

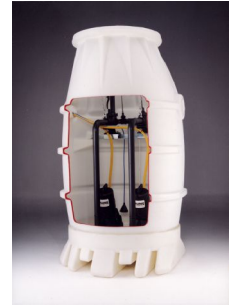
## General Safety Instructions

### Application

### Electrical Connection

### Installation

### Maintenance



## Pump chamber PKS 1200

You have bought a Jung Pumpen product and therefore purchased quality and performance. Guarantee this achievement by an installation according to the operating instructions so that our product can meet your demands to your full satisfaction. Please note that damages as a result of poor installation will affect the guarantee.

For this reason please follow the advice of the operating instructions.

Like any other electrical appliance the operation of this product can fail by electrical failure or technical faults. It is wise to always consider standby pumps, emergency generator and a control unit fitted with mains independent alarm.

PKS 1200 – 50 ID-No. 09972/0  
PKS 1200 – D 50 ID-No. 09973/0  
PKS 1200 – 80 ID-No. 09974/0  
PKS 1200 – D 80 ID-No. 09975/0

# Operating Instructions

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## General Safety Instruction

This operation manual gives basic instructions that should be followed carefully during installation, operation and maintenance. It is essential that this manual is carefully read by the responsible personnel/operator before assembly and commissioning. It is always to be kept available at the installation site.

## Identification of safety instructions in the operating manual

Safety instructions given in this manual non-available with which would affect safety are identified by the following symbol:



General danger for personnel



Dangerous voltage



Danger for machine and function

It is imperative that signs affixed to the machine, e.g.

- rotation arrow
  - fluid connection symbols
  - data / approval plate
- be observed and kept legible.

## Qualification of personnel

An authorized (certified) electrician and mechanic shall carry out all work. Scope of responsibility and supervision of the personnel must be exactly defined by the plant operator. If the staff does not have the necessary knowledge, they must be trained and instructed, which may be performed by the machine manufacturer or supplier on behalf of the plant operator, moreover, the plant operator is to make sure that the contents of the operating manual are fully understood by the personnel.

## Hazards in the event of non-compliance with the safety instructions

Non-compliance with the safety instructions may produce a risk to the personnel as well as to the environment and the machine and results in a loss of any right to claim damages or compensation. For example, non-compliance may involve the following hazards:

- Failure of important functions of the machine/plant
- Failure of specified procedures of maintenance and repair
- Exposure of people to electrical, mechanical and chemical hazards
- Endangering the environment owing to hazardous substances being released.

## Safety regulations for owner / operator

All safety instructions contained in this manual, all relevant national and local health and safety codes and any other service and safety instructions issued by the plant operator shall be complied with.

## Safety instructions relevant for operation

If hot or cold machine components involve hazards, they must be guarded against accidental contact.

Guards for moving parts (e.g. coupling) must not be removed from the machine while in operation.

Any leakage of hazardous (e.g. explosive, toxic, hot) fluids (e.g. from the shaft seal) must be drained away so as to prevent any risk to persons or the environment. Statutory regulations are to be complied with. The pumping station must be kept tidy and in good condition.

Hazards resulting from electricity are to be prevented (see for example, the national-specifications or the regulations of your local electricity supply company.)

## Safety instructions relevant for maintenance, inspections and assembly work

It shall be the plant operator's responsibility to ensure that all maintenance, inspection and assembly work is performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.

Any work on the machine shall only be performed when it is at a stand-still, it being imperative that the procedure for shutting down the machine described in this manual be followed.

Pumps and pump units which convey hazardous media must be decontaminated. All waste emissions such as used oil must be appropriately disposed of, oil spills must be cleaned up and emissions to the environment must be reported. On completion of work all safety and protective facilities must be reinstalled and made operative again.

Prior to restarting the machine, the instructions listed under "Electrical Connection" and "Installation" are to be observed.

## Unauthorized alterations and production of spare parts

Any modification may be made to the machine only after consultation with the manufacturer. Using spare parts and accessories authorised by the manufacturer is in the interest of safety. Use of other parts may exempt the manufacturer from any warranty or compensation claims.

## Unauthorized modes of operation

The reliability of the machine delivered will be only guaranteed if it is used in the manner intended, in accordance with clause 1; of this manual: The limit values specified in the data sheet must under no circumstances be exceeded.

## Warranty claim

Jung Pumpen pumps are long living, high quality products with expected reliable operation. However, should the need arise for a warranty claim, please contact your Jung Pumpen distributor.

# Operating Instructions

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# Operating Instructions

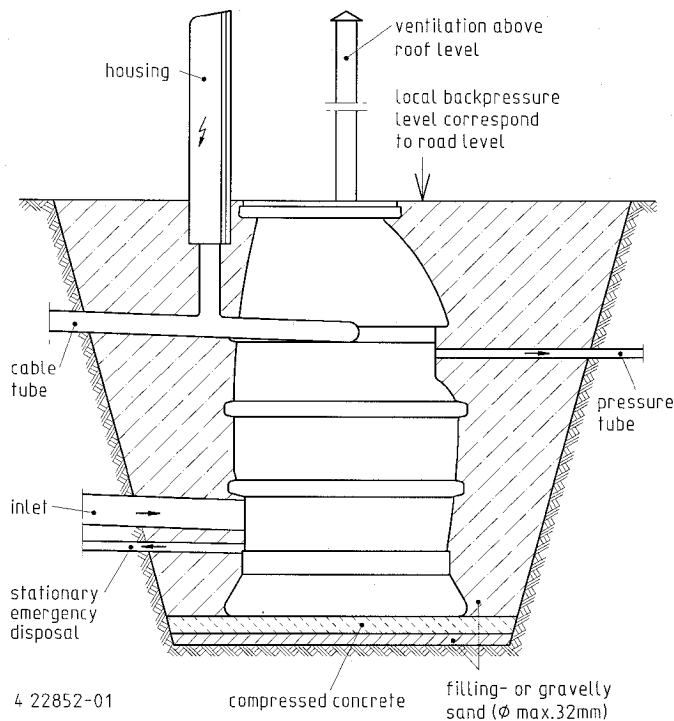
## Technical Data

|                            | PKS 1200 - 50     | PKS 1200 - D 50   | PKS 1200 - 80        | PKS 1200 - 80        |
|----------------------------|-------------------|-------------------|----------------------|----------------------|
| Material                   | PE-HD             | PE-HD             | PE-HD                | PE-HD                |
| Patented reflux valve      | DN 40             | DN 40             | DN 80                | DN 80                |
| Pressure pipe supply       | 1½" female thread | 1½" female thread | DN 80 flanged socket | DN 80 flanged socket |
| Inlet with lip seals       | DN 150 / DN 200   | DN 150 / DN 200   | DN 150 / DN 200      | DN 150 / DN 200      |
| Pipe socket (vent / cable) | DN 70 / 100       | DN 70 / 100       | DN 70 / 100          | DN 70 / 100          |
| Sump volume                | 1770 l            | 1770 l            | 1770 l               | 1770 l               |
| Weight                     | 162 kg            | 174 kg            | 176 kg               | 226 kg               |

## Description

This manual applies to a Jung Pumpen pre-fabricated pump chamber in high grade polyethylene with patented over water coupling system, cleaning eye and availability of a flushing connection "System Perrot".

Picture 1



**WARNING** The allowed temperature of the pumped medium is 35 °C, short time period 60°C.

## Application

- The buoyancy proof, pre fabricated pump chamber is designed as a conventional effluent collecting pit. Together with the selected pump arrangement it can be connected to standard pressure drainage systems or to a gravity sewer.
- The unit is designed for normal pedestrian and cyclist load. (DIN EN 124, group 1, permissible traffic load 5 KN/m<sup>2</sup>).
- The maximum operating pressure must not exceed 6,0 bar.
- The sump must be sunk on a concrete base

## Transportation and storage

The tank can be transported and stored in vertical or horizontal position.



Always use the handle to carry the pump, never lift it at the cable. Make sure the pump or the tank cannot roll or fall over and injure people or damage property. Follow the instructions of „Operation“.

## Electrical connection



Connect the pump cable(s) to the control unit according to the wiring diagram. Enough cable has to be in the tank to allow the pump(s) to be pulled out of the tank for servicing.

## Equipotential bonding

Pump chambers connected to the public sewer, are hazardous locations (Area 1). Protective arrangements with equipment grounding in areas 0 and 1 of hazardous locations need an additional equipotential bonding. (VDE 0165 – 5.3.3/2.91) To this the tie bar has to be connected with the equipment grounding at one of the M 16 screws of the coupling system. Use only material in accordance to the VDE regulations 0100, part 540 ! Check the connection of the tie bar and the equipment grounding on continuity.

# Operating Instructions



Please pay attention to the following regulations at installing the pump(s) or ask your qualified electrician / distributor.

- regulations for electrical installations (in Germany: VDE 0100, VDE 0165)
- regulations for prevention of accidents in sewage technical installations (in Germany: GUV 7.4, GUV 17.6)
- guidelines for explosion protection (in Germany: GUV 19.8)
- electrical installations in explosion hazardous areas (in Germany: Elex V)

## Safety precautions

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

- Never work alone. Use a lifting harness, safety line and a respirator as required. Do not ignore the risk of drowning.
- Make sure there are no poisonous gases within the work area.
- Check the explosion risk before welding or using electric hand tools.
- Do not ignore health hazards. Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Make sure that the lifting equipment is in good condition.
- Provide a suitable barrier around the work area, e.g. guard rail
- Make sure you have a clear path of retreat.
- Use safety helmet, safety goggles and protective shoes.
- All personnel who work with sewage systems must be vaccinated against diseases to which they may be exposed.
- A first-aid kit must be close at hand.
- Note that special rules apply to installation in explosive atmosphere.

Follow all other health and safety rules and local codes and ordinances

## Electrical connection



The electrical connection should only be done by qualified and authorized electricians.



- Jung Pumpen disclaims all responsibility for work done by untrained or/and unauthorized personnel.
- Heed operating voltage ! (see name plate and additional labels)
- Take out the main fuses to isolate the mains supply from the control unit before repairs or any other works and make sure it cannot be energized again.
- If the pump is equipped with automatic level control, there is a risk of sudden restart.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.

- If persons are likely to come into physical contact with pump or pumped media, the earthed (grounded) socket must have an additional connection to a earth- (ground) fault protection device (GFI).
- When pumping near a lake, a jetty, a pond etc. a safety distance of at least 20 m between the person and the pump is applicable. Do not place the pump directly in a pool. Observe the special safety regulations if used in connection with swimming pools.
- Use the pump only in accordance to the data stated on the pump's plate resp. in the technical data on page 4.



**WARNING**

Special rules apply to installation in explosive atmosphere.

Intrinsically safe circuits (Exi) are normally required for the automatic level control system by level regulators.

- A Jung Pumpen control unit gives you the certainty of design under safety regulations and an acceptance of work without any problems.
- Level sensors must be used at low voltage. For further details please see data sheet / o.m. Local rules may specify otherwise.
- To prevent the pump from blocking after long rest periods an additional daily trial run unit can be installed.
- Connection only to a mains supply installed in accordance to the local regulations. For fusing of d.o.l. starting pumps use only 10 A slow fuses or automatic circuit-breaker with C or D characteristic. (former G and K)  
Because the motor's nominal voltage is measured at the terminal board of the pump, please consider the voltage drop of long supply cables.
- The motors of the three-phase a.c. pumps must be protected by a suitable overcurrent release. Adjustment as following:  
direct start: + 10% of the nominal current  
star-delta start: (nominal current x 0,58) + 10 %  
If the protective arrangement has triggered, eliminate the trouble
- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well ventilated room above the backpressure level. Never install the control unit in the sump !

## Earthing

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

# Operating Instructions

## Mounting

1. Preparation of the excavation
2. Sump installation
3. Connection of the pressure pipe
4. Connection of the cable, ventilation, and inlet pipe
5. Sump cover
6. Filling of excavation
7. Pump installation
8. Sump cover placed at disposal by customer

## Preparation of the excavation

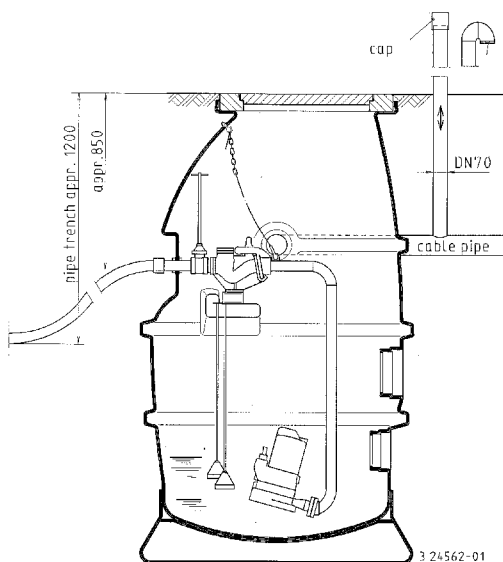


The excavation must be prepared in accordance to the rules of the employer's liability insurance association. (natural slope, lining ....)  
The bottom of the excavation must be filled with sand (no brush) and a bed of compressed concrete on top, before everything has to be levelled.

## Sump installation

Hang up the sump on the 3 eyebolts on top and lift it into the excavation, level it on the bed of the excavation and remove the eyebolts.

Picture 2



### WARNING

The pressure pipe should be installed in a sufficient depth according to the local regulations to avoid any danger of freezing.  
If no dimension is specified, the pipe should be installed in 1,2 m (≈ 4 feet) depth. The outlet pipe of the venting should be installed in a place protected from wind. The pipe should be reduced from DN 100 to DN 70 and conducted to the ground with two 90° bends. 10 holes of Ø 16 mm must be drilled in the plug to enable air circulation. Pump volume should be reduced to reach a short stay of water in the tank.

## Operating condition DIN EN 476

|                  | 1 | 2 | 3 | 4 |
|------------------|---|---|---|---|
| 1 concrete ring  | ● |   |   |   |
| 3 concrete rings |   | ● | ● | ● |
| 1 PSV 370        |   | ● | ● | ● |

## Operation Buoyancy

1. Limited operation from above.
2. Not operational from above.
3. Limited operation by ladder at sight with max. breadth of 30 cm (11 inch). Please heed the rules for prevention of accidents.

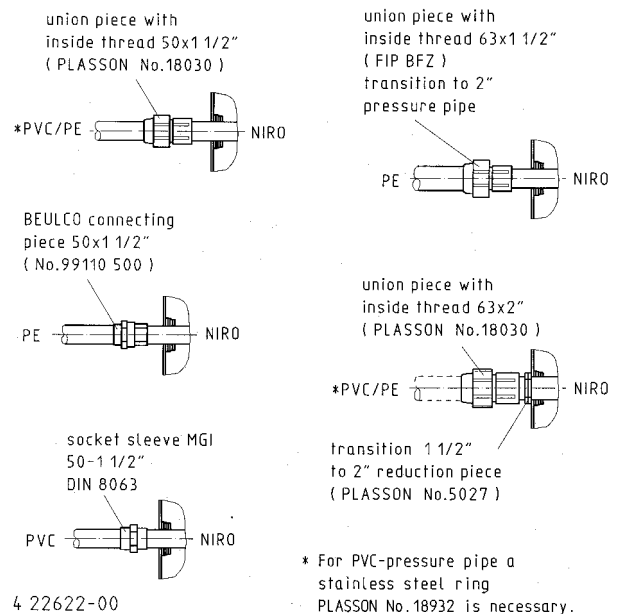
## Buoyancy proofness / statics

4. Because of static and buoyancy proof reasons, the sump must not be submerged deeper than 1,0 m

## Connection of a DN 40 pressure pipe

Screw a 1 1/2" female adaptor onto the pressure pipe supply and connect the continuing pressure tube. (see pic. 2)

Picture 3



# Operating Instructions

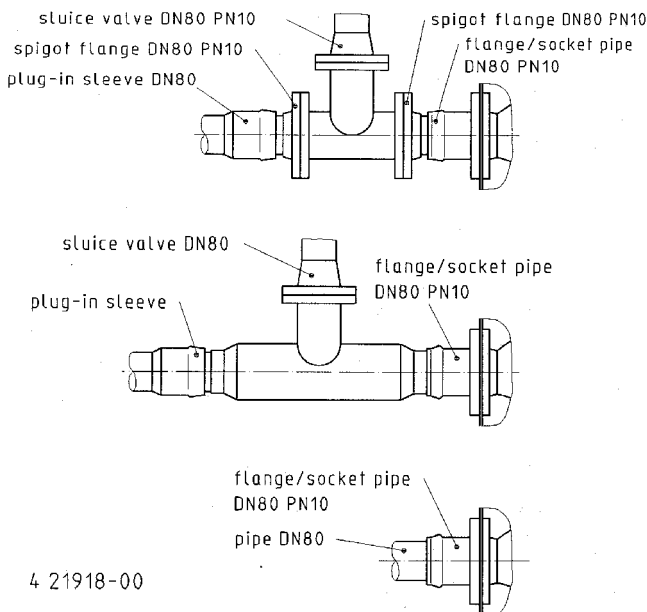
## Connection of a DN 80 pressure pipe

Fasten the sluice valve and the spigot flange with screws and push the whole unit into the pressure outlet of the sump. Use only underground suitable parts. Take the dowel pin out of the extension square and put it onto the sluice valve shaft, put in the dowel pin and fasten it. Push down the telescopic sleeve tube onto the sluice valve housing and stretch it to the ground level. Connect the flanges of the sluice valve and the pressure pipe or use a spigot flange. Fill the excavation up to 30 cm (1 foot) of the ground level, put the concrete plate over the sleeve tube and level it. Put the cast iron valve box over the extension and adjust it.

The hydraulic pressure test of the pressure tube has to be made in accordance to ATV A 116 and DIN 4279, part 1. Do not test the tightness of the pressure tube with closed sluice valves.

(see picture 4)

Picture 4

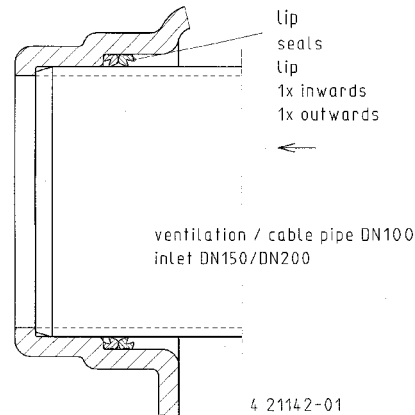


Provide some sliding means on the lip seals and insert one with the lip to the inside into the sleeve. Push the second lip seal with the lip outwards onto the pipe. Insert the pipe into the bushing up to the limit stop and adjust the lip seal with a screw driver. (see picture 4)

### WARNING

All tubes must have declivity. (lower level at tank outlet)  
If water from a fat collector flows into the sump take care of an adequate sump ventilation and regularly servicing in accordance to DIN 4040, part 1.

Picture 5



## Cover of poly sump

The cover of the poly sump can be adjusted to the ground surface by using a max. of 3 concrete rings. Reliefs in the area of support must be levelled with compo. Fill all the gaps between the sump and the concrete rings with compo too. To seal the tank from rain water, use silicon or sealing tape to connect the sump with the rings and the cover.

## Filling of excavation

If the excavated earth has a granular size of 0 to a max. of 32,0 mm, it can be used to fill the excavation. In case of boulders, rocks and sharp-edged stones use filling- or gravelly sand with a granular size of 0 – 32 mm. The filling material should be placed in layers of about 30 cm (1 foot) and compressed by a hand rammer. In connection with a ground water lowering the back-filling can be washed-in. For the buoyancy proofness in clay ground conditions the excavation has to be filled up with boulder clay, sand or concrete.

### WARNING

Avoid one sided high back-filling in any case !

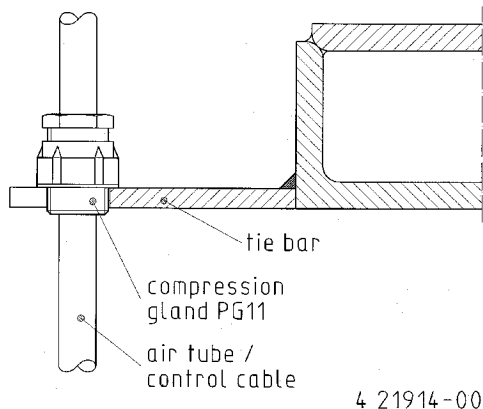
By using a pumping unit to lower the ground water level, be sure to finish the filling of the excavation before switching off the pumping unit. The poly sump must be installed in a vertical position to guarantee the reliable operation of the ball reflux valve.

## Installation of level control

The air tubes / Control cable of the level controls must be placed in the slots of the tie bar with the compression gland PG 11. (see pic. 5) By loosening the gland the level sensor can be adjusted in the right height. (see level control operating instructions)

# Operating Instructions

Picture 6



## Mounting of the pump(s)

Screw the pressure outlet of the pump on the pressure pipe with the enclosed screws, nuts and flat sealing. Connect the shackle of the pump with the chain.

**WARNING** Before installing the pump, the sump has to be cleaned from soil, gravel or sand. Grease the coupling unit to simplify the removing of the pump.

Lower the pump with the chain down in the tank. Pin up the cast iron ring on the gudgeon of the coupling system. Pay attention to the perfect fit of the coupling. Pull the pump cable(s) and the control cable(s) or tubes through the cable pipe and connect them to the control unit.

**WARNING** If the pump station is not set into operation, the gate valve must be closed.

## Cover supplied by customer

Covers supplied by customers can be a single concrete cover or a BEGU cover (concrete/cast iron) of class A15 with an inner  $\varnothing$  of 600 mm. For level compensation concrete rings according to DIN 4034 T2 with a max. height of 100 mm can be used.

## Cleaning eye / flushing connection

Install / connect:

- manometer to check the operation- and system-pressure
- mobile flushing units (water/air) or stationary flushing facilities (compressor) to clean the pressure drainage system
- vacuum breaker to compensate depression of declivity pressure drainage systems
- disposal trucks to empty the tank in emergency situations

## Flushing of pressure drainage system

**WARNING** Avoid flushing pressures higher than 9 bar !

Switch off the pump and close the sluice valve before opening the coupling lever at the flushing connection, because water can penetrate under pressure.

Before opening the sluice valve, the pressure on the delivery side must have a min. of 3,0 bar, because waste water can be pressed into the disposal truck. After the flushing operation the sluice valve must be closed. Open it not before the plug has been mounted and secured again.

The sump and all accessories must be checked and serviced annual.

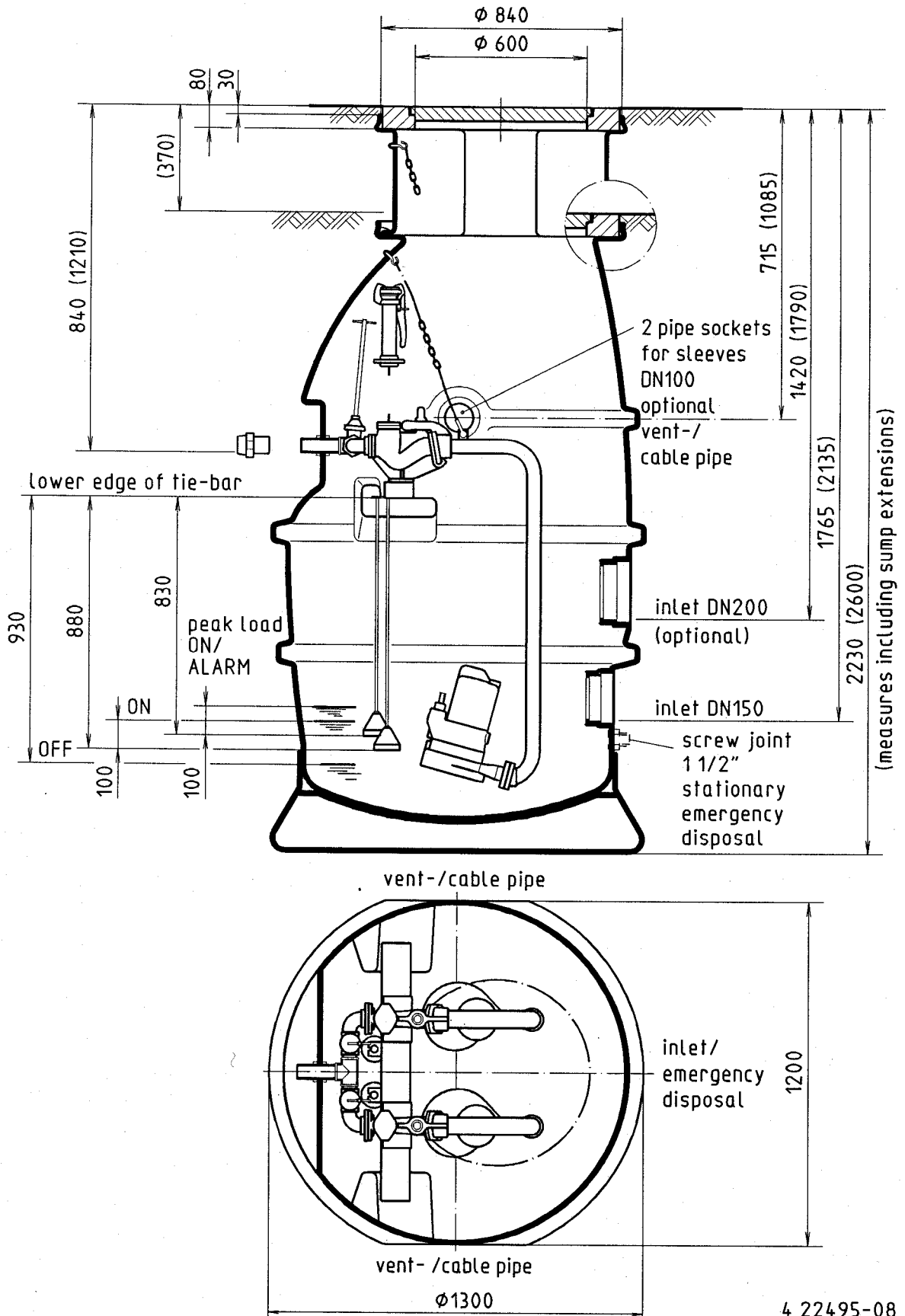
The valves and the coupling system can be operated from the ground level. In special situations (installation with additional rings) we recommend the use of a min. 3,3 m ( $\approx$  11 foot) long ladder.



Pay attention to the rules of prevention of accidents

# Operating Instructions

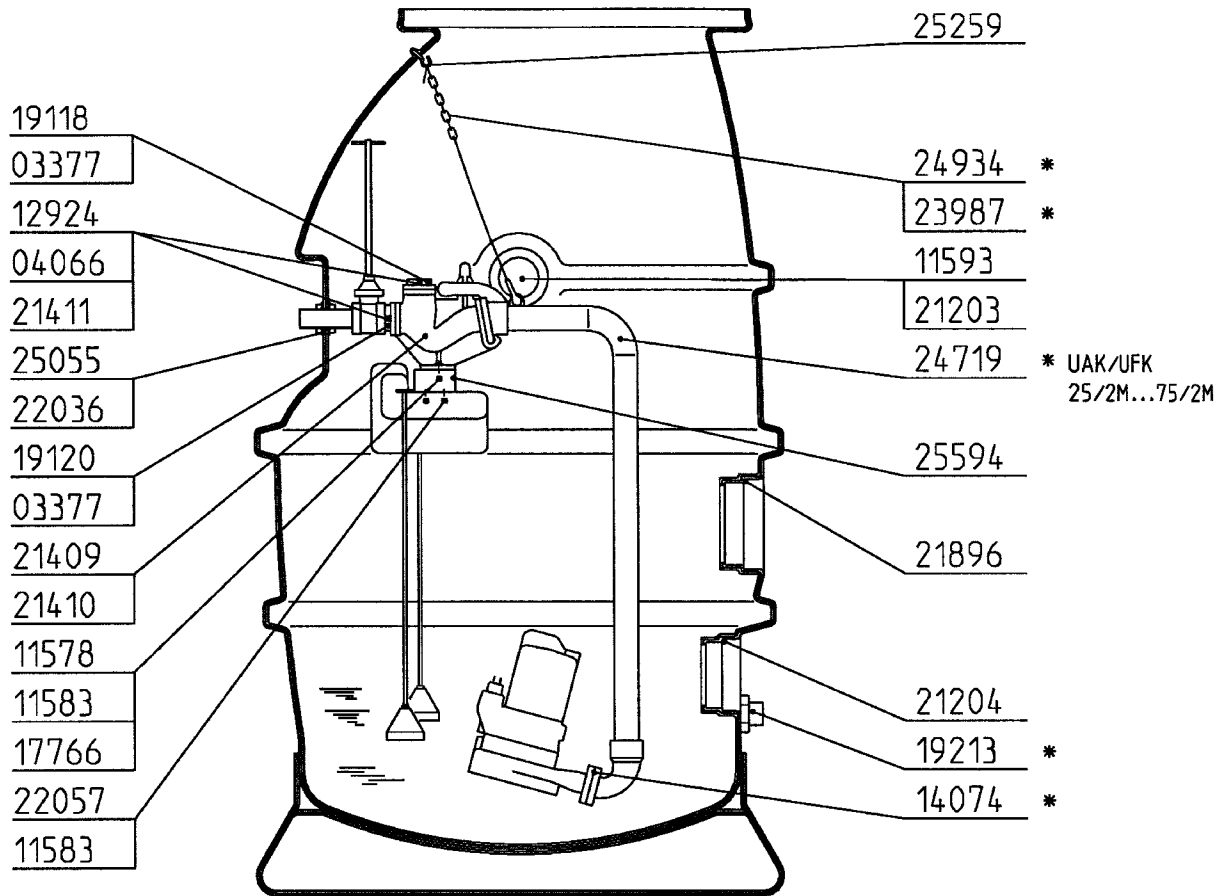
Picture 7 (dimensions)



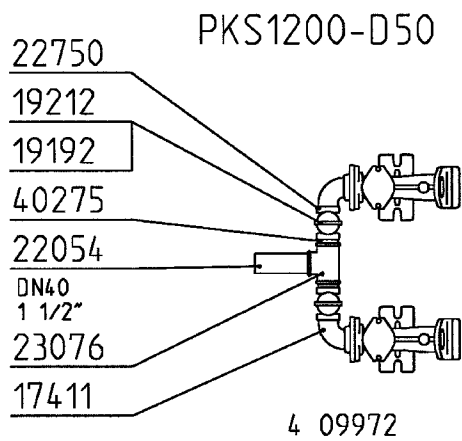
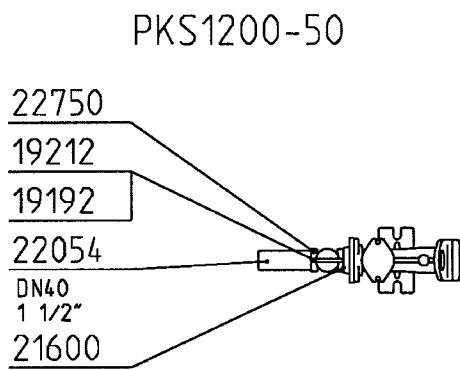
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# Operating Instructions

Picture 8 (sectional drawing PKS 1200 – 50 / D 50)



\* additional accessories



# Operating Instructions

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## Spare Parts List

| ID-No. | Description                    | Qty. 1200 - 50 | Qty. 1200 – D 50 |
|--------|--------------------------------|----------------|------------------|
| 00423  | chain with 2 rings, 5,0 m *    | 1              | 2                |
| 03377  | O-ring seal 55 x 5             | 2              | 2                |
| 04066  | washer Ø 8,4 mm                | 4              | 8                |
| 05875  | compression gland PG 11        | 2              | 3                |
| 11578  | hexagon head screw M 16 x 40   | 2              | 4                |
| 11583  | washer A 17                    | 6              | 8                |
| 11593  | socket plug DN 100             | 1              | 1                |
| 12924  | hexagon head screw M 8 x 40    | 4              | 4                |
| 17411  | elbow 1½"                      | -              | 2                |
| 17766  | hexagon nut M 16               | 2              | 4                |
| 19118  | cover                          | 1              | 2                |
| 19120  | cover for cleaning eye 1½"     | 1              | 2                |
| 19192  | dowel pin 3 x 16               | 1              | 2                |
| 19212  | extension of sluice valve      | 1              | 2                |
| 19367  | W-clip for flushing connection | 1              | 1                |
| 21203  | lip seal ring DN 100           | 2              | 2                |
| 21204  | lip seal ring DN 150           | 2              | 2                |
| 21409  | valve housing DN 40            | 1              | 2                |
| 21410  | ball for ball check-valve      | 1              | 2                |
| 21411  | square nut M8                  | 4              | 8                |
| 21600  | nippel 1½ x 38                 | 1              | -                |
| 21896  | lip seal ring DN 200           | 2              | 2                |
| 22036  | washer 80 x 50 x 3             | 2              | 2                |
| 22054  | nippel 1½ x 150                | 1              | 1                |
| 22057  | hexagon head cap wood screw    | 4              | 4                |
| 22750  | sluice valve 1½ (DN 40) PN 16  | 1              | 2                |
| 23076  | T-piece 1½"                    | -              | 1                |
| 25055  | counternut 1½                  | 2              | 2                |
| 25259  | clothes line hook              | 1              | 2                |
| 25594  | tie-bar PKS 1200               | 1              | 1                |
| 40275  | nippel 1½ x 50                 | -              | 2                |

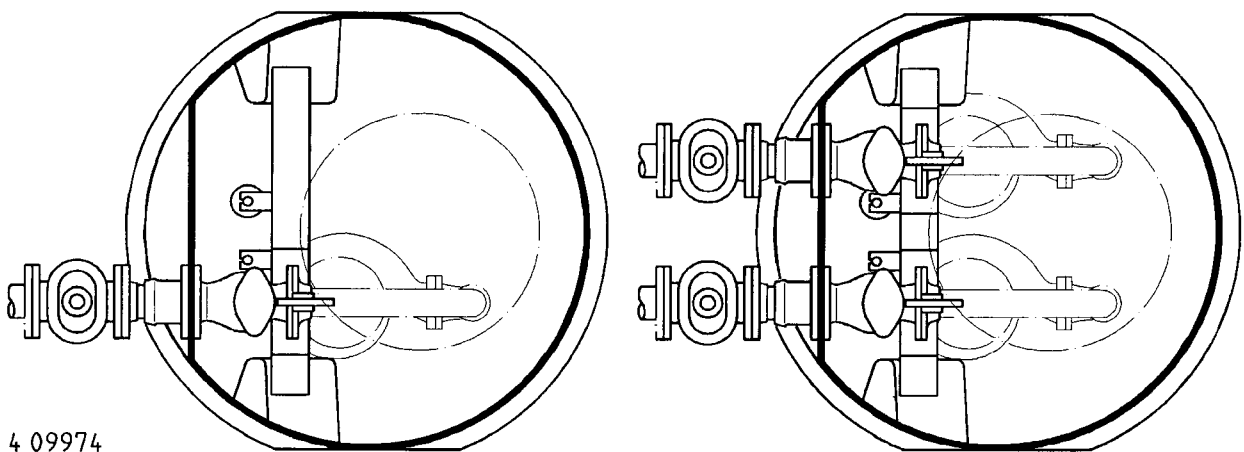
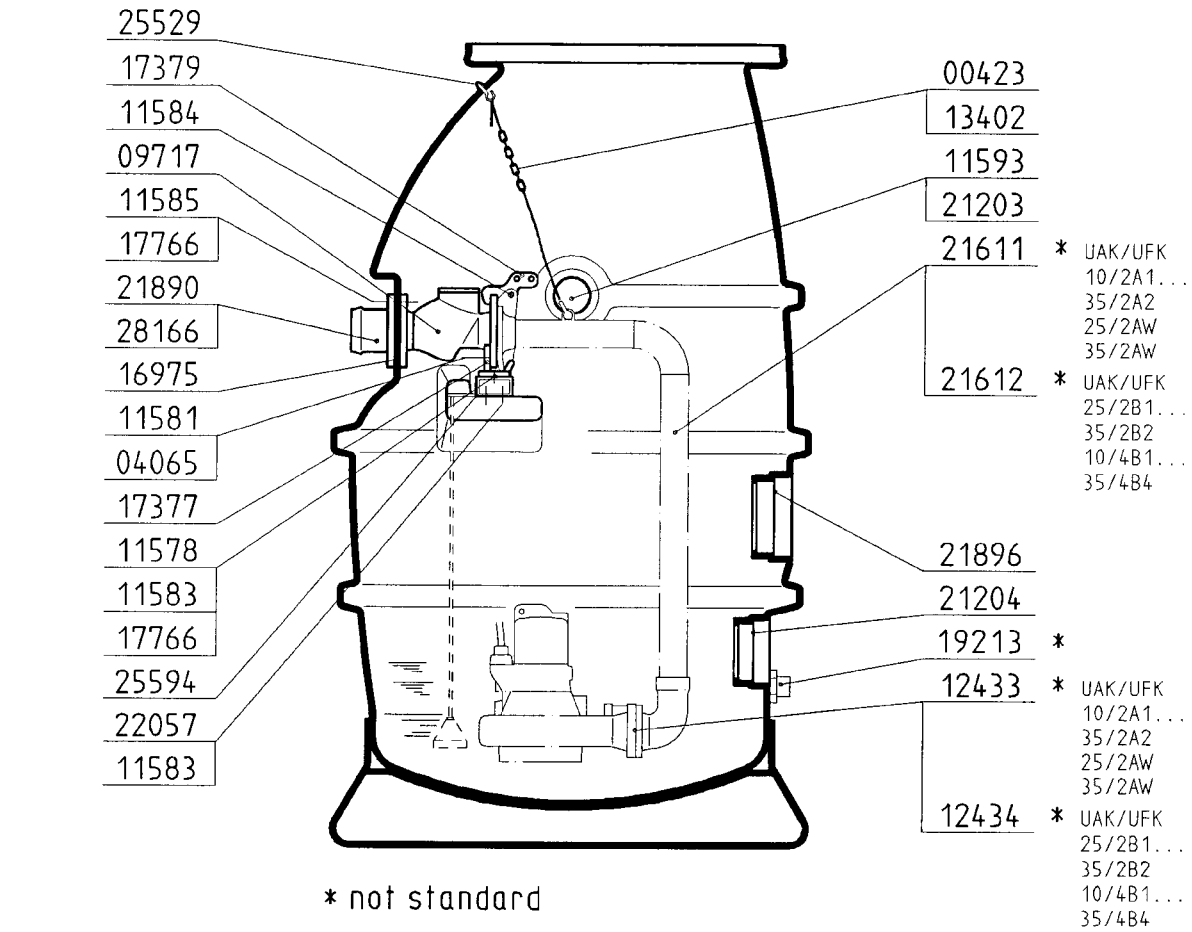
### Accessories (not standard)

|       |   |   |   |
|-------|---|---|---|
| 14074 | seal kit DN 32, PN6 *                       | 1 | 2 |
| 19213 | threaded joint 1½" for emergency disposal   | 1 | 1 |
| 23987 | shackle NG 10, stainless steel              | 1 | 2 |
| 24719 | pressure pipe DN 40 with seal kit and chain | 1 | 2 |
| 24934 | chain, 5,0 m with 8 rings and 2 shackles    | 1 | 2 |

By ordering spare parts indicate type and part number of unit.

# Operating Instructions

Picture 9 (sectional drawing PKS 1200 – 80 / D 80)



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# Operating Instructions

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## Spare Parts List

| ID-No. | Description                      | Qty. 1200 - 80 | Qty. 1200 – D 80 |
|--------|----------------------------------|----------------|------------------|
| 00423  | chain with 2 rings, 5,0 m *      | 1              | 2                |
| 03104  | hexagon head nut M8              | 2              | 4                |
| 04065  | spring washer B 16               | 2              | 4                |
| 04066  | washer Ø 8,4 mm                  | 4              | 8                |
| 05875  | compression gland PG 11          | 1              | 2                |
| 09717  | swing type check valve R 80      | 1              | 2                |
| 11578  | hexagon head screw M 16 x 40     | 2              | 4                |
| 11581  | hexagon head screw M 16 x 35     | 2              | 4                |
| 11583  | washer A 17                      | 8              | 10               |
| 11584  | center grooved dowel pin 14 x 50 | 1              | 2                |
| 11585  | stud bolt M 16 x 45              | 4              | 8                |
| 11593  | socket plug DN 100               | 1              | 1                |
| 16975  | flat packing 105 x 200 x 3       | 1              | 2                |
| 17377  | coupling seat DN 80              | 1              | 2                |
| 17379  | coupling lever                   | 1              | 2                |
| 17766  | hexagon nut M 16                 | 8              | 16               |
| 21203  | lip seal ring DN 100             | 2              | 2                |
| 21890  | flanged socket DN 80, PN 10      | 1              | 2                |
| 21896  | lip seal ring DN 200             | 2              | 2                |
| 22057  | hexagon head cap wood screw      | 4              | 4                |
| 25259  | clothes line hook                | 1              | 2                |
| 25594  | tie-bar PKS 1200                 | 1              | 1                |
| 28166  | profiled seal                    | 1              | 2                |

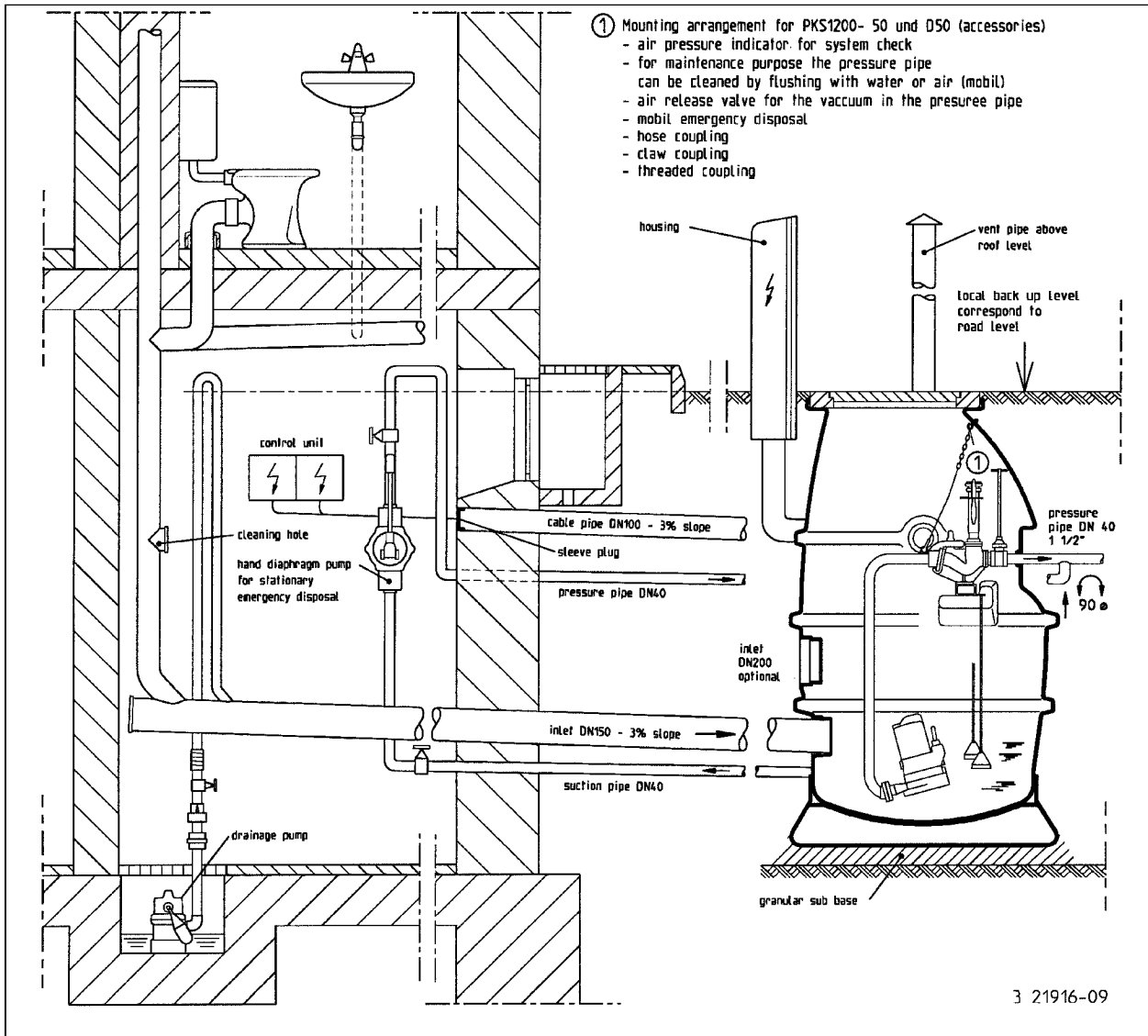
### Accessories (not standard)

|       |  |   |   |
|-------|--|---|---|
| 12433 | seal kit DN 65, PN 6   | 1 | 2 |
| 12434 | seal kit DN 80, PN 6 *   | 1 | 2 |
| 13402 | shackle 3/8"   | 1 | 2 |
| 19213 | threaded joint 1½" for emergency disposal                                | 1 | 1 |
| 21611 | pressure pipe DN 65 with seal kit and chain (pumps size A1, A2 and AW) * | 1 | 2 |
| 21612 | pressure pipe DN 80 with seal kit and chain (pumps size B1, B3 and B4) * | 1 | 2 |

By ordering spare parts indicate type and part number of unit.

# Operating Instructions

Picture 10 (installation example)



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