Operating manual

2011-06-15 edition

Lipumax P-B and -D

Grease separator plant

Type -B

- Disposal and cleaning via open cover

Type -D

- Disposal via direct suction
- Cleaning via open cover

For a safe and proper use, read operating manual and further product-related documents thoroughly.
Hand on to end user and keep up to product disposal.

0150.34.05_V1.1_Translation of the original German operating manual.

Welcome

The ACO Passavant GmbH (hereinafter called ACO) appreciates your confidence and supplies you with a grease separator plant (hereinafter called plant) which is state-of-the-art technology and which was checked for its proper condition in line with our quality controls prior to its delivery.

- The texts do not contain abbreviations, exception:
  - e. g. = for example
  - min. = minimum
  - max. = maximum
  - nom. = nominal
  - ST = sludge trap
  - Fig. = figure
- Attachment 1 of manual contains a table and illustration directory.

ACO Passavant GmbH
Ulsterstrasse 3
D-36269 Philippsthal

Tel.: + 49 (0) 3 69 65 / 81 9 -0
Fax: + 49 (0) 3 69 65 / 81 9 -3 61

www.aco.com

1 Preamble

This operating manual for the Lipumax P-B and P-D plant was issued with high diligence and contains information which guarantees safe operation.
If, however, some mistakes have slipped in or if some information is missing, please advise us accordingly.

1.1 ACO Service

In the case of questions on the plant and this operating manual, please contact our ACO Service.

ACO Service
Im Gewerbepark 11c
D-36457 Stadtlengsfeld

Tel.: + 49 (0) 3 69 65 / 81 9 -4 44
Fax: + 49 (0) 3 69 65 / 81 9 -3 67
service@aco-online.de

1.2 Product identification

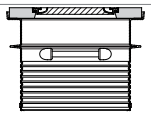
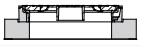
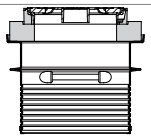
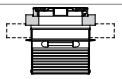
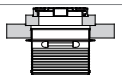
Identify plant supplied by means of type plate information, 📖 chapter 4.6, and mark same in below table.

Table 1: Specifications for product identification

	Art. no.	Type	Nom. size/ST	Illustration*	Year built	Serial no.
○	3202.80.00	P-B	NS 2/200		_____	_____
○	3202.80.10		NS 2/400		_____	_____
○	3204.80.00		NS 4/400		_____	_____
○	3204.80.10		NS 4/800		_____	_____
○	3205.80.00		NS 5,5/550		_____	_____
○	3205.80.10		NS 5,5/1100		_____	_____
○	3207.80.00		NS 7/730		_____	_____
○	3208.80.00		NS 8,5/850		_____	_____
○	3210.80.00		NS 10/1000		_____	_____
○	3202.81.00	P-D	NS 2/200		_____	_____
○	3202.81.10		NS 2/400		_____	_____
○	3204.81.00		NS 4/400		_____	_____
○	3204.81.10		NS 4/800		_____	_____
○	3205.81.00		NS 5,5/550		_____	_____
○	3205.81.10		NS 5,5/1100		_____	_____
○	3207.81.00		NS 7/730		_____	_____
○	3208.81.00		NS 8,5/850		_____	_____
○	3210.81.00		NS 10/1000		_____	_____

* Illustration with top system (cover class B 125)

Table 2: Specifications for product identification of shaft components

	Art. no.	Cover class	Fig.	Installation depth T
◯	3300.14.00	A 15		420 – 445 mm
◯	3300.14.01	A 15		720 – 1045 mm
◯	3300.14.02			720 – 1985 mm
◯	3300.15.00	B 125		585 – 610 mm
◯	3300.15.01	B 125		885 – 1220 mm
◯	3300.15.02			885 – 1985 mm
◯	3300.17.00*	D 400		865 – 1985 mm
◯	3300.16.00**	D 400		

* with in situ load distribution plate ** with load distribution plate

1.3 Warranty

For full particulars on warranty refer to ACO's Terms and Conditions under www.aco-haustechnik.de/agb.html.

1.4 Owner, user

If owner and user are different persons, agreements are useful:

- Who is responsible for current operation?
- Who initiates maintenance or repair works at plant?
- Who reacts in the case of malfunction?
- ...

1.5 Depiction of warning notices

For better differentiation, risks and hazards are marked in the operating manual by following warning signs and signal words:

Table 3: Risk levels

Warning signs and signal words		Meaning	
	**DANGER**	Injuries to persons	Refers to a dangerous situation leading to death or severe injuries if it is not avoided.
	**WARNING**		Refers to a dangerous situation possibly leading to death or severe injuries if it is not avoided.
	**CAUTION**		Refers to a dangerous situation possibly leading to medium or light injuries if it is not avoided.
	CAUTION	Property damage	Refers to a situation possibly leading to damages of components, of plant and/or its functions or of an object in its work environment, if it is not avoided

Exemplary warning notices:

SIGNAL WORD

Cause of danger

Consequences of danger

Description/listing of protective measures
(Note and calls for action)

1.6 Symbols used in the manual

Useful hints and additional information facilitating the work

Steps to be carried out

References to further information in this operating manual or to other documents

2 For your safety

Please read the safety notes in this chapter prior to using the plant. Severe injuries may occur in the case of misuse.
If owner or user of plant changes, documents have to be handed on.

2.1 Proper use

2.1.1 Field of application

This plant was designed for retention of fats and oils of organic origin from wastewater. The industrial causer of wastewater from establishments in which fatty wastewater accumulates must install a grease separator. This applies e. g. to kitchens and meat-processing establishments.

The owner is responsible for design (planning and dimensioning), installation and operation of plant (📖 ACO K9, chapter 10, planning notes).

2.1.2 Limitations of use

If the locally valid limit values of lipophilic substances (sum of organic parts: free separable parts, emulsified and dissolved parts, suspended solids) are exceeded when wasterwater enters the sewers, a further wastewater treatment is required.

Suitable wastewater treatment plants,
📖 www.aco-haustechnik.de/verfahrenstechnik-abwasserbehandlung-biologie.html.

2.1.3 Foreseeable misuse

No substances may be discharged or fed into the plant which pollute waters or affect functional capability of plant.

This includes in particular:

- Wastewater containing faeces
- Rainwater
- Wastewater containing mineral oils and fats
- Wastewater from wet disposal units or crusher units
- Wastewater from slaughteries
- Solidifying fats in concentrated form (e. g. chip fat)
- Foul water containing a noteworthy part of fats in non-separable form, i. e. in emulsified or dissolved form

2.2 Required qualifications

All works at plant must be carried out by specialists, if not expressly mentioned that different persons (owner, user) are allowed to do so.

Besides a perennial work experience, specialists must have proof of the following knowledge:

Table 4: Staff qualification

Activities	Person	Knowledge
Design of operational alterations New context of use	Planner	■ Knowledge of building, sanitary and house technique ■ Evaluation of applications of wastewater technology and proper design of grease separator systems
Transport/storage	Forwarders, dealers	■ Proof of load securing education ■ Safe handling of lifting accesories
Civil engineering/sanitary works initial commissioning, maintenance, repair works, decommissioning, dismantling	Specialists	■ Excavation or filling of pit ■ Safe handling of machines ■ Safe handling of tools ■ Laying and connection of pipelines and joints ■ Product-specific knowledge
Operation, operation monitoring, easy maintenance and fault remedy	Owner, user	■ No specific prerequisites
Disposal	Specialists	■ Proper and environmentally friendly disposal of materials and substances ■ Decontamination of harmful substances ■ Knowledge about recycling

2.3 Personal protective equipment

For different works at the plant, personal protective equipment is required.
The specialist company must put a sufficient number of protective equipment at the disposal of their employees. Supervisors must make sure that the equipment is worn.

Table 5: Personal protective equipment

Signs giving orders	Meaning	Explanation
	Wear safety shoes	Safety shoes offer good anti-slip property, particularly under wet conditions, as well as high puncture resistance, e. g. with nails, and they safeguard the feet against objects falling down, e. g. during transport
	Wear safety helmet	Safety helmets safeguard against head injuries, e. g. in the case of objects falling down or impacts
	Wear safety gloves	Safety gloves safeguard the hands against light crushes and cutting damages, particularly during transport, commissioning, maintenance, repair and dismantling

2.4 Plagiarisms/non-approved parts

Prior to its market introduction, the plant had to pass all product tests and all components were checked under high load.

Copies of high-quality spare parts are increasingly available. Installing non-approved parts affects safety and rules out warranty by ACO.

In the case of an exchange, exclusively use original ACO parts or "spare parts released" by ACO.

2.5 Basic risk potential

Contact with fatty wastewater, e. g. during maintenance works, may lead to infections.

2.6 Responsibility of owner

It is in the owner's responsibility that the following points are observed:

- The plant must be operated in accordance with its intended use and in proper condition, chapter 2.1.
- Function of protective equipment must not be affected.
- Service intervals must be kept and faults must be remedied promptly. Remedy faults oneself only if relevant measures are described in this operating manual. For all other measures, the ACO Service is in charge.
- The type plate of the plant may not be removed and it must remain legible chapter 4.5.
- Sufficient number of required "personal protective equipment" (PPE) must be available and must be worn, chapter 2.3.
- This operating manual must be available at place of installation legibly and completely and staff members must have been trained with this manual.
- Only qualified and authorised staff members may be used, chapter 2.2.

3 Transport and storage

This chapter holds information on correct transport and accurate storage.

Supply unit

The plant housing is delivered fixed to a pallet. The components of the top system (top section, shaft components and cover) are fixed to at least one further pallet. The respective pallet units are protected by a foil, chapter 4.1.

3.1 Safety during transport and storage

During transport and storage, the following risks may occur:

WARNING

Read the following safety notes thoroughly prior to transport or storage. In the case of misuse, severe injuries may occur.

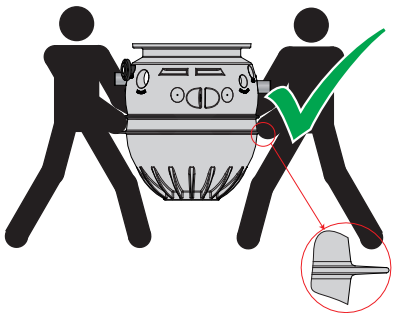
Make sure that transport and storage personnel have required qualification, chapter 2.2.

Severe crushes in the case of objects falling down!

- Wear personal protective equipment, chapter 2.3.
- Unpack prior to transport and lift from pallet.

Transport weight of plant container is too high for one person.

→ Carry with 2 persons, take hold of surrounding ring and use the sockets as further fixation, see fig.



WARNING

Transport with forklift or truck

Severe crushes, impacts and momentous accidents in the case of improper transport!

- Wear personal protective equipment, 🕮 chapter 2.3.
- Carry out transport only in delivery status/fixed on pallet.
- Secure cargo sufficiently.
- Check suitability and intactness of lifting accessories.

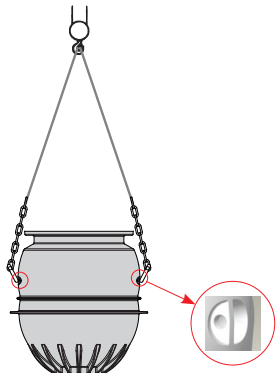
Transport with crane

Severe crushes and impacts in the case of objects falling down!

- Wear personal protective equipment, 🕮 chapter 2.3.
- Carry out transport only in delivery status/fixed on pallet.
- Check max. permissible bearing load of crane equipment and lifting accessories.
- Never stand beneath pending loads.
- Make sure that no foreign persons are able to enter the hazard area.
- Avoid reciprocating movements during transport.

Use 2-suspension with min. 5 m long chains or ropes and shackle NG 4.

→ Apply lifting accessories to provided rope stop ◯ , 🕮 see fig.



CAUTION Rope stops are designed to take housing load.

→ Do not transport housing with shaft component applied.

3.2 Storage

CAUTION An improper storage or missing conservation may lead to damage of plant. The following measures have to be taken:

In the case of short-time storage (up to 3 months):

- Store plant in a closed, dry, dust-free and frost-free room.
- Avoid temperatures outside the range of -20°C to +60°C.

In the case of long-time storage (more than 3 months):

- In the case of non-rustproof material: apply preserving agent to all outside and inside blank metal parts.
- Check conservation after 6 months and renew, if required.

4 Product description

This chapter contains information on design and performance of plant.

4.1 Scope of supply

Check delivery for intactness and, by means of the following table, for completeness.

CAUTION Do not fit, install or operate damaged parts.

Note down possible damagings to plant on delivery documents to make sure that complaints can be processed without delay.

Table 6: Supply units and plant components part I

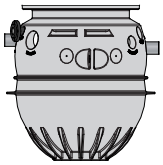
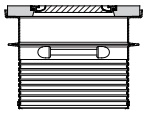
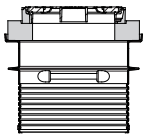
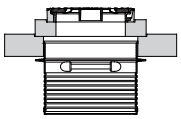
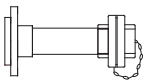
Unit	Single component	Illustration	Packing
Housing	■ Housing in accordance with nominal size, cpl. with installation components		Wooden pallet
Top system class A 15 or	■ Cover class A ■ Top section 700 mm high (optional) ■ Top section 1690 mm high (optional)		Wooden pallet
Top system class B 125 or	■ Cover class B ■ Adapter plate ■ Top section 700 mm high (optional) ■ Top section 1690 mm high (optional)		Wooden pallet
Top system class D 400	■ Cover class D ■ Adapter plate ■ Load distribution plate 200 mm high and Ø1500 mm (optional) ■ Top section 1600 mm high		Wooden pallet

Table 6: Supply units and plant components part II

Unit	Single component	Illustration	Packing
Sealing (class B 125)	■ Flat sealing Ø1010 mm, 2 thick	-	Carton
Counterflange cpl.	■ Counterflange DN 65 with Storz firehose coupling 75 B and dummy coupling R 2 $^1/_2$		Carton
Sealing DN 100 (optional)	■ Sealing DN 100		Carton
Documentation	■ Operating manual ■ Shipping documents ■ Type plate	–	PVC bag

For further accessories, as sampling device, refer to ACO K9 online under www.aco-haustechnik.de.

4.2 Product features

In this sub-chapter, essential plant features are described.

Short description of type -B and -D plant

In accordance with DIN EN 1825 and DIN 4040-100 the plants are hydraulically tested and have a General Approval and new Application Approval of the DIBt (German Institute for Building Technique), Berlin. The plants are furthermore regularly checked by the Bavarian State Trade Agency which checks grease separator production for keeping of the pertinent test standards.

An existing static type testing guarantees stability for at least 50 years.
Dependent upon the max. permissible inlet depth, the plants can be used in the case of ground water levels up to upper edge of cover. Here, it is not required to anchor the plant housing in concrete locally.

The following load classes are available:

- Load class A: the walk-in option - ideally suited for patios and green areas
- Load class B: accessible for passenger cars - ideally suited for doorways and parking areas
- Load class D: accessible for trucks - the safe solution for heavy goods vehicle traffic and storage areas as well as hard shoulders of roads

Disposal of housing contents and cleaning are carried out as follows:

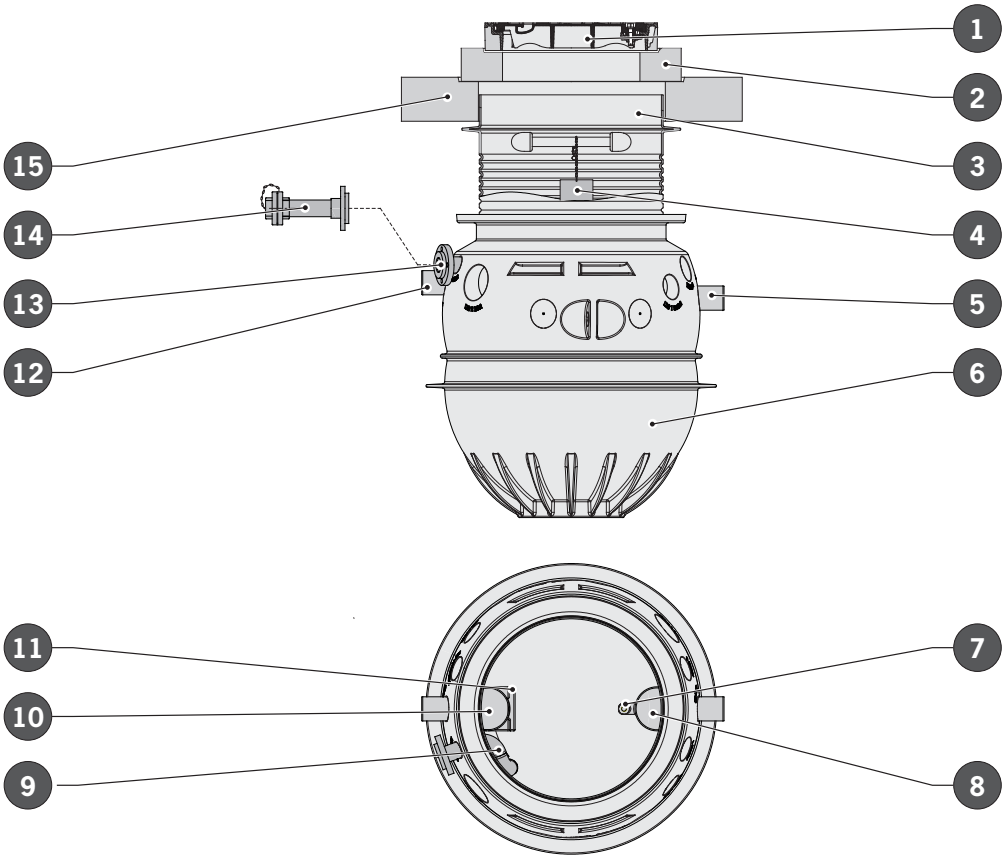
- Type -B – Disposal and cleaning via open cover
- Type -D – Disposal via direct suction, cleaning via open cover

Table 7: Plant features

General
■ LGA Test Certificate: No. 7310374-01a for NS 2 and 4 — no. 7311241-01 for NS 8.5 No. 7310372-01 for NS 5.5 and — no. 7311241-02 for NS 10 No. 7310372-02 for NS 7
■ Low weight, ready for connection, rapid assembly
■ Type -D: Counterflange DN 65 with Storz firehose coupling 75 B and dummy coupling R 2 $^1/_2$
Polyethylene housing and components
■ NS 2 and 4: Inlet and outlet socket DN 100 (external diameter Ø110 mm)
■ NS 5.5 - 10: Inlet and outlet socket DN 150 (external diameter Ø160 mm)
■ Type -D: Connecting flange DN 65 for connection of disposal line, connecting dimensions as per DIN 2501/PN 10
■ 2 x closed sleeve DN 100 (for pipe with external diameter Ø110 mm, sleeve sealing optional) for connection of a vent line
Top systems
■ Top system load class A 15 □ Load class as per DIN 124 □ Cover odourproof sealed, clear opening Ø600 mm, with frame of EN-GJL as per DIN 1561/concrete and cover from EN-GJL □ With top section 700 or 1690 mm high (design-dependent, not applicable with min. installation depth)
■ Top system load class B 125 □ Load class as per DIN 124 □ Cover odourproof sealed, clear opening Ø600 mm, with frame of EN-GJL as per DIN 1561/concrete and cover from EN-GJL or EN-GJS □ Adapter plate Ø1000 mm x 150 mm high, of concrete □ With top section 700 or 1690 mm high (design-dependent, not applicable with min. install. depth)
■ Top system load class D 400 □ Load class as per DIN 124 □ Cover odourproof sealed, clear opening Ø600 mm, with frame of EN-GJL as per DIN 1561/concrete and cover from EN-GJS □ Adapter plate Ø1000 mm x 150 mm high, of concrete □ With load distribution plate Ø1500 mm x 200 mm high, of concrete (can also be provided locally) □ With top section 1600 mm high

4.3 Components

The following illustration shows design and position of single plant components.
Descriptions of the following chapters can be easily assigned.



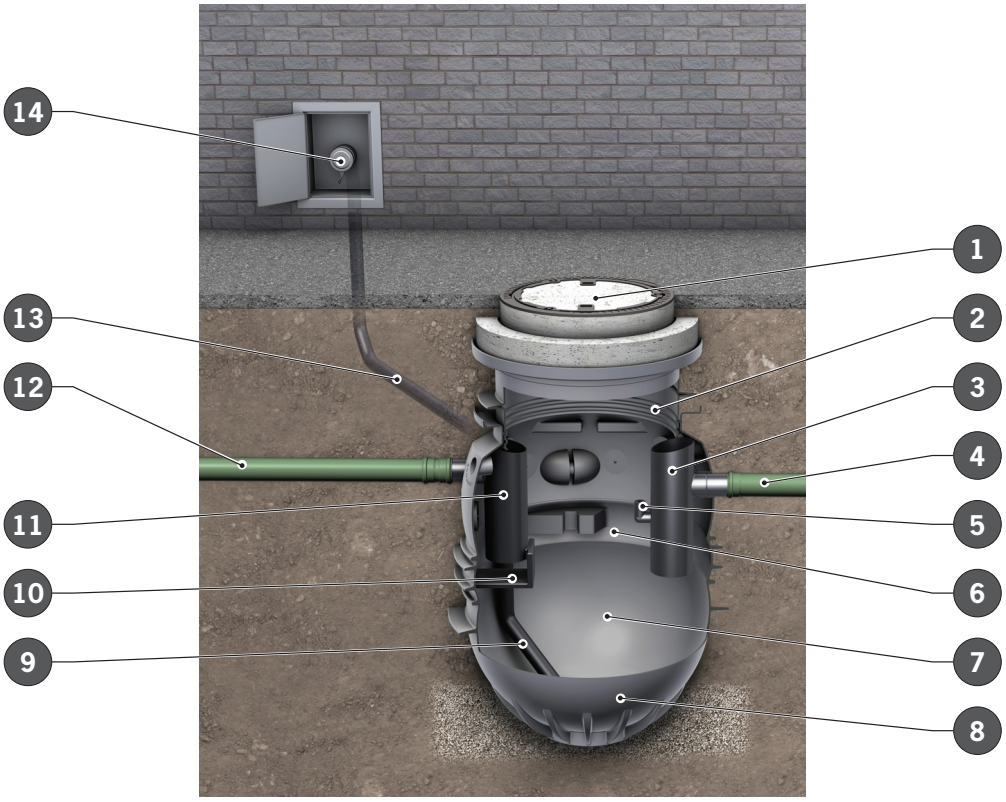
1 = Cover	6 = Housing	11 = Baffle plate
2 = Supporting ring *	7 = Connection sampling device	12 = Inlet socket
3 = Top section	8 = Outlet-immersion pipe	13 = Flange connection DN 65
4 = Type plate	9 = Internal disposal line	14 = Counterflange cpl. R $2^1/_2$
5 = Outlet socket	10 = Inlet-immersion pipe	15 = Load distribution plate **

* only with load classes B + D ** only with load class D

Fig. 1: Depiction of components

4.4 Functional principle

This sub-chapter describes function of plant.



1 = Cover	6 = Separator	11 = Inlet-immersion pipe
2 = Top system	7 = Sludge trap	12 = Inlet line
3 = Outlet-immersion pipe	8 = Housing	13 = Disposal line
4 = Outlet line	9 = Internal disposal line	
5 = Connection sampling device	10 = Baffle plate	

Fig. 2: Installation example

The grease separator plant consists of the housing (8) and a top system (2, with top section, supporting ring, load distribution plate and cover, depending on installation depth and load class).

The separator (6) and the sludge trap (7) are arranged on top of each other in the housing (8). The plant works purely physically as per the gravity principle (difference in density): heavy wastewater substances sink to the bottom, light substances, as e. g. animal oils and fats rise to the top in the housing (8).

Prior to commissioning, the housing (8) must be filled with water until it flows over into the outlet line (4).
The wastewater to be treated flows into the plant via the inlet line (12) in free gradient via the inlet immersion pipe (11) and is distributed in the housing (8) by the baffle plate (10). Thanks to the retention time of the wastewater in the housing (8), the heavy substances sink to the bottom into the sludge trap (7) and the light substances rise to the top into the separator (6). The treated wastewater flows into the outlet line (4) to the sewers via the outlet immersion pipe (3). Thanks to the immersion pipes (11) and (6) at inlet and outlet and the structural design of sludge trap (7) and separator (6), the freely separable and settleable substances remain in the housing (8).
When max. storage capacity of sludge and grease in the plant is reached, however at least once a month, contents must be disposed of completely.

This is done as follows:

Type -B

- Lift cover (1) off manhole
- Pump contents into the suction vehicle via the suction hose
- Clean housing (8) internally and components (3, 10 + 11) with water and deliver accumulating wastewater into the suction vehicle
- Replenish housing (8) with water until it flows over into the outlet line (4)
- Reinsert cover

Type -D

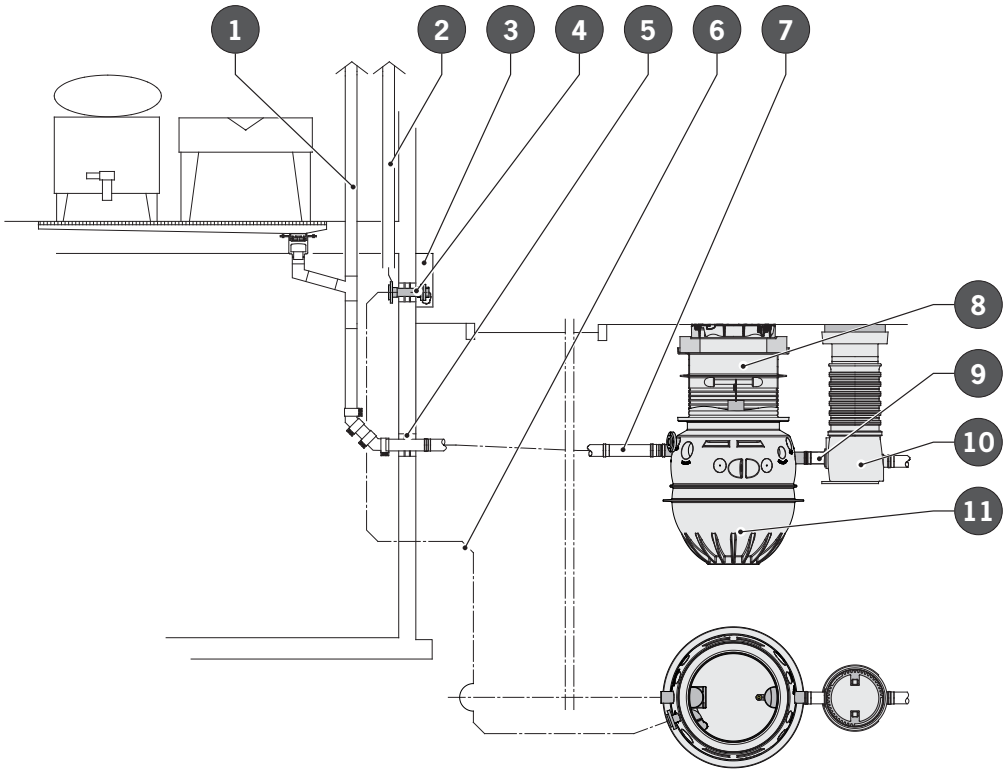
- Connect suction hose of suction vehicle to coupling (14)
- Pump contents into the suction vehicle via the disposal line (9) + (13)
- Lift cover (1) off manhole
- Clean housing (8) internally and components (3, 9, 10 + 11) with water and deliver accumulating wastewater into the suction vehicle
- Replenish housing (8) with water until it flows over into the outlet line (4)
- Reinsert cover

Plant is ready to operate again.

Optional:
Via the top system (2), a sampling device can be installed at the sampling device connection (5) and a wastewater sample can be taken. Optionally, a sampling shaft is available.
Sampling device and sampling shaft can be purchased from ACO, ACO K9 online under www.aco.com.

4.5 Installation example

The following illustration depicts a possible plant installation with top system class B 125.



Legend on fig. 8

1 = Vent line above roof (in situ)	5 = Wall bushing (optional)	9 = Outlet line (in situ)
2 = Gas transfer line above roof (in situ)	6 = Disposal line (in situ)	10 = Sampling shaft (optional)
3 = Connecting box (optional)	7 = Inlet line (in situ)	11 = Housing
4 = Counterflange with connecting coupling	8 = Top system	

Fig. 3: Suggested installation

4.6 Type plate

A type plate is fixed in the shaft system below the cover. The following data can be taken from the plate to have them ready for information and enquiries of any kind.

- Plant type
- Nominal size
- Sludge trap capacity
- Separator capacity
- Grease storage capacity
- Year of construction
- Art. no.
- Serial no.

4.7 Accessories

For information on suitable accessories, please refer to ACO K9 online under www.aco-haustechnik.de.

5 Technical data

Please take data as dimensions of inlets and outlets, storage capacities, contents and weights from the following table.

Table 8: Specifications

	Nom. size	ST	Inlet/ outlet	Storage capacities		Total contents	Weight
Type	NS	Type	DN	Sludge	Grease		
	[-]	[-]	[-]	[l]	[l]	[l]	[kg]
Lipumax P-B	2	200	100	245	270	720	63
	2	400	100	460	270	930	79
	4	400	100	460	270	930	79
	4	800	100	980	270	1465	89
	5.5	550	150	570	230	1465	93
	5.5	1100	150	1065	230	1960	111
	7	730	150	730	285	1675	108
	8.5	850	150	860	360	1900	118
	10	1000	150	1005	415	2170	128
Lipumax P-D	2	200	100	245	270	720	65
	2	400	100	460	270	930	81
	4	400	100	460	270	930	81
	4	800	100	980	270	1465	92
	5.5	550	150	570	230	1465	95
	5.5	1100	150	1065	230	1960	113
	7	730	150	730	285	1675	111
	8.5	850	150	860	360	1900	120
	10	1000	150	1005	415	2170	130

Please take all important dimensions from below illustration and table.

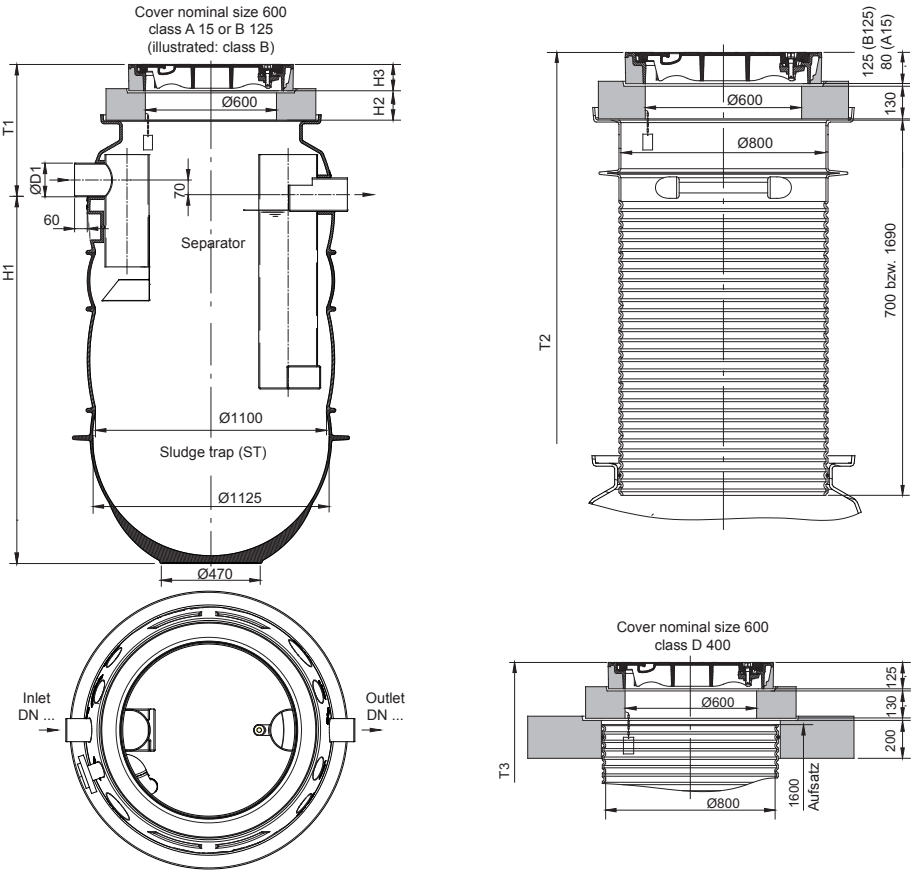


Fig. 4: Plant dimensions

Table 9: Dimensions

Nom. size	ST	DN	Dimensions										
			D1	H1	H3		H4		T1		T2		T3
					A 15	B 125	A 15	B 125	A 15	B 125	A 15	B 125	D 400
	[l]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
NS 2	200	100	110	1015	0	130	80	125	420	585	720-1985	885-1985	865-1985
NS 2	400	100	110	1235	0	130	80	125	420	585	720-1985	885-1985	865-1985
NS 4	400	100	110	1235	0	130	80	125	420	585	720-1985	885-1985	865-1765
NS 4	800	100	110	1770	0	130	80	125	420	585	720-1985	885-1985	865-1765
NS 5.5	550	150	160	1745	0	130	80	125	445	610	745-1855	910-1855	890-1855
NS 5.5	1000	150	160	2225	0	130	80	125	445	610	745-1855	910-1855	890-1855
NS 7	700	150	160	1960	0	130	80	125	445	610	745-1640	910-1640	890-1640
NS 8.5	850	150	160	2180	0	130	80	125	445	610	745-1640	910-1640	890-1640
NS 10	1000	150	160	2450	0	130	80	125	445	610	745-1640	910-1640	890-1640

6 Installation

Correct installation of plant is described in this chapter.

Pipeline system must be designed by the planner.

6.1 Safety during installation

During installation works, the following hazards may occur:

WARNING

Please read the following safety indications thoroughly prior to installation. In the case of non-observance, severe injuries may occur.

Make sure the staff members have required qualification, chapter 2.2.

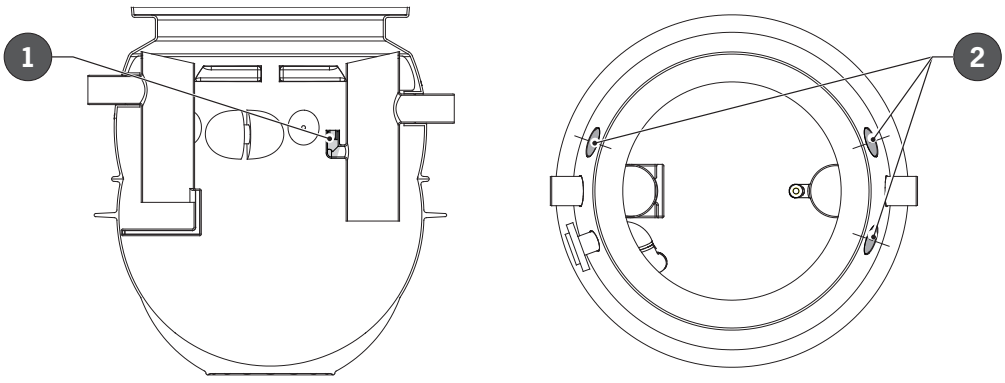
Severe crushes if housing or top system components (top section, adapter plate, cover or load distribution plate) fall down!

- Wear personal protective equipment, chapter 2.3.

6.2 Preliminary works at housing

The following illustration depicts works at housing which is described in more details in the following chapters.

These works have to be carried out prior to ground installation:



1 = Prepare sampling device connection (optional), chapter 6.2.1	2 = Prepare vent line connection (optional), chapter 6.2.2

Fig. 5: Preliminary works

6.2.1 Prepare sampling device connection (optional)

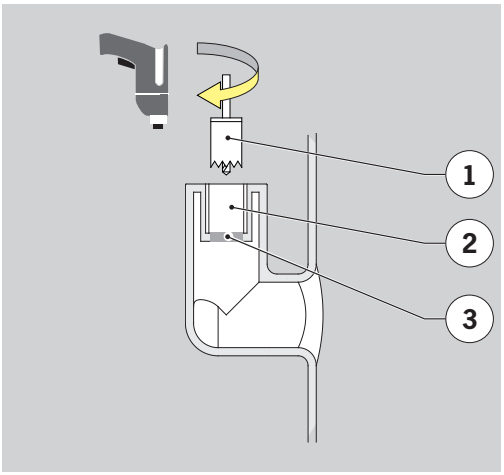
A threaded sleeve R$^3/_4$ (2) at the outlet immersion pipe in the housing can be used for connection of a sampling device (optional). Preparation:

The following assembling aids are required:

- Drilling machine
- Hole saw Ø22 mm

Working step:

→ Drill open closed socket base (3) by means of hole saw (1, max. Ø22 mm).



6.2.2 Prepare vent line connection (optional)

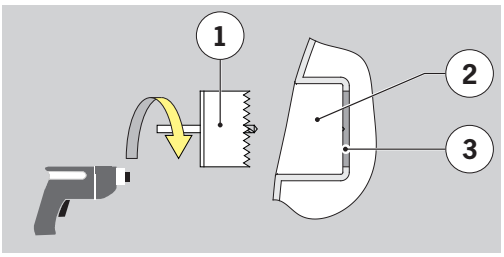
For the connection of a vent line (in situ pipeline DN 100 with spigot Ø110 mm), a connecting socket (item 2, 🕮 fig. 5) can be used.
The socket (2) is closed and must be prepared for the connection as follows:

Following assembling aids are required:

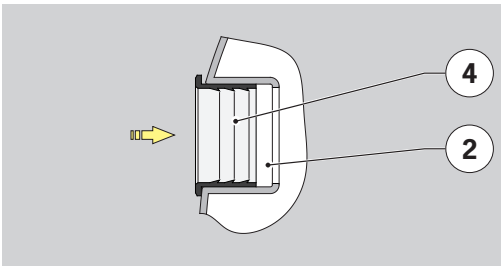
- Drilling machine
- Hole saw Ø100 mm
- Acid-free fat

Working steps:

→ Drill open closed socket base (3) with hole saw (1) max. Ø100 mm.

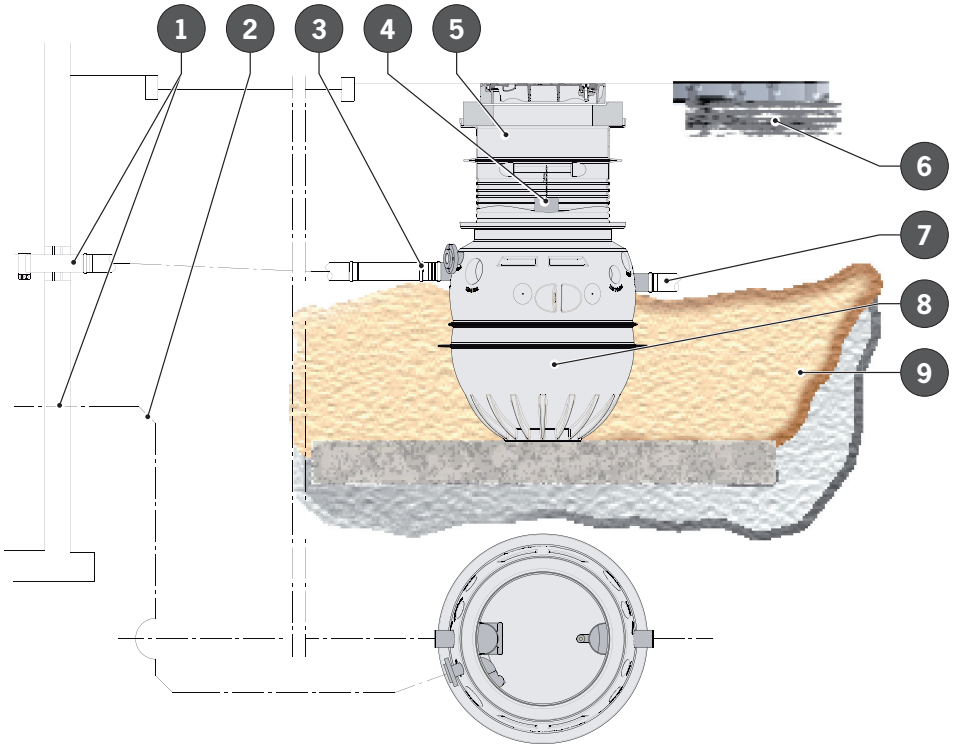


→ Insert sealing (4, optional) in socket (2) (grease sealing and socket with acid-free fat before).



6.3 Ground installation

The following illustration depicts required excavations and installation works which are described in more details in the following chapters.



1 = Prepare wall bushings, chapter 6.3.7	4 = Mount type plate, chapter 6.3.9	7 = Connect outlet line, chapter 6.3.4
2 = Connect disposal line, chapter 6.3.5	5 = Mount top system, chapter 6.3.6	8 = Bring in housing and align, chapter 6.3.2
3 = Connect inlet line, chapter 6.3.3	6 = Fill excavation, chapter 6.3.8	9 = Prepare excavation and secure, chapter 6.3.1

Fig. 6: Excavations and installation works

6.3.1 Prepare excavation and secure

If suitable location is found, 🕮 chapter 4.2, excavations for plant must be prepared.

WARNING

In order to avoid property damages, malfunctions at plant and risks for human beings, max. installation depth may not be exceeded!

- The installation depth of the plant bottom may not exceed 3.60 m! The depth is composed of measurement T (T1, T2 or T3) plus H1, 🕮 fig. 4 and table 9.

CAUTION To be observed with excavation:

- Prepare excavation as per DIN 18300, slope/working chamber/fitment according to DIN 4124
- In non-binding soil, slope must be prepared below 45° and in binding soil below 60° gradient
- Steeper slopes must be secured properly and expertly with fitment and other measures
- Foundation must be carried out on non-binding or low-binding soil (group G1 to G2 as per ATV-DVWK-A127)
- Without traffic load, a well compacted, non-binding soil (e. g. gravel sand 0-32) is sufficient
- Underfilling must have a thickness of approx. 30 cm and be compacted to Proctor density Dpr 97%
- A uniformly even contact surface for the housing bottom must be permanently guaranteed

To be observed during construction phase:

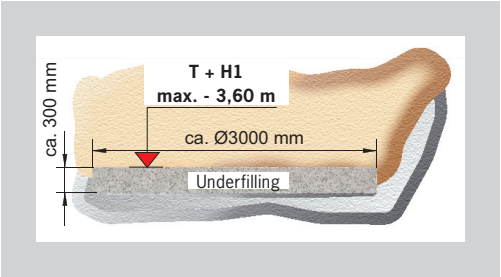
- During construction phase, a foundation earth electrode or earth strip should be planned in as potential equalisation

The following machines and appliances are required:

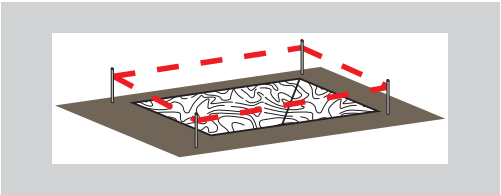
- Dredger
- Truck
- Vibrating plate
- Shovel

Working steps:

→ Prepare excavation with relevant machines.



→ Secure excavation by means of suitable measures.



6.3.2 Bring in housing and align

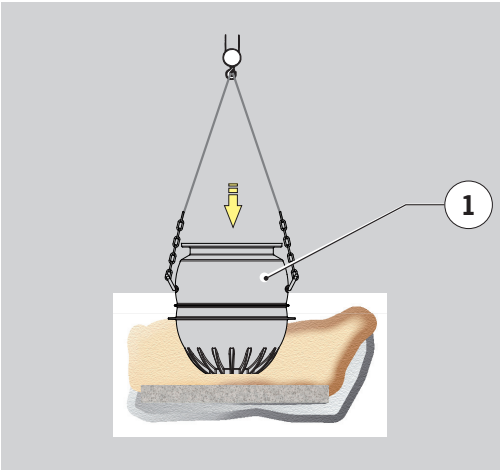
CAUTION The installation direction must correspond to the flow direction (inlet and outlet are marked at the works) and the longitudinal axis above housing inlet and outlet must run in the centre line of the connecting pipes.
A relevant marking at excavation pit sole and at housing alleviate the works.

Following assembling aids are required:

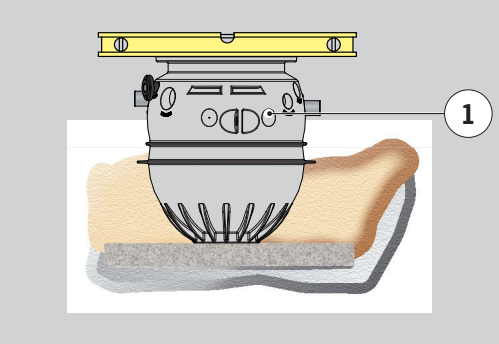
- Dredger
- 2-suspension, min. 5 m long, shackle NG 5 as per DIN 82101
- Water level

Working steps:

→ By observing the safety indications, bring in the housing (1)
NS 2-200 = 65 kg
NS 2-400 and 4-400 = 80 kg
NS 4-800 = 90 kg
NS 5,5-550 = 95 kg
NS 5,5-1100 = 140 kg
NS 7-730 = 140 kg
NS 8,5-850 = 150 kg
NS 10-1000 = 160 kg
into excavation pit and let down.



→ Align housing (1) (housing axis vertical).



6.3.3 Connect in situ inlet line

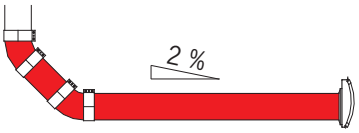
A pipe socket (5, marked „Inlet") protrudes from housing (6) at height H1, 🕮 fig. 4 and table 9, in nominal width DN 100 or 150 (external diameters: 110 mm or 160 mm), depending on plant type.

CAUTION To be observed during pipe installation:

- Line may not be downsized in flow direction

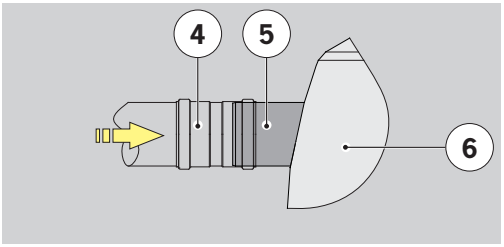
- In order to avoid grease deposits, inlet lines of grease separator plants must have an incline of at least 2 % (1 : 50). If this is not possible for structural or commercial reasons, suitable measures have to be taken to avoid grease deposits.

- The transition from downpipes to horizontal lines has to be carried out with two 45° pipe bends and an intermediate section of at least 250 mm length or with an equivalent pipe bend with big radius
- Then, a stabilising path must be allowed for in flow direction, the length of which corresponds to at least 10 x DN of separator inlet (example: DN 100 = 1 m, DN 150 = 1.50 m)



Working steps:

→ Connect local inlet line (4) to pipe socket (5) by means of in situ material (pipe connector, sliding sleeve, ...).



6.3.4 Connect in situ outlet line

A pipe socket (2) opposite to the inlet socket (marked „Outlet") protrudes from housing (1) at height H1 - 70 mm, 📖 chapter 4.3, in nominal width DN 100 or 150 (external diameters: 110 mm or 160 mm), depending on plant type.

CAUTION To be observed during pipe installation:

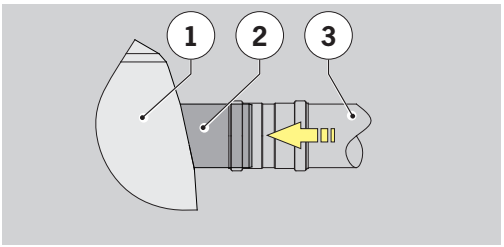
- Line may not be downsized in flow direction.

- Separator plants must be operated backflow-free and in free gradient.
- Grease separator plants the static water level of which is below the backflow level (if not defined otherwise, height of kerbstone upper edge, also refer to EN 752-I), must be drained via a downstream lifting plant or twin pumping station. The pressure line of the waste-water lifting plant must be taken above the backflow level with the backflow loop sole.

- Downstream drainage installations (grease separator plants) with which wastewater inflow may not be interrupted, a twin lifting plant or twin pumping station (application DIN EN 12050-1 or DIN EN 12050-2) must be installed.
- Official specifications may limit wastewater temperature at connecting point to public sewers.

Working steps:

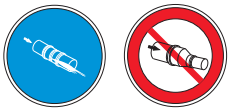
→ Connect local outlet line (3) to pipe socket (2) by means of in situ material (pipe connector, pipe socket, ...) and lay with incline to sewers.



6.3.5 Connect disposal line

A flange socket DN 65 (1, right-hand besides the inlet socket, marked „Extraction") protrudes from the housing (2).
The flange connecting dimensions correspond to DIN 2501/PN 10.

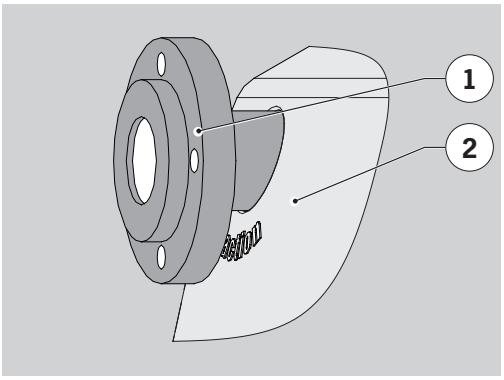
CAUTION To be observed during pipe installation:



- The disposal line should be laid from the grease separator to the exchange point to the disposal vehicle continuously rising, with constant diameter and should be designed as suction line (at least 1.5 x pump pressure).
- Max. length of pressure line must be limited in accordance with performance curve of suction pump/suction vehicle.
- In order to avoid sound transmissions and for vibration absorption, compensators should be used.
- If possible, changes of line direction by means of 90° elbows should be carried out with a big radius.
- Use high-tensile connections of single pipes and fittings.

Working steps:

→ Connect local disposal line to the flange (1) by means of in situ material or cut off flange and make connection by means of welded sleeve or mirror-imaged welding.



6.3.6 Mount top systems

Cut top section of load class A and B to length and fit

Depending on required installation depth (measurement T), the top section (2) height is 700 mm (25 kg) or 1690 mm (50 kg). The insertion depth in the housing is approx. 120 mm and the measurement H1 is 30 mm with class A and 210 mm with class B. Height adjustment and top section installation is described hereunder.

The following assembling aids are required:

- Saw
- Acid-free fat
- Water-level

Working steps:

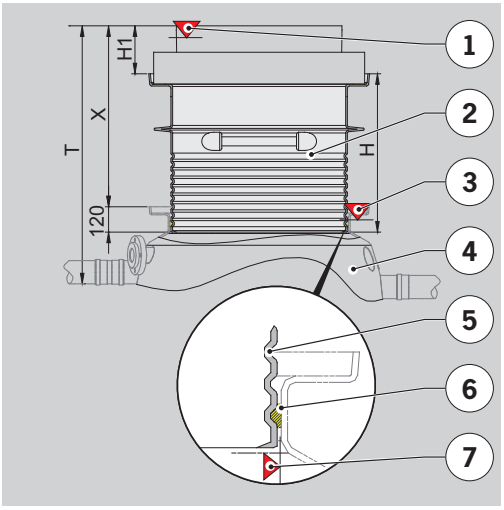
→ Determine measurement X, upper edge of housing (3) to upper edge of ground (1).

→ Assign measurement H (X - H1 + 120 mm) to top section supplied (2) and cut off at relevant notch (5, distance between notches is 40 mm).

→ Remove sealing (6) from cut-off piece and re-apply in first notch above the separating cut.

→ Grease sealing (6) and "collar" surface (7)" at housing (4) with acid-free fat.

→ Slide top section (2) into the housing (4, up to measurement 120 mm) and align.



Install cover with load classes A and B or cover and adapter plate with load class B

The top components for class A and B, cover (5)/adapter plate (6, with class B) and the flat sealing (3) are loosely supplied. Installation has to be carried out as follows:

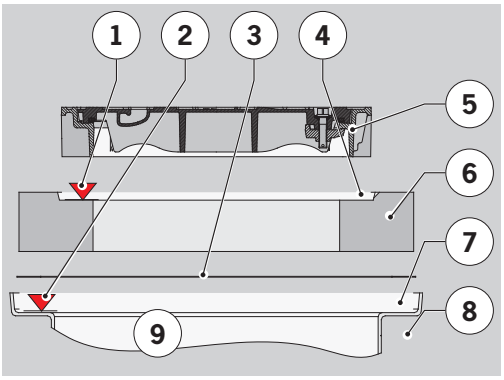
CAUTION Before the adapter plate (6) and the cover (5) are applied, the excavation must be filled up to this height, 🕮 chapter 6.3 and the area (8) must be compacted.

The following assembling aids are required:

- Dredger
- Shaft ring suspension with claws
- Water level

Working steps:

→ Clean surface (2) at housing (9) or at top section (9).



Class A

→ Apply flat sealing (3) to surface (2).

→ Insert cover (5, 145 kg) in support (7).

Class B

→ Apply flat sealing (3) to surface (2).

→ Insert adapter plate (6, 170 kg) in support (7).

→ Clean support area (1) at adapter plate (6).

→ Apply mortar bed, 🕮 observe mortar supplier's information, to surface (1) and insert cover (5, 110 kg) in support/anti-shifting device (4) of adapter plate (6) and align.

CAUTION Load may be applied to top system only after excavation was completely filled and used materials have sufficiently set.

For adaptation to upper edge of ground (e. g. asphalt coating), usual supporting rings may be fitted between the cover and the adapter plate (refers to class B 125).

Cut top section of load class D to length and fit with load distribution plate

Depending on required installation depth (measurement T), the top section (4, 1600 mm high) must be shortened. The insertion depth in the housing is approx. 120 mm and the measurement H1 is 340 mm. Height adjustment and top section installation (50 kg) with load distribution plate (700 kg) is described hereunder.

CAUTION Before the load distribution plate (5, by observing the safety notes) can be taken above the top section (4), the excavation must be filled up to this height, chapter 6.3 and the area (2) must be compacted.

The following assembling aids are required:

- Dredger
- 3-suspension, min. 2 - 3 m long, shackle NG 1 as per DIN 82101
- Water level

Working steps:

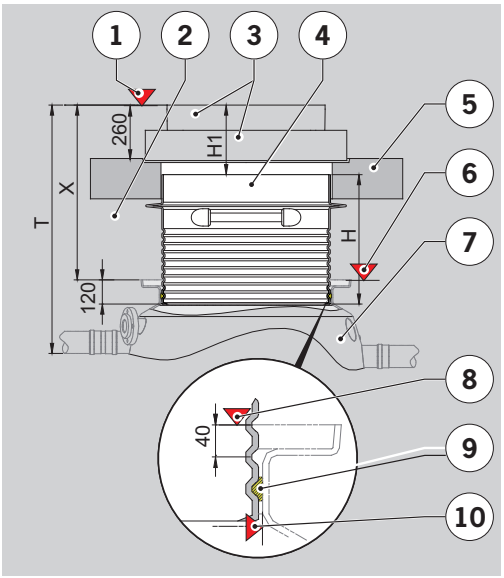
→ Determine measurement X, upper edge of housing (6) to upper edge of ground (1).

→ Assign measurement H (X - H1 + 120 mm) to top section supplied (4) and cut off at relevant notch (8, distance between notches is 40 mm).

→ Remove sealing (9) from cut-off piece and re-apply in first notch above the separating cut.

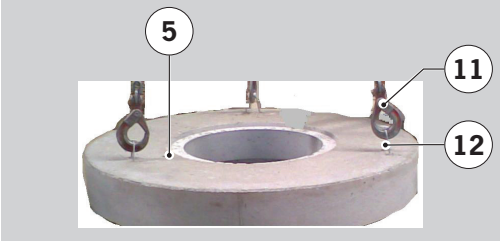
→ Grease sealing (9) and "collar" surface (10)" at housing (7) with acid-free fat.

→ Slide top section (4) into the housing, up to measurement 120 mm) and align.



Working steps:

→ Suspend load distribution plate (5) to the 3 intended bights (12) by means of lifting gear (11), place its opening on top of top section (4) congruently and fix to height measurement 260 mm.



Install cover and adapter plate with load class D

The top components for class D, cover (4, 110 kg) and adapter plate (6, 170 kg) are loosely supplied. Installation must be carried out as follows:

The following assembling aids are required:

- Dredger
- Shaft ring suspension with claws
- Water level

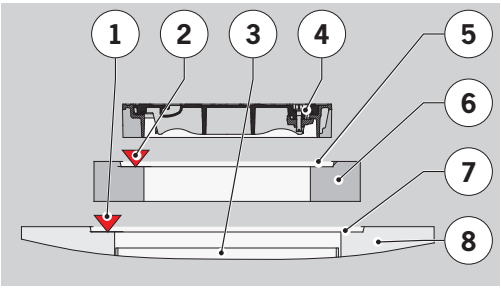
Working steps:

→ Clean surface (1) at the load distribution plate (8) all around.

→ Apply mortar bed, observe mortar supplier's information, to surface (1) and insert adapter plate (6) in anti-shifting device (7) of load distribution plate (8).

→ Clean surface (2) at the adapter plate (6) all around.

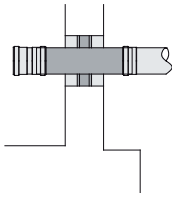
→ Apply mortar bed, observe mortar supplier's information, to surface (2) and insert cover (4) in anti-shifting device (5) of adapter plate (6).



CAUTION Load may be applied to top system only after excavation was completely filled and used materials have sufficiently set.

6.3.7 Make pipe bushing in external building wall

Install pipe bushings in the external building wall, 🕮 supplier's manual.



6.3.8 Fill excavation

CAUTION The materials and installation processes used may not lead to damaging deformations, damages or unfavourable loading conditions for the plant!

The following assembling aids are required:

- Dredger
- Truck
- Light compacting plant (vibrating plate)

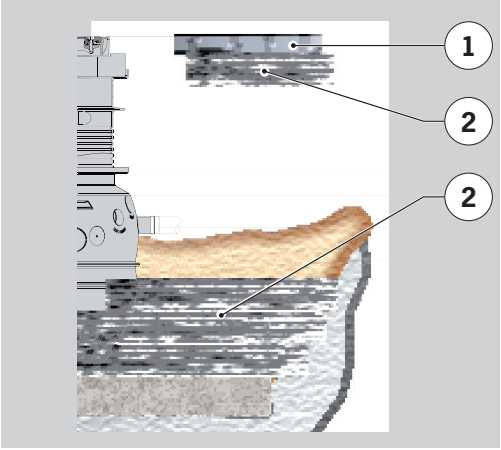
- The plant must be embedded all around (min. 1.0 m) with non-binding soil (gravel with low sand portion).
- The ballast in layers (max. 30 cm high) must be compacted to Proctor density of 97% by means of a light compacting plant.
- Frame and cover may not protrude the coating - which may in turn be a bit higher and be drawn to the frame edge

Working steps:

→ Fill excavation (2).

CAUTION When final coating is applied, the cover may no more be slid.

→ As finish (1) of filling, apply desired coating (e. g. asphalt coating).



6.3.9 Mount type plate

Fit cover and adapter plate with load class D

The plant type plate is supplied loosely in a plastic bag (together with the operating manual and the shipping documents). It must be mounted below the cover in situ.

Fixation in the case of design without top system

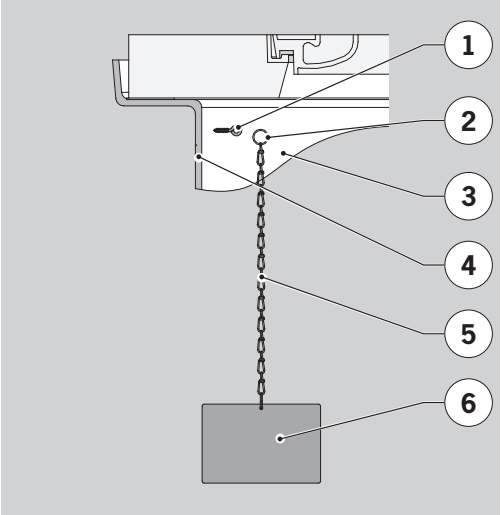
The following assembling aids are required:

- Pliers

Working steps:

→ Turn in local eyelet bolt (1, with cut thread) in the collar (4) of the separator housing (3).

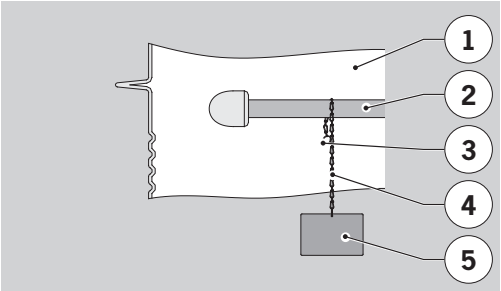
→ Fix key ring (2), supplied as unit with knotted-link chain (5) and type plate (6), to eyelet bolt (1).



Fixation in the case of design with top system

Working steps:

→ Wrap knotted-link chain (4), supplied as unit with key ring (3) and type plate (5), around pipe (2) in the top section (1) and fix to the knotted-link chain (4) by means of key ring (3) .

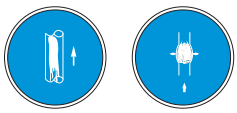


6.4 Assemble supplied counterflange with connecting coupling

The cpl. counterflange unit (2, 4 + 5) is loosely supplied and must be mounted at a place which is well accessible for the suction vehicle.

A connecting box (3) for the assembly of the Storz firehose coupling (5) is optionally available, www.aco-haustechnik.de.

CAUTION To be observed during installation:

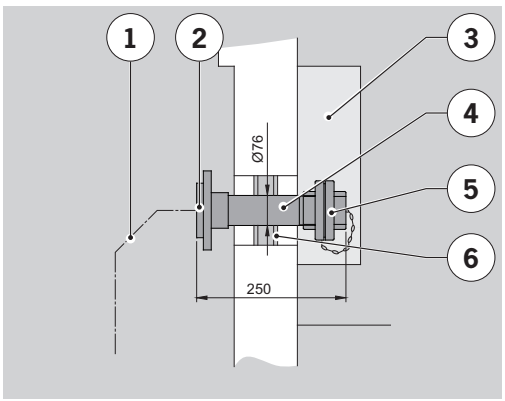


- Disposal line must be laid from grease separator to exchange point of disposal vehicale permanently rising, with even diameter (min 1.5 x pump pressure).
- Max. length of disposal line must be limited in accordance with performance curve of suction pump/suction vehicle.
- In order to avoid sound transmissions and for vibration absorption, compensators should be used.
- If possible, changes of line directions by 90° elbows should be carried out with a big radius.
- High-tensile connections of pipes and fittings have to be used.

The following assembling aids are required:

- Gaspipe pliers

Working steps:



→ Turn Storz firehose coupling (5) off the threaded pipe (4).

→ Insert threaded pipe (4) with counterflange (2) in local pipe bushing (6).

→ Seal Storz firehose coupling (5) to threaded pipe (4) and crank (10 Nm).

→ Connect in situ disposal line (1) inside the building to the flange DN 65 (2, flange connecting dimensions as per DIN 2501/PN 10) with in situ material or cut off flange and make connection by welded sleeve or mirror-imaged welding.

7 Operation

This chapter contains information on correct initial commissioning and current operation of plant.

7.1 Safety with initial commissioning and operation

During initial commissioning and during operation, the followings hazards may occur:

BEWARE!

The following safety indications must be read thoroughly prior to initial commissioning and operation. In the case of non-observance, medium and light injuries may occur. Make sure the personnel is sufficiently qualified (chapter 2.2).

Contact with greasy wastewater.

Injury of skin and eyes, danger of infection!

- Wear personal protective equipment, chapter 2.3.
- In the case of skin contact: immediately wash affected skin areas thoroughly with soap and disinfect.
- In the case of eye contact: rinse eyes. If eyes continue watering, consult a doctor.

7.2 Initial commissioning

This chapter holds information on correct initial commissioning:

7.2.1 Realisation and presence

Persons required during initial commissioning:

- Plumber
- Waste disposal contractor
- Owner or user

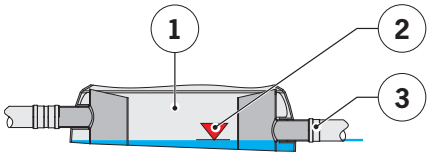
CAUTION During initial commissioning, the following requirements must be complied with:

- All installation works, chapter 6, are finished
- Pipelines are flushed
- The housing was thoroughly cleaned (from possible construction waste)

If all requirements are complied with, the housing must be filled with water.

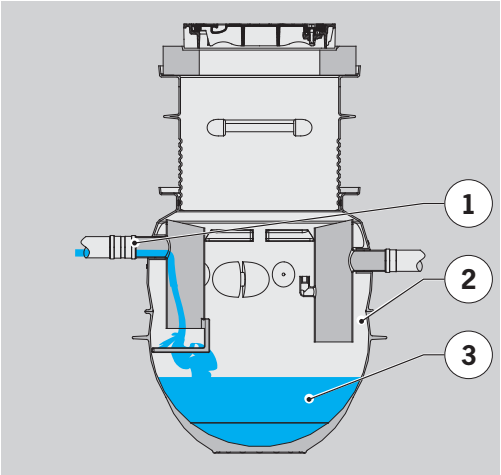
To fill the plant, rainwater or process water can be used if it corresponds to local inlet conditions.
If wastewater from the disposal vehicle is used for replenishment, compliance with municipal wastewater limit values must be documented.
The waste disposal contractor must hand out relevant documents to the owner or the user.

CAUTION The housing (1) must be filled until water flows over into outlet line (3) or invert level of outlet socket (2) is reached.



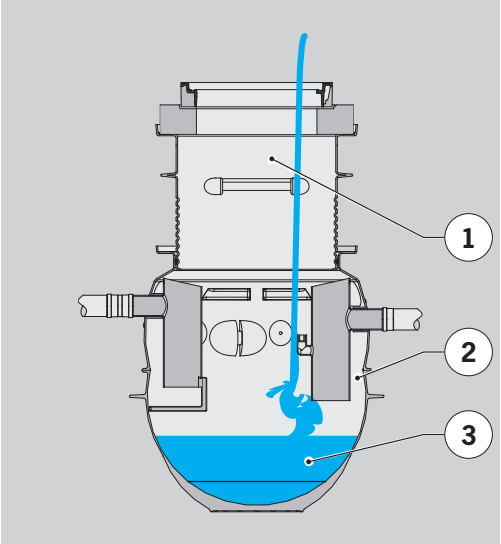
Working steps:

→ Fill housing (2) via the inlet line (1) or the connected drainage objects with fresh water (3) up to the invert level of outlet (level control through the open cover or a downstream revision opening, e. g. sampling shaft).



or

→ fill housing (2) with fresh water (3) through the open top system (1) up to the invert level of outlet.



The plant is now ready for operation and can be handed over to the user.

7.2.2 Handover of plant to owner or user

Handover:

1. Explain operating mode of plant to owner or user
2. Hand over the plant fully functioning to owner or user
3. Hand out handover protocol with essential data of initial commissioning
4. Hand out operating manual

7.2.3 ACO maintenance contract

In order to maintain value and performance of plant and to comply with the requirements for the manufacturer's warranty, we recommend to have works carried out directly by the manufacturer, ACO.
This guarantees permanent operating reliability and profit from revisions and updates carried out in line with our product development.
To enquire for a **maintenance contract,** copy the following coupon, fill in completely and fax it to

Telefax + 49 (0) 3 69 65 / 81 9 -3 67.

In case of questions, our ACO service is at your disposal, chapter 1.1.

Request: **Offer for a maintenance contract of grease separator plant**
Please let me have a non-binding offer for regular maintenance of plant.

Sender

Type:

Installed on:

Post code town

7.3 Operation

This chapter contains information on currect operation of plant.

7.3.1 Current operation

CAUTION The plant may only be operated in accordance with its intended use, chapter 2.1.

No action from the user isrequired to keep the plant working correctly. Required works during operation are limited to:

- Weekly checks and works, chapter 7.3.2
- Emptying of the plant, chapter 7.4
- Yearly maintenance, chapter 8.2
- Check of plant, chapter 8.3

7.3.2 Weekly checks and works

After opening the plant cover, the following has to be checked:

- condition of housing and top system (insofar as visible from above)
- condition of components (insofar as visible from above)
- condition of sealing of screwed cover

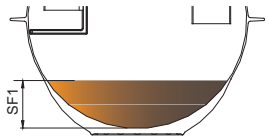
and following works have to be carried out:

→ remove coarse floating matters on water surface and dispose of

and the following must be determined:

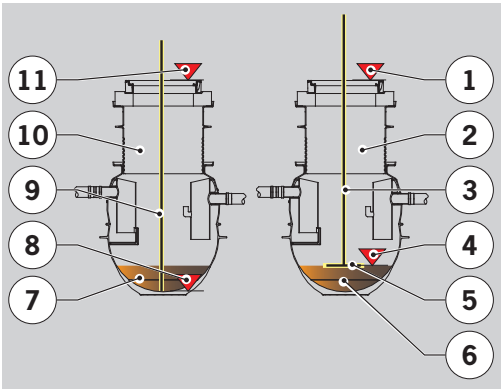
- layer thickness of separated sludge

Table 10: Half filling of sludge trap

	Nom. size	ST	ST1	Illustration
Type	NS	Type	-	
	[-]	[-]	[mm]	
Lipumax P-B and -D	2	200	320	
	2	400	450	
	4	400	450	
	4	800	720	
	5.5	550	500	
	5.5	1100	720	
	7	730	580	
	8.5	850	620	
	10	1000	690	

Working steps:

- Lead rod (9) in the plant centre (10) downwards through the sludge layer (7) up to level (8).
- Carry over level (11) to rod (9), remove rod from plant and fix measurement up to rod end (measurement = H1).
- Fix plate (5) at rod (3) and (with the plate first) implememt in plant until the plate (5) lies on sludge layer (6).
- Carry over level (1) to rod (3), remove rod from plant and fix measurement up to plate (measurement = H2).
- Deduct measurement H2 from measurement H1 = existing sludge layer in plant.



- Determine sludge layer of separated grease

CAUTION Grease layer thickness can only be determined by means of a grease layer gauge. Such gauge can be purchased from ACO, 🕮 ACO service.

If layer thickness exceeds half of max. grease storage capacity, 🕮 indications on original type plate, complete emptying of plant must be arranged for, 🕮 chapter 7.4

7.4 Emptying

This chapter contains information on correct emptying of plant contents into suction vehicle.

CAUTION Emptying must be carried out immediately, if:

- the max. grease storage capacity is reached,
- the last emptying dates back more than 14 days, however, once a month at the latest.

The accumulated emptying volume is composed of:
Total contents, original type plate x 1.15.
Arrange for a sufficiently dimensioned disposal vehicle.

Emptying date and evacuation by a suction vehicle (disposal vehicle) must be agreed upon with an approved waste disposal contractor.

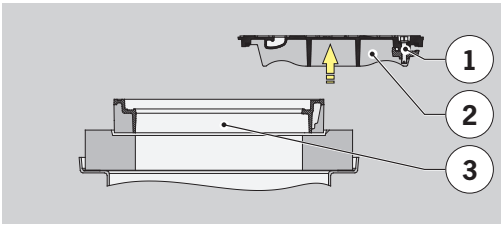
CAUTION The state law regulations have to be observed.

Emptying should be carried out during a production stop (no inflow from the kitchen).

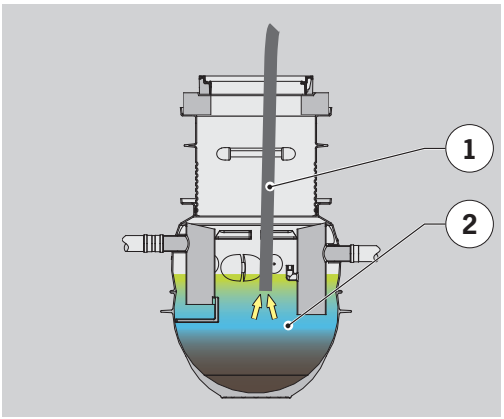
7.4.1 Emptying with type -B

Working steps:

→ Undo cover locking (1) and lift cover (2) out of top system (3).

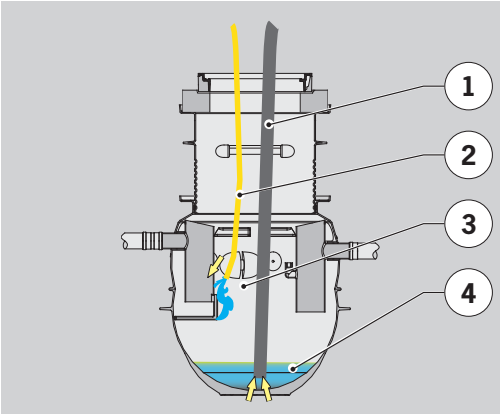


→ Suck off complete contents (2) of plant into the suction vehicle by means of the suction hose (1).



Working steps:

→ Hose down housing interior (3, incl. all components) thoroughly with water (2) and suck off accumulating wastewater (4) into the suction vehicle via the suction hose (1).



To fill the plant, rainwater, process water or treated wastewater from the grease separator can be used if it corresponds to local inlet conditions.

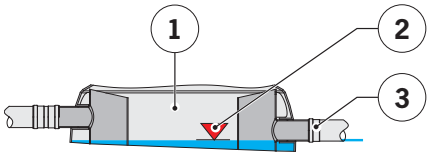
If wastewater from the disposal vehicle is used for replenishment, compliance with municipal wastewater limit values must be documented.

The waste disposal contractor must hand out relevant documents to the owner or the user.

Working step:

→ Fill plant with fresh water,
chapter 7.2.1.

CAUTION The housing (1) must be filled until water flows over into outlet line (3) or invert level of outlet socket (2) is reached.

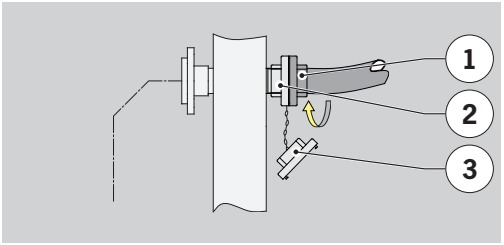


The plant is ready for operation again. Kitchen operation with wastewater entering the plant can continue.

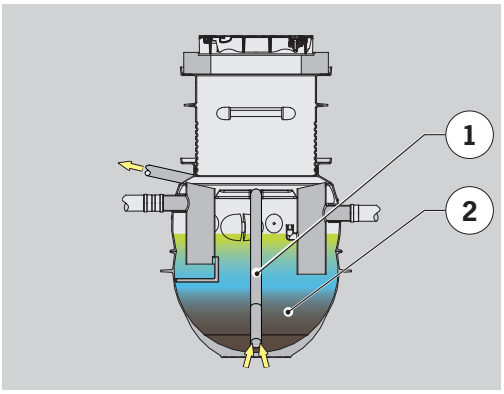
7.4.2 Emptying with type -D

Working steps:

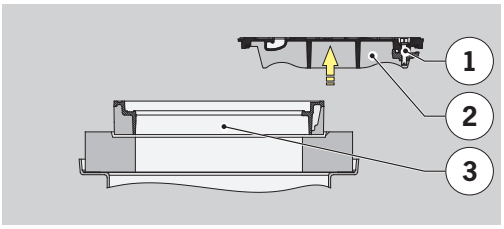
→ Turn dummy coupling (3) off the fixed coupling (2) of the counterflange and connect suction hose coupling (1).



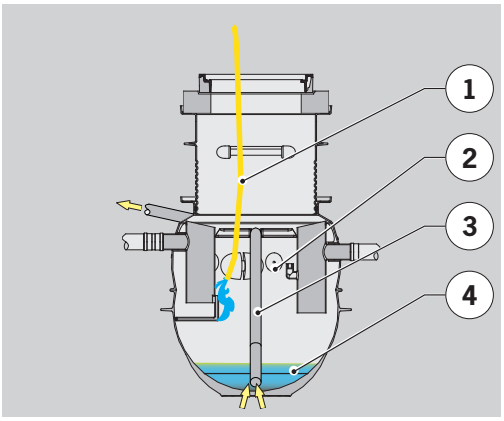
→ Suck off complete contents (2) of plant into suction vehicle through the disposal line (1).



→ Undo cover locking (1) and lift cover (2) off the top system (3).



→ Hose down housing interior (2, incl. all components) thoroughly with water (1) and suck off accumulating wastewater (4) into the suction vehicle via the disposal line (3).

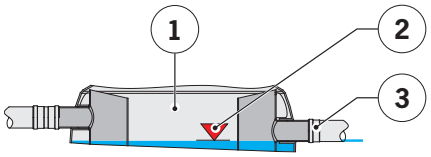


To fill the plant, 🕮 chapter 7.3.2, rainwater, process water or treated wastewater from the grease separator can be used if it corresponds to local inlet conditions.
If wastewater from the disposal vehicle is used for replenishment, compliance with municipal wastewater limit values must be documented.
The waste disposal contractor must hand out relevant documents to the owner or the user.

Working step:

→ Fill plant with fresh water,
🕮 chapter 7.2.1.

CAUTION The housing (1) must be filled until water flows over into outlet line (3) or invert level of outlet socket (2) is reached.



The plant is ready for operation again. Kitchen operation with wastewater entering the plant can continue.

8 Maintenance

For a long-time safe and trouble-free operation, regular maintenance works and check of plant are indispensable.
The required measures are described in this chapter.

8.1 Safety during maintenance works and check

During maintenance works at plant, the following hazards may occur:

BEWARE!

The following safety indications must be read thoroughly prior to maintenance works and checks. In the case of non-observance, medium and light injuries may occur.
Make sure the personnel is sufficiently qualified (chapter 2.2).

Contact with greasy wastewater.

Injury of skin and eyes, danger of infection!

- Wear personal protective equipment, chapter 2.3.
- In the case of skin contact: immediately wash affected skin areas thoroughly with soap and disinfect.
- In the case of eye contact: rinse eyes. If eyes continue watering, consult a doctor.

8.2 Maintenance works

CAUTION The plant must be maintained yearly in emptied and cleaned condition in accordance with the manufacturer's instructions.

Maintenance contracts should be taken out with ACO, chapter 7.2.3.
Maintenance plans upon request, ACO Service.

If during maintenance works faults are detected, these have to be cleared without delay. Maintenance works and possible corrective actions must be entered into the operating log.

8.3 Check

CAUTION The plant must be maintained in emptied and cleaned condition at least every 5 years (general inspection).

This check comprises the following items:

- Was plant dimensioned correctly?
- How is plant condition (housing, spare parts, top systems etc.)?
- Is connection piping all right?
- Is plant tight (check 🕮 DIN 4040-100, section 13)?
- Is the operating log kept and are all entries complete?
- Are proofs available for proper disposal of contents removed from plant?
- Are all required documents (such as approvals, drainage plans, operating manuals) available and complete?

If faults are detected during check, these must be remedied immediately. The check works and possible corrective actions must be entered into the operating log.

8.4 Operating log

CAUTION An operating log must be kept.

Following data and information must be entered:

- Data of regular inspection and maintenance works
- Faults and fault causes occurred, measures taken
- Daata of repair and servicing works carried out
- Data of checks carried out

Keeping an operating log offers many advantages, e. g. traceability of measures and well-directed fault finding.

Operating logs can be purchased from ACO optionally, 🕮 ACO service chapter 1.1.

9 Fault clearance and repair

This chapter contains information on fault clearance and repair works at plant.

9.1 Safety during fault clearance and repair works

During fault clearance and repair works at plant, the following hazards may occur:

BEWARE!

The following safety indications must be read thoroughly prior to fault clearance and repair works. In the case of non-observance, medium and light injuries may occur. Make sure the personnel is sufficiently qualified (chapter 2.2).

Contact with greasy wastewater.

Injury of skin and eyes, danger of infection!

- Wear personal protective equipment, chapter 2.3.
- In the case of skin contact: immediately wash affected skin areas thoroughly with soap and disinfect.
- In the case of eye contact: rinse eyes. If eyes continue watering, consult a doctor.

9.2 Repair, fault clearance and spare parts

For fault clearance, repair works and spare parts ordering, please contact ACO Service chapter 1.1, mentioning the original type plate data.

10 Decommissioning, disposal

This chapter contains information on correct decommissioning and disposal of plant contents.

10.1 Safety during decommissioning and disposal

During decommissioning and disposal of plant contents, the following hazards may occur:

WARNING

The following safety indications must be read thoroughly prior to decommissioning and disposal. In the case of non-observance, severe injuries may occur.
Make sure the personnel is sufficiently qualified (chapter 2.2).

In addition, observe safety indications for „Transport and Storage“, chapter 3.1, and „Installation“, chapter 6.1.

BEWARE

Contact with greasy wastewater.

Injury of skin and eyes, danger of infection!

- Wear personal protective equipment, chapter 2.3.
- In the case of skin contact: immediately wash affected skin areas thoroughly with soap and disinfect.
- In the case of eye contact: rinse eyes. If eyes continue watering, consult a doctor.

Sharp edges due to material chippings

Injuries by worn parts!

- Be particularly cautious and thoughtful.

10.2 Putting the plant out of service

Sequence of decommissioning:

1. Empty housing and clean
2. Flush connected pipelines and dispose of wastewater
3. Close top system with cover

Carry out re-commissioning as per instructions for initial commissioning,
chapter 7.2.

10.3 Stopping the plant

Sequence of stopping:

1. Empty housing and clean
2. Flush connected pipelines and dispose of wastewater

3. Fill top system and housing
or
3. expose housing and top system

4. Dismantle connecting lines
5. Dismantle top system
6. Dismantle housing
7. Fill excavation

10.4 Disposal

The plant consists of recyclable materials.

CAUTION Improper disposal endangers the environment. Regional disposal regulations have to be observed.

- Separate all steel components and recycle as steel scrap.
- Separate all cast iron components and recycle as cast iron scrap.
- Separate all rubber components and recycle.
- Separate all plastic components and recycle.

Attachment 1: Table and illustration directory

Table directory

Illustration directory

Attachment 2: Conformity Declaration

Lipumax P-B and -D
Grease separators - full disposal/compact shape - polyethylene (PE-HD)/ground installation

The manufacturer:	
■	ACO Passavant GmbH Ulsterstrasse 3 36269 Philippsthal

herewith declares that the plants:	
■	Lipumax P-B and -D

conforms to regulation:		
■	EG-RL 2006/42/EG	Machine Directive

Machine parts of the plant are in conformity with further Directives:		
■	98/336/EWG	EMV Directive
■	92/31/EWG	EMV Directive

The following harmonised standards were applied		
■	DIN EN 1825	2004-12 edition
■	DIN 4040-100	2004-12 edition
■	EN ISO 12100-1	2009-10 edition
■	EN ISO 12100-2	2009-10 edition
■	DIN EN 60335	2008-01 edition

The following authorities were employed:		
■	-	-

Addition:	
■	-

Remark:	
■	The separators separate fats of vegetable and/or animal origin from wastewater by gravity in order to protect drainage systems.

Competent documentary agent:		
■	Mr Alexander Brinkhoff	ACO Passavant GmbH Im Gewerbepark 11c 36457 Stadtlengsfeld

Philippsthal, 01.02.2011			
■	Mr Ralf Sand	Sand	General Manager ACO Passavant GmbH

ACO Passavant GmbH

Im Gewerbepark 11c
D-36457 Stadtlengsfeld
Tel.: + 49 (0) 3 69 65/81 9 -0
Fax: + 49 (0) 3 69 65/81 9 -3 61

www.aco.com

The ACO Group. A strong family you can build on.

LTC 903A/06/2011 ● Subject no. 0150.34.05_V1.1
Origin: German manual ● Subject to technical alterations!