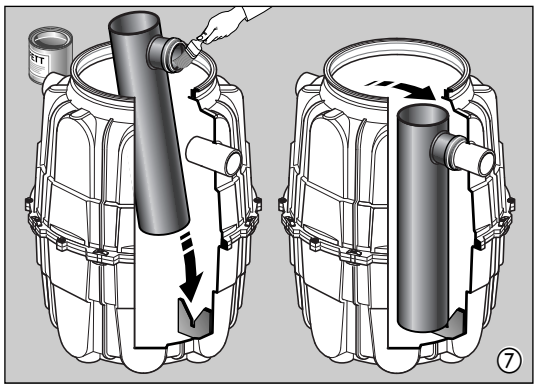


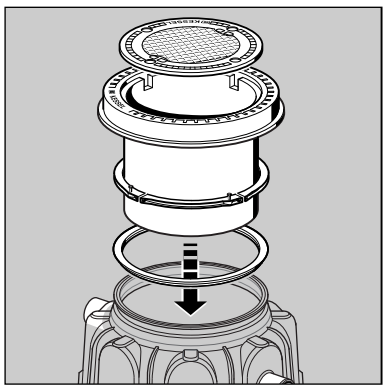


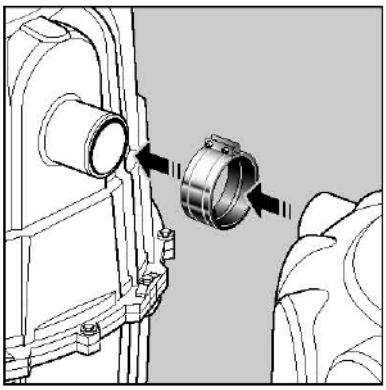






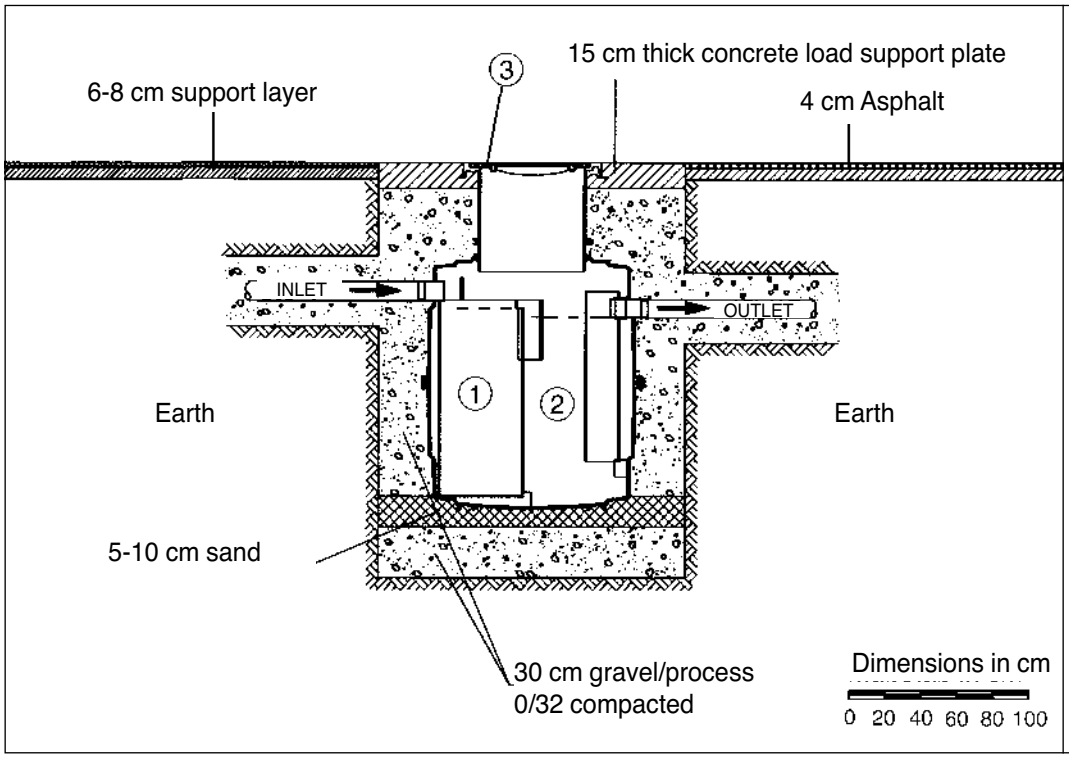






3. Installation

➢ **Installation Illustrations** (Class D)



① **KESSEL-Grease Separator G NS 2**

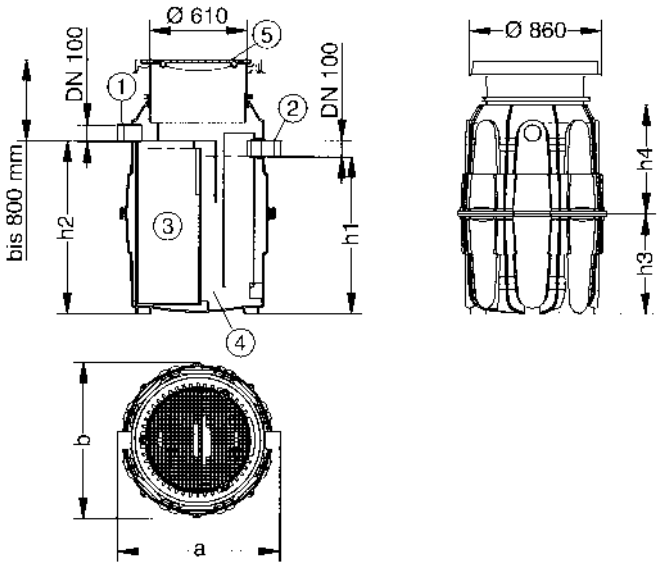
① Sludge trap

② Grease separation area

③ Upper section with cover (load clas B/D)

Illustration shows NS 2

➢ **Dimensioned Drawing NS 1 und NS 2**

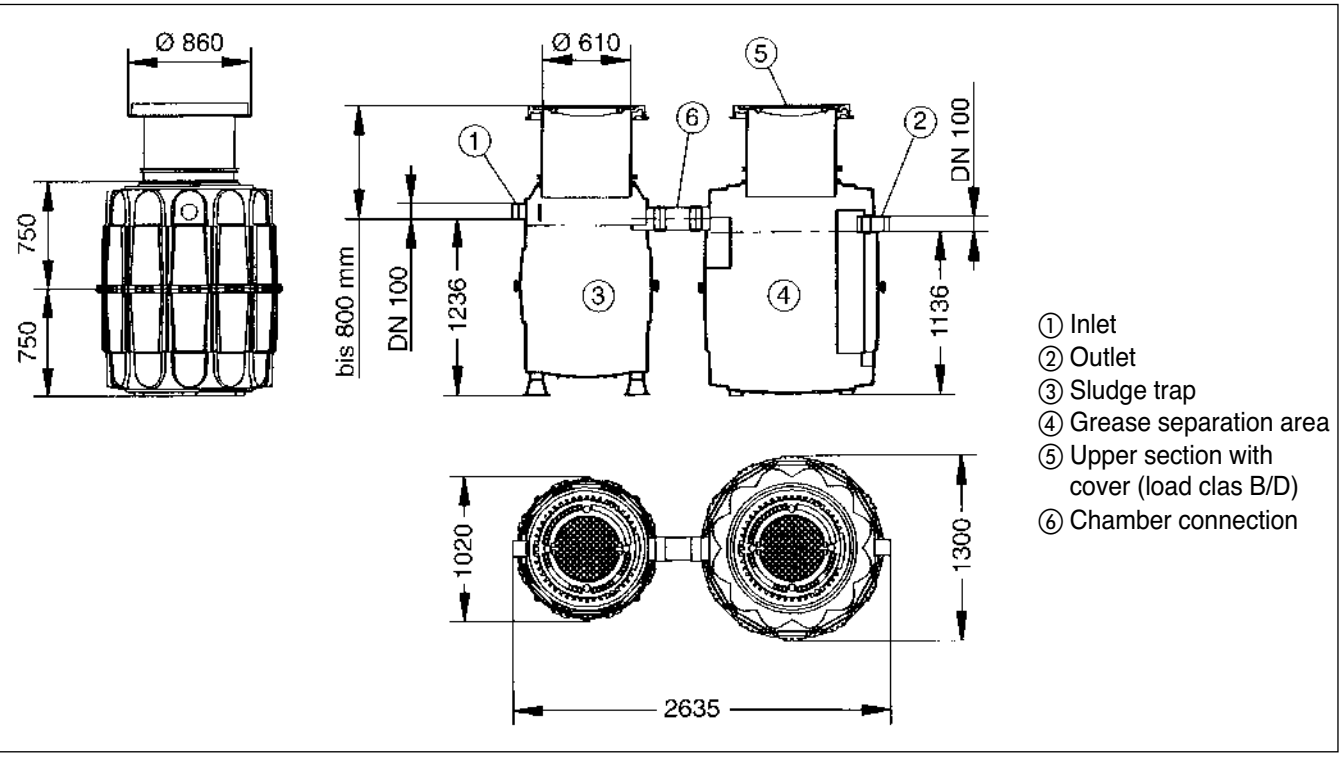


① Inlet
② Outlet
③ Sludge trap
④ Grease separation area
⑤ Upper section with cover (load clas B/D)

								wastewater content		
NS	**DN**	**a**	**b**	**h1**	**h2**	**h3**	**h4**	**Sludge trap**	**Grease Storage**	**Weight ca. kg**
1	100	1055	1020	1020	1120	650	720	120 l	405 l	145 kg
2	100	1355	1300	1136	1236	750	750	200 l	935 l	195 kg

3. Installation

➢ **Dimensioned Drawing NS 4**



4. Commissioning

4.1 Separator commissioning

Before the separator is put into service please make sure that:
- The separator is completely clean, including inlet and outlet, and that the interior of the chamber is free of dirt and debris.
- The cleaned separator is completely filled with clean cold water up to the outlet.

4.2 Commissioning participants

The commissioning of the separator is usually handled by a tradesman although this can be handled by a KESSEL contractor or KESSEL employee if desired.

1) The following people should be on hand during the commissioning:
   Building contractor representative
   Plumber / tradesman who will be maintaining the separator
   Building maintenance personnel
   Disposal company who will be handling the disposal account
2) Commissioning preparation
   Separator is completely filled with clean water

3) Commissioning
   - Separator to be checked for watertightness and for proper functionality
   - Contents of this user's manuals to be discussed with those present
4) Transfer of this manual to the appropriate personnel

5. Separator contents disposal

The first emptying (disposal) of the separator contents should take place within 2 to 3 weeks from the day the separator was placed into service.

Disposal intervals
According to DIN V 4040-2, it is advised that sludge and grease separators should be fully emptied, cleaned and refilled with cold fresh water at fourteen day intervals or at least on a monthly basis. In order for a grease separator to function as designed, it is very important that the separator is emptied at regular intervals as described above. Due to this, it is recommended that a licensed disposal company is contracted to empty the separator at regular intervals and during times when strong odours will not present a problem.

Disposal procedure
- Remove manhole cover.
- Place disposal truck's suction hose inside separator and remove entire contects of chamber.
- Rinse and clean interior walls of chamber. Remove coagulated fat/oil and debris.
- Refill chamber with cold clean water.
- Clean and grease all accessible seals. Replace seals if necessary.
- Replace cover(s) and secure with cover clamps.

6. Maintenance

Maintenance of the separator

The separator should be tested to make sure that it is completely watertight before it is placed into operation and also during periodic intervals thereafter.

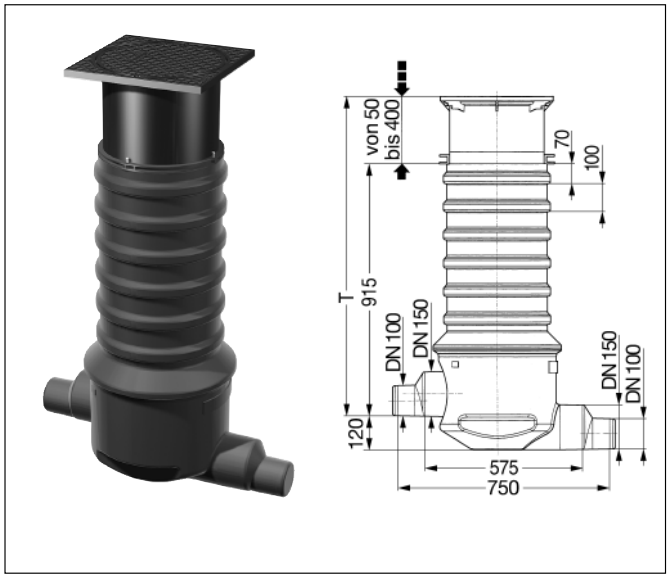
1. Surface care - the interior walls of the separator should be cleaned and checked for problems at regular intervals.
2. The separator should be thoroughly checked two times per year. During these inspections the separator should be completely emptied and thoroughly cleaned.

► The interior walls of the separator, as well as the exterior walls, should be cleaned and checked for damage every time the separator contents are disposed.
► It is recommended that a written log is kept for the separator. Documentation and information concerning all disposals and any other work done to the separator should be kept in this log for future reference.

Please make sure that:

1. This Installation, Service and Maintenance Guide and any other documentation relating to the separator is kept in a safe place accessible to all who work on the unit.
2. Disposal of the contents of the separator follows the exact guidelines stated in this guide.
3. The disposal of the separator is carried out by a qualified, licensed company.

7. Replacement parts and accessories



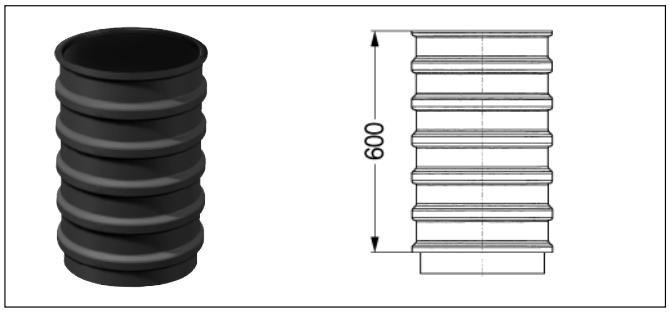
KESSEL-Sampling Chamber B=400 for connection to separator systems

For underground installation, free flowing sample availability.
For installation depths T=….
DN 100 / 150 inlet / outlet (required size cut off on-site), connection to SML pipe according to DIN 19522.
Sampling chamber internal diameter 400mm, vertically adjustable upper section with Load Class A, B or D covers, odour tight, locked, inlet / outlet height difference – 120mm.
Manufacturer: KESSEL.

Installation height T (mm)	Inlet DN	Outlet OD	Art.No. Class A	Class B	Class D
*400-1300	100/150	110/160	915 880 A	915 880 B	915 880 D
1330-1660	100	110	915 813 A	915 813 B	915 813 D
1330-1660	150	160	915 823 A	915 823 B	915 823 D

* Neck portion of chamber can be sawed of on-site to reduce installation height (do not cut at recessed gasket area).

Article Number 915402 for deeper installations



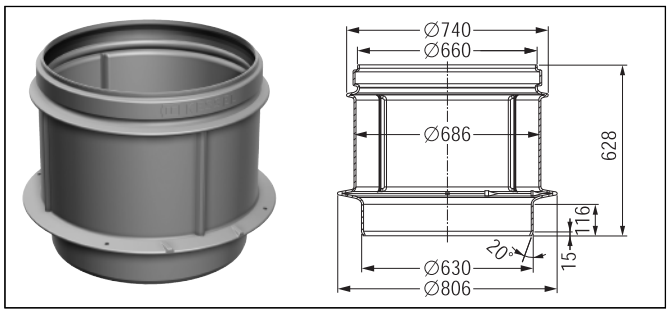
KESSEL-Extension section for sampling chambers

for deeper installation

Max. extension height. 600 mm

Manufacturer: KESSEL

	Art.No.
-	915 402

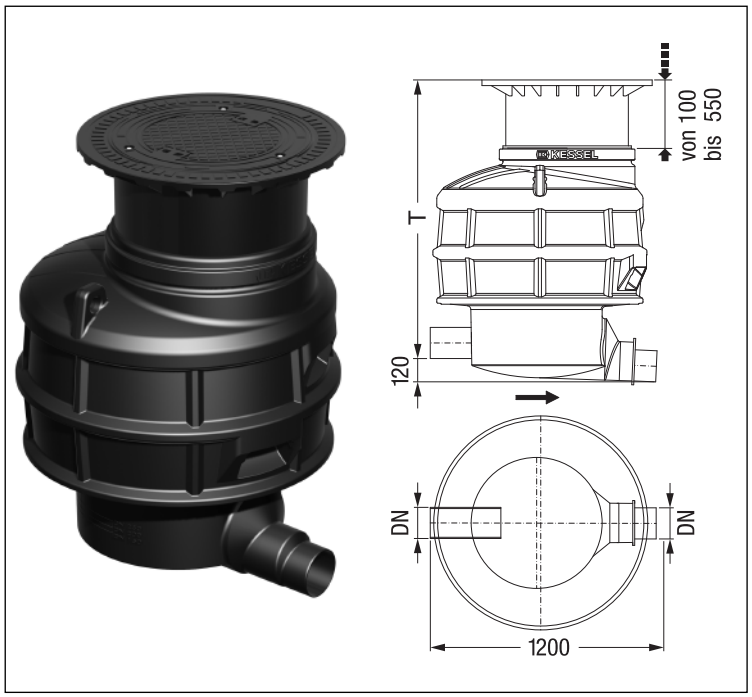


KESSEL-Extension section for underground

KESSEL separator systems, polyethylene material, includes gasket

Extension height	Art.No.
512 mm	917 406
1012 mm	917 407

7. Replacement parts and accessories



KESSEL-Sampling chamber Ø 1000 mm in polyethylene synthetic material, for separation systems, for underground installation

Inlet and outlet Ø ..for synthetic material pipes in: PE-HD (according to DIN 19537); PVC (according to DIN V19534); PP or AS.

Installation depths T=... mm in monolithic structure, water-tight, resistant to aggresive wastewater, with integrated access steps, with telescopically height-adjustable upper section made of polymer, sealed odor-tight with cover class B/D according to EN 124 in cast iron, incl. removal mechanism. Drop height 120 mm.

Installation depthT (mm)	Inlet/ Outlet	fits separator	Art.#. Class B	Calss D
1180-1630	DN 100	NS 1,2 und 4	9151010 B	9151010 D
1180-1630	DN 150	NS 7 und 10	9151015 B	9151015 D
1180-1630	DN 200	NS 15, 20 und custom-made	9151020 B	9151020 D

Other installation depths available on request

8. Guarantee

1. In the case that a KESSEL product is defective, KESSEL has the option of repairing or replacing the product. If the product remains defective after the second attempt to repair or replace the product or it is economically unfeasible to repair or replace the product, the customer has the right to cancel the order / contract or reduce payment accordingly. KESSEL must be notified immediately in writing of defects in a product. In the case that the defect is not visible or difficult to detect, KESSEL must be notified immediately in writing of the defect as soon as it is discovered. If the product is repaired or replaced, the newly repaired or replaced product shall receive a new warranty identical to that which the original (defective) product was granted. The term defective product refers only to the product or part needing repair or replacement and not necessarily to the entire product or unit. KESSEL products are warranted for a period of 24 month. This warranty period begins on the day the product is shipped form KESSEL to its customer. The warranty only applies to newly manufactured products. Additional information can be found in section 377 and 378 of the HGB.
   In addition to the standard warranty, KESSEL offers an additional 20 year warranty on the polymer bodies of class I / II fuel separators, grease separators, inspection chambers, wastewater treatment systems and rainwater storage tanks. This additional warranty applies to the watertightness, usability and structural soundness of the product.
   A requirement of this additional warranty is that the product is properly installed and operated in accordance with the valid installation and user's manual as well as the corresponding norms / regulations.

2. Wear and tear on a product will not be considered a defect. Problems with products resulting from improper installation, handling or maintenance will also be considered a defect.

10.11.2009

9. Separator characteristics

KESSEL

Bahnhofstr. 31
D-85101 Lenting

Article _____

Type _____

Art.-# _____ Ser.#. _____Year_____

EN _____Approval_____

l x w x h _____

Sludge trap volume l_____Grease storage volume/l_____

Volume_____Material_____

Control stamp_____Weight_____

This unit has been checked for watertightness to be sure that it is fully operational before leaving the factory.

_____ _____

Date Name of examiner

Important contacts / Info

Separator Type: _____

Day / Hour _____

Project description /Building services supervisor _____

Address _____

Telephone / Fax _____

Builder _____

Address _____

Telephone / Fax _____

Planner _____

Address _____

Telephone / Fax _____

Contracted plumbing company _____

Address _____

Telephone / Fax _____

KESSEL-Commissions no.:

System operator /owner _____

Address _____

Telephone / Fax _____

User _____

Address _____

Telephone / Fax _____

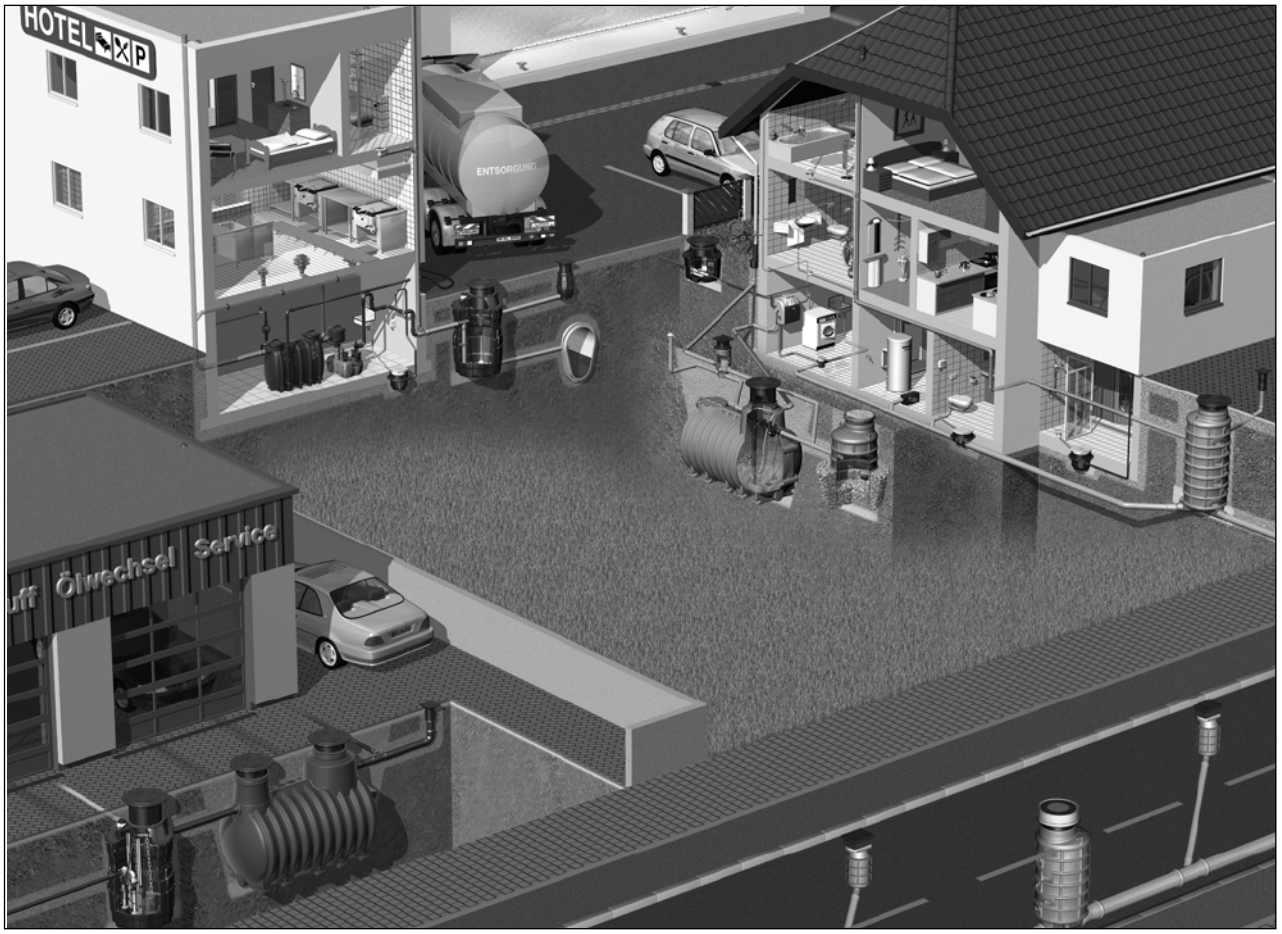
Person of delivery _____

Other remarks _____

The system operator, and those responsible, were present during the commissioning of this system.

_____	_____	_____
Place and date	Signature owner	Signature user

Everything for drainage



- Backwater valves and cleanouts
- Polymer and Ecocast drains
- Volatile liquid traps
- Lifting stations, pumps, warning and control units
- Rainwater management systems
- Grease separators
- Oil/fuel and coalescence separators
- Inspection chambers
- Custom projects for industrial applications

KESSEL