
General Safety Instructions

Application

Electrical Connection

Installation

Maintenance



Pump chamber PKS 800

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 800 – 50 ID-No. 09950/5
PKS 800 – D 50 ID-No. 09951/5
PKS 800 – 80 ID-No. 09962/3

Operating Instructions

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

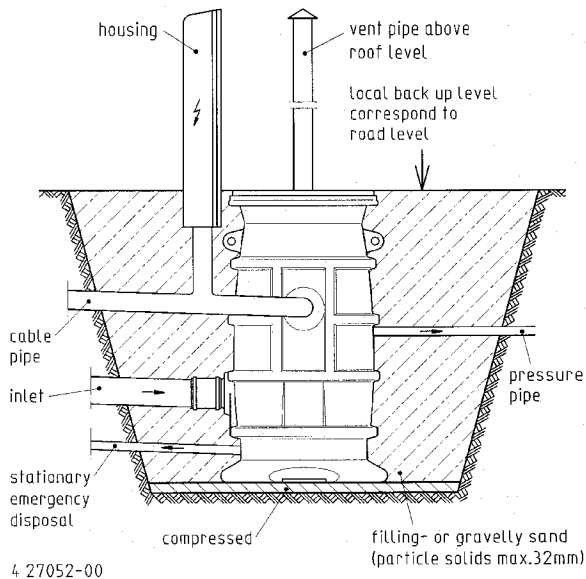
Technical Data

	PKS 800 - 50	PKS 800 - D 50	PKS 800 - 80
Material	PE-HD	PE-HD	PE-HD
Patented reflux valve	DN 40	DN 40	DN 80
Pressure pipe supply	1½" female thread	1½" female thread	DN 80 flanged socket
Inlet with lip seals	DN 150	DN 150	DN 150
Pipe socket (vent / cable)	DN 70 / 100	DN 70 / 100	DN 70 / 100
Sump volume	750 l	750 l	750 l
Weight	81 kg	94 kg	89 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/m²).
- 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 an 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

Electrical connection

Please pay attention to the operating instructions of the installed pump and control unit.

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

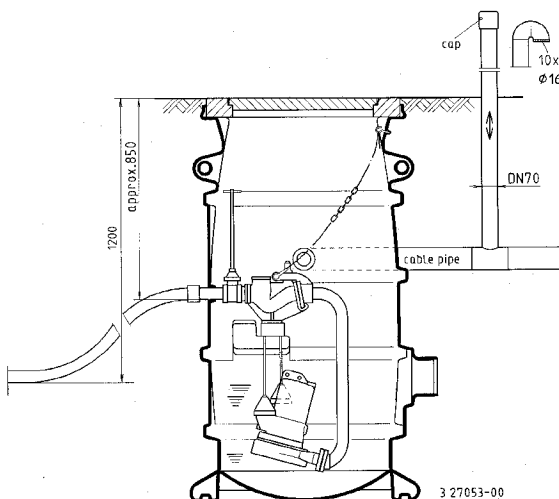
Hang up the sump on the 2 eyebolts at the side, lift it into the excavation, and level it on the bed of the compressed filling- or gravelly sand.

WARNING

The Hebefix 100 is designed for usual domestic drainage water, according to DIN 1986, part 3. In some countries it must not be used for pumping sewage water from lavatories, for further information ask your distributor.

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

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	5
1 concrete ring		●			
3 concrete rings			●	●	●
1 PSV 370	●			●	●

Operation

1. External operation from above with flushing connector extension (code-No. 25794) and sluice valve extension (code-No. 25720).
2. Limited operation from above.
3. Not operational from above.
4. Limited operation by ladder at sight with max. breadth of 30 cm (11 inch). Please heed the rules for prevention of accidents.

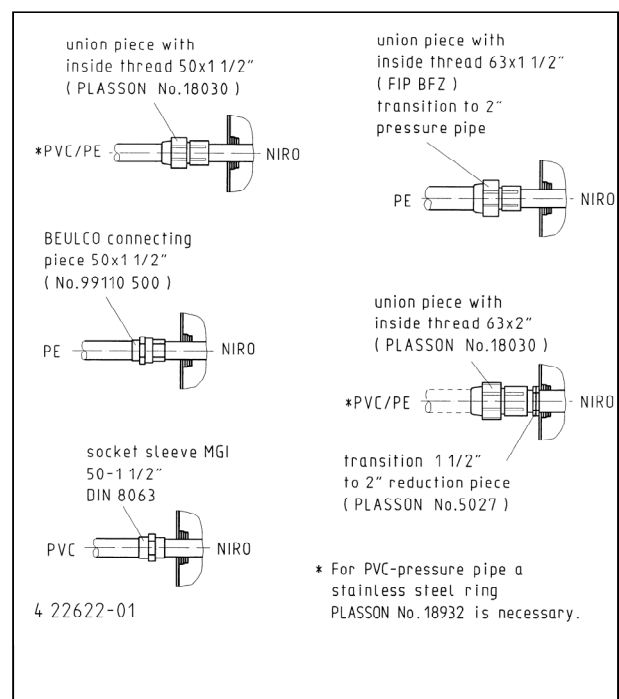
Buoyancy proofness / statics

5. 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. 3)

Picture 3



Operating Instructions

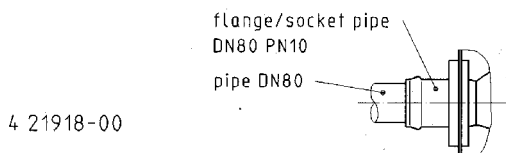
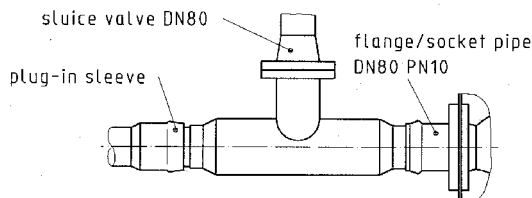
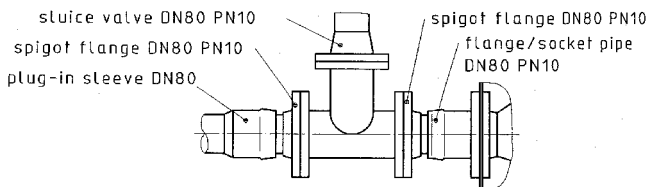
Connection of a DN 80 pressure pipe

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

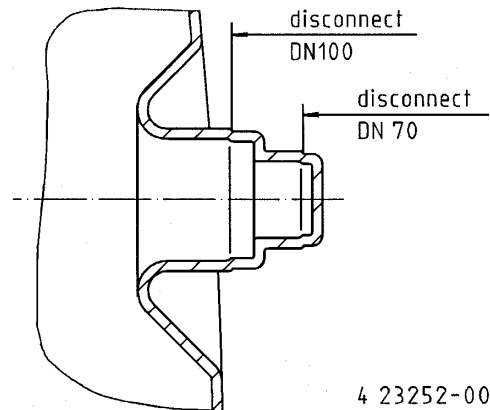


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Connection of vent and cable pipe.

The Pipe socket must be cut and burred at the marked position for DN 70 or DN 100 pipe. Connect the following pipe with a sleeve or a collar to the socket.

Picture 5



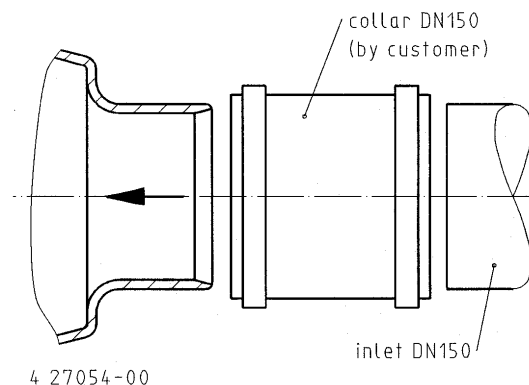
Connection of inlet

Connect the supply pipe with a collar KGU DN 150 to the pipe socket of the sump. (see picture 6)

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 6



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.

Operating Instructions

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.

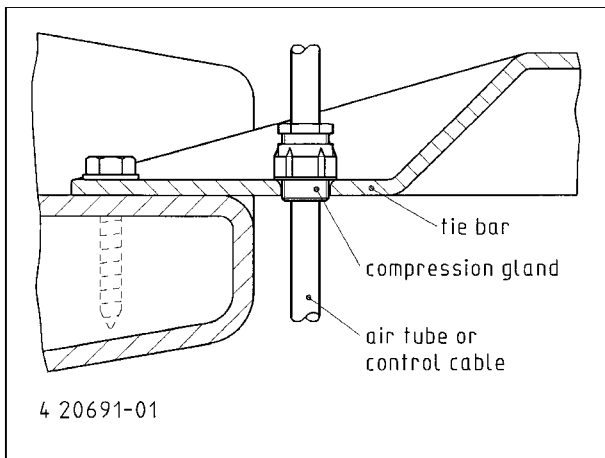
WARNING Avoid one sided high back-filling in any case !

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)

Picture 7



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. At PKS 800-80, the chain must be inserted in the respective holes „A“ or „B“. The choice of the hole is in accordance to the pump type : A1, A2, AW = „A“ and B1, B2, B3, B4 = „B“.

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 Ø 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 (≈ 11 foot) long ladder.

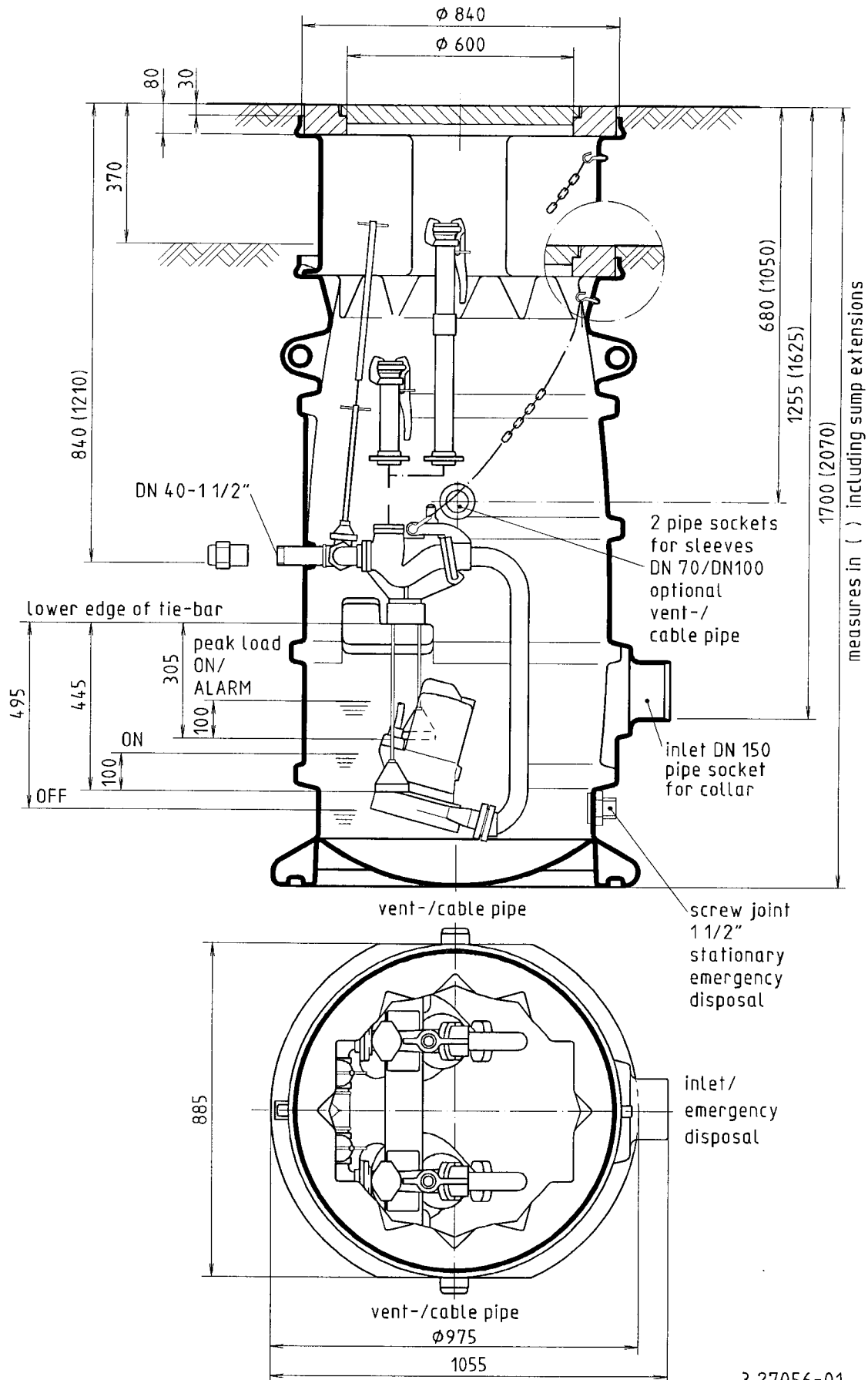


Pay attention to the rules of prevention of accidents.



Operating Instructions

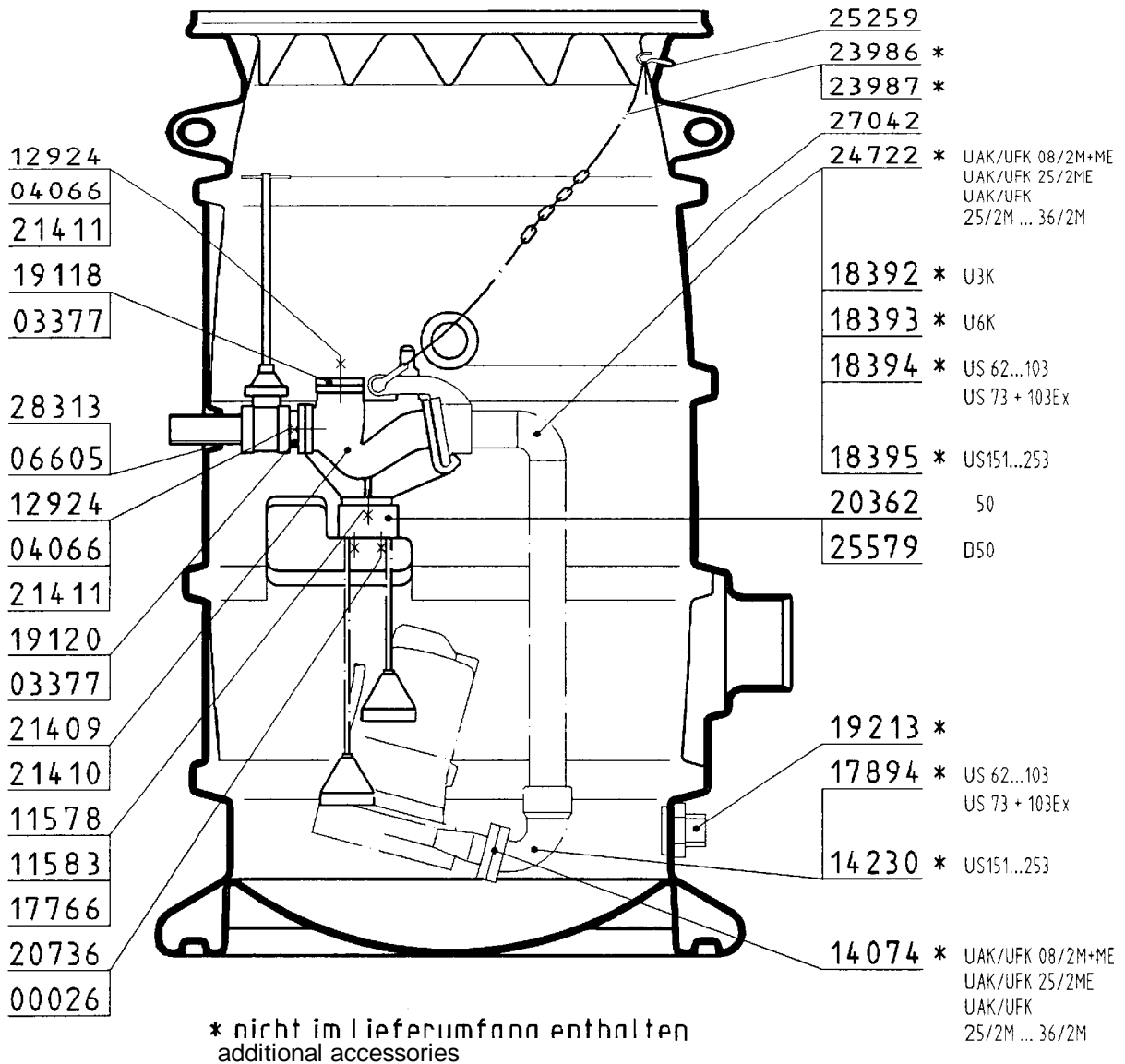
Picture 8. dimensions



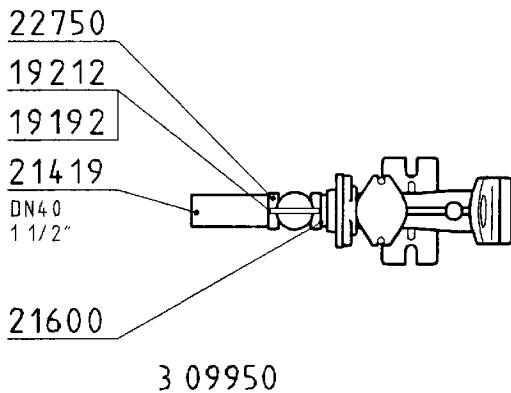
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Operating Instructions

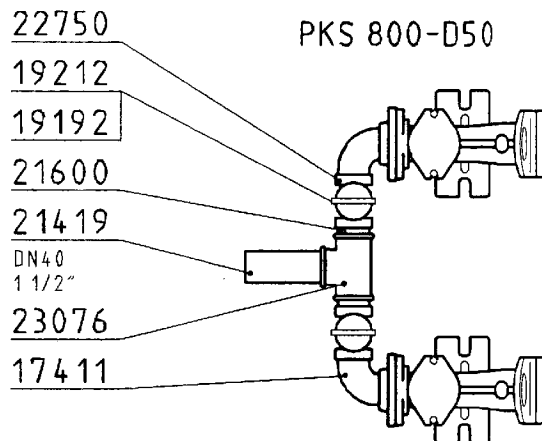
Picture 9 (sectional drawing PKS 800 – 50 / D 50)



PKS 800- 50



PKS 800-D50



Operating Instructions

Spare Parts List

ID-No.	Description	Qty. 800 - 50	Qty. 800 – D 50
00026	washer 10,5	4	4
03377	O-ring seal 55 x 5	2	3
04066	washer Ø 8,4 mm	4	8
05875	compression gland PG 11	2	3
06605	O-ring seal 45 x 5	1	1
11578	hexagon head screw M 16 x 40	2	4
11583	washer A 17	4	8
12924	hexagon head screw M 8 x 40	4	8
17411	elbow 1½"	-	2
17766	hexagon nut M 16	2	4
19118	cover	1	2
19120	cover for cleaning eye 1½"	1	1
19192	dowel pin 3 x 16	1	2
19212	extension of sluice valve	1	2
20362	tie-bar PKS 800-50	1	-
20736	hexagon head cap wood screw 10 x 60	4	4
21409	valve housing DN 40	1	2
21410	ball for ball check-valve	1	2
21411	square nut M8	4	8
21419	tube 1½" x 140	1	1
21600	nippel 1½ x 38	1	2
22750	sluice valve 1½ (DN 40) PN 16	1	2
23076	T-piece 1½"	-	1
25259	clothes line hook	1	2
25579	tie-bar PKS 800 – D50	-	1
27042	sump	1	1
28313	distance bush	1	1

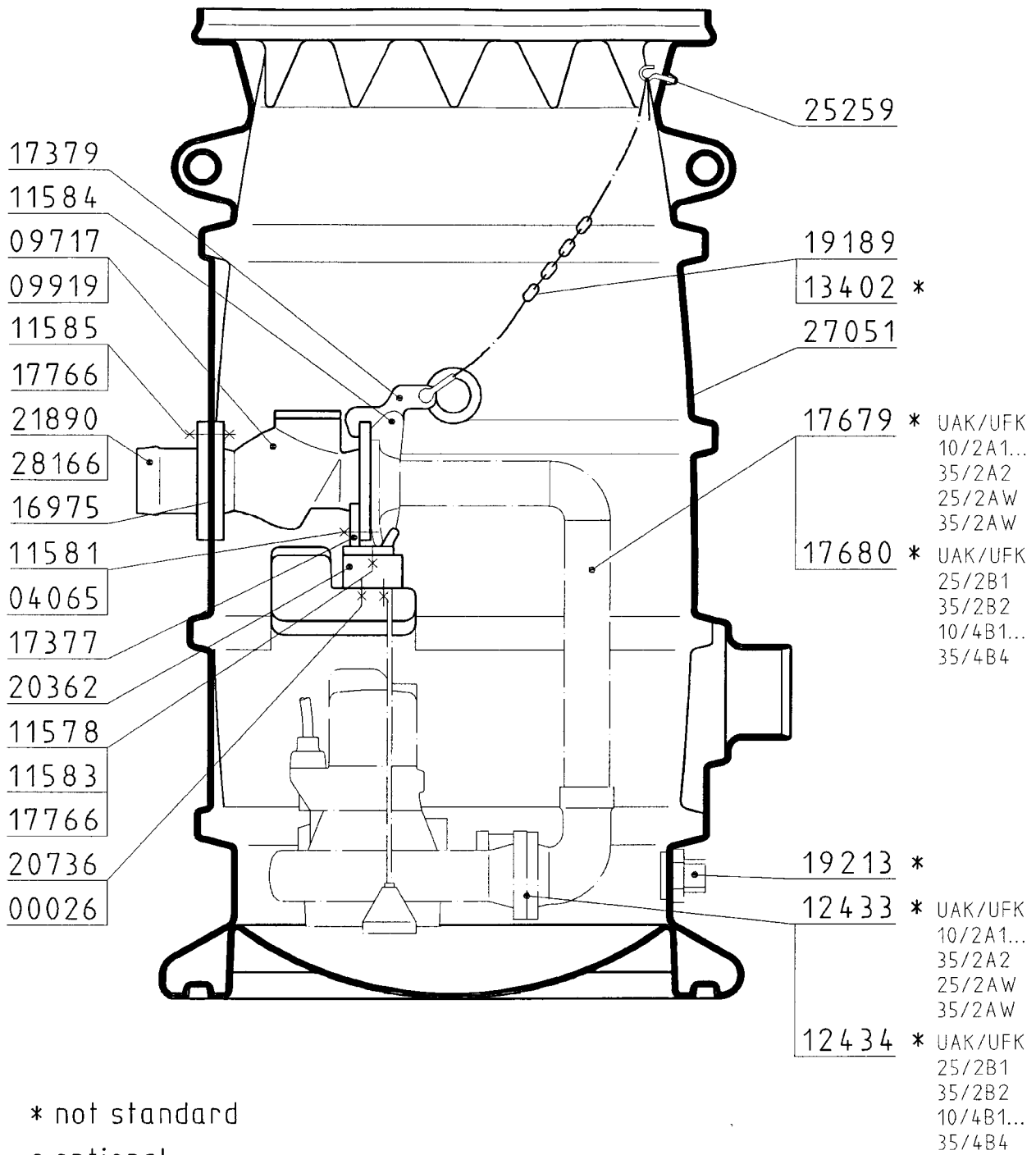
Accessories (not standard)

14074	seal kit DN 32, PN6	1	2
14230	elbow 2", for US 151	1	2
17894	elbow 1½" for US 62 ... 103, 73 + 103 Ex	1	2
18392	pressure pipe DN 40 with seal kit and chain for U 3 KS	1	2
18393	pressure pipe DN 40 with seal kit and chain for U 6 K	1	2
18394	pressure pipe DN 40 with seal kit and chain for US 62 ... 103, 73 + 103 Ex	1	2
18395	pressure pipe DN 40 with seal kit and chain for US 151 ... 253	1	2
19213	threaded joint 1½" for emergency disposal	1	1
23986	2,5 m chain with 5 rings and 1 shackle	1	2
23987	shackle NG 10	1	2
24722	pressure pipe DN 40 with seal kit and chain UAK / UFK 25/2 M ...36/2M	1	2

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

Operating Instructions

Picture 10 (sectional drawing PKS 800 – 80)



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Operating Instructions

Spare Parts List

ID-No.	Description	Qty. 800 - 80
00026	washer Ø 10,5 mm	4
04065	spring washer B 16	2
05875	compression gland PG 11	1
09717	swing type check valve R 80	1
09919	ball check valve K 80 (not standard)	1
11578	hexagon head screw M 16 x 40	2
11581	hexagon head screw M 16 x 35	2
11583	washer A 17	4
11584	center grooved dowel pin 14 x 50	1
11585	stud bolt M 16 x 45	4
16975	flat packing 105 x 200 x 3	1
17377	coupling seat DN 80	1
17379	coupling lever	1
17766	hexagon nut M 16	8
20362	tie bar PKS 800 – 80	1
20736	hexagon head cap wood screw 10 x 60	4
21890	flanged socket DN 80, PN 10	1
25259	clothes line hook	1
27051	drawing with measurements	1
28166	profiled seal	1

Accessories (not standard)

12433	set of seals DN 65, PN 6	1
12434	set of seals DN 80, PN 6	1
13402	shackle 3/8"	1
17679	pressure pipe DN 65 with seal kit and chain (pumps size A1, A2 and AW)	1
17680	pressure pipe DN 80 with seal kit and chain (pumps size B1.... B4)	1
19189	2,5 m chain with 2 rings	1
19213	threaded joint 1½" for emergency disposal	1

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

Operating Instructions

Picture 11 (installation example)

