STROBL PUMPEN
GMBH & CO.KG
PUMPEN - ANLAGEN - ZUBEHÖR

Instruction Manual

Drainage pump
Series KEP / KEPL

Content:

1. General

The observance of this manual (BTA) is the basis for a disturbance free use of the pump. The instructions must be studied carefully and be considered in all points. The instructional manuals of the implemented systems have additinally to be observed.

Technical changes in pictures and information compared with this BTA are reserved.

1.1 Fields of operation

The drainage pumps of the series KEP are used for installation in tanks, pits and sumps. The pump body must be submerged, but the motor must be placed in a dry area.

1.2 Technical data

Voltage, frequency, motor power, degree of protection and performance data of pump are mentioned in the order confirmation and on the name plate of the pump/motor.
Free passage through pump:

KEP(L) 1½	8 mm
KEP(L)-F 1½	8 mm
KEP(L) 2	10 mm
KEP(L)-F 2	10 mm
KEP(L) 2½	12 mm

1.3 Media to be pumped

Pump to be used for clear and/or dirty liquids.

1.4 Usage

The pump may only be used as mutually agreed during ordering. A change of the use must be verified and approved by the manufacturer.

1.5 Manufacturer

Details to the manufacturer you can find on the back side of this instruction or on the name plate of pump and motor.

2. Safety

These BTA contains informations for installation, operation and maintenance of the pump. The instructions are to be perused before these works and to followed by realisation of this. The instructions must be available constantly at the application place.

All safety informations contained in these instructions are to be followed, independently wether these are in the special segment 2 or in the other segments.

All works may be carried out only by accordingly trained specialist staff. All legal regulations counting to the suitable areas must be also considered in view of industrial safety and qualification of the executive personal.

2.1 Marking of safety informations

The safety informations contained in this BTA which can cause dangers for persons in nonobservance marked specially with the general danger symbol

(Safety symbol to DIN 4844-W9)

or in case of warnings with electricity.

(Safety symbol to DIN 4844-W8)

For safety informations whose nonobservance can cause dangers for the pump and their functions the word

Caution

is inserted.

Informations located direct on the pump like name plate, arrow for direction of rotation, etc. have to be observed and held always fully readable.

2.2 Qualification and training of staff

The staff for operation, maintenance, inspection and assembly has to be qualified for this work. Area of responsibility, competence and the supervision of the staff must be exactly regulated by the operator. If the staff has not the necessary knowledge, the staff must be informed and trained. This can occur if necessary, by order of the operator of the machine through the manufacturer / supplier. Furthermore the operator must be sure that the content of this manual is fully understood by the staff.

2.3 Risks in case of non-observance of the safety information‘s.

The non-observance of the safety informations can cause risks for the staff, environment, machine and surrounding. The non-observance of the safety information‘s can cause the loss of any damage substitue claims.

Following some samples of risks cuased by non-observance of the safety information‘s:

- Failing of main functions of the machine/ system
- Danger to persons by electric, mechanical and chemical effects.
- Danger to the environment by leakage of dangerous liquids.
- Damage to facilities and buildings

2.4 Safety orientated working

The safety information‘s performed in this BTA, the existing national regulations to the accident prevention as well as possible internal working regulations, operating instructions and safety regulations of the operator are to be followed.

2.5 General safety information‘s for operator

If hot or cold machine parts lead to safety risks, these pats have to be guarded by the operator to avoid contact.

Guards of rotating parts (e. g. the coupling) must not be removed if the machine is working.

Leakage - e. g. on the mechanical seal, dangerous medias - e. g. explosive, poisonous, corrosive or hot, have to be drained in such a way that no risks for persons and the environment can occure. National legal regulations have to be observed.

Dangers by electric energy are to be excluded, details moreover see, e.g., in the regulations of the VDE (Germany) and the local energy supply enterprises.

2.6 Safety information‘s for maintenance, inspection and assembly works

The operator has to ensure that all maintenance, inspection and assembly work be carried out by qualified specialist staff, which has studied the BTA.

The accident prevention regulations are to be followed.

Work on the machine is only to be carried out if the machine is out of operation and the electricity is shut off. The description for putting the machine out of operation of this BTA must be followed.

Pumps or system who are used for dangerous/ harmful media have to be decontaminated.

After the finalisation of the work all safety equipment and guards must be reassembled.

Before start the instructions for first start up has to be followed.

2.7 Arbitrary rebuilding and production of spare parts

Rebuilding or changing of the machine is only after agreement with the manufacturer allowed. Original spare parts, accessories from the supplier serve the security. The use of other parts can cancel the liability.

2.8 Inadmissible operation

The safety of the machine is only by designated use, according to section 1 - General - of the BTA guaranteed. Limits of operation mentioned in data sheets or the order confirmation must not exceeded.

Quoted regulations:

DIN 4844, Part 1, Appendix 13 and 14 - safety marking and safety symbols W8 and W9

3. Transport and intermediate storage

3.1 Transport

The pumps are packed carefully according to the needs for a safe transport and to avoid damages.

3.2 Intermediate storage

The pump must be protected against entering of foreign matter. A storage in a humid environment and with changing temperatures has to be avoided, as that can cause condensation of water in the motor. Condensate can cause corrossion in the motor and damages on the winding. The warrantee expires if that happens.

4. Product description

4.1 General description

The drainage pumps series KEP are vertical centrifugal pumps with 2-blade channel type or free flow impeller for pumping of clear and dirty liquids. The casing must be submerged whereas the motor has to be non-submerged.

4.2 Construction

The motor for the KEP series is equipped with a fixed bearing at drive end to carry the thrust load of the pump. The shafts are connected with a sleeve coupling. The series KEPL has a ball bearing in the bearing bracket to take the thrust load. The motor is connected with a flexible coupling.The shaft is aligned by a sliding bearing in the casing cover, and for versions of 1,65 m and longer additionally in the intermediate bearing housing. The impeller is fixed by tolerance rings.

5. Arrangement and Installation

5.1 Installation

The pump must be placed on a rigid surface - concrete, brick stones, etc. - to avoid a unstable installation. In case of mounting into a complete system ensure that there is enough distance above the fan cover of the motor to allow sufficient air flow for the cooling. To low air flow can cause over heating of the motor.

Caution

The motor must be protected against environmental influence. If nexessary a protective roof has to be used. On request the motor can be equiped with a anti-condensation heater to avoid condensate in the motor.

5.2 Connections

The pump is equiped with a discharge flange according to DIN 2658.

Caution

The connection pipe must be connected without any tension to the pump to avoid damages.

5.3 Connection of motor

The power suppy must be identical with the voltage and frequency marked on the name plate. The connection of the motor must be carried out by a qualified specialist. The rules of the German VDE or national regulations are to be observed.

A use in systems with special safety requirements is only possible, if a qualified specialist integrates the necessary safety equipment.

The use in hazardous areas is not allowed.

6. Start up and removing from operation

6.1 Start up

Check pump, discharge line and electrical supply to correct connection.

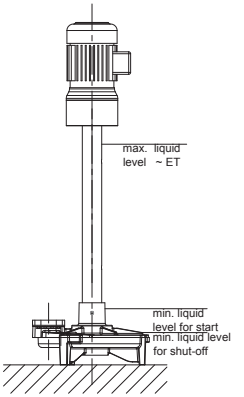
The power supply must be voltage free and protected against switching on before the connections can be checked!

Caution 

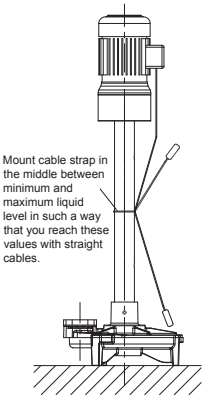
After the control works all safety guards have to be re-assembled!

The pump casing has to be submerged completely with liquid before first start-up. Dry running can create abnormal wear or can damage pump parts or the sliding bearing. Switching off must be done latest 100 mm above foot of pump. Switching on and off will be done either by float switch of pump or by control equipment at site. a correct working of control equipment has to be observed.

Skizze 1:
Liquid level



Skizze 2:
Adjusting of float switch



The operation manuals of the motor, switch gears and accessories must also be observed.

6.2 Removing from operation

After switching off valves in discharge line as far as existing have to be closed. Remaining liquid must be drained from the pump. If this liquid is dangerous the necessary safety rules have to be observed - especially if the media is corrosive, hot or dangerous for the personal or environment.

7. Maintenance

The pump has to be checked to easy turning - especially after longer standing still. The power supply has to be switched off and protected against switching on. Remove fan cover of the motor and rotate pump shaft by hand. The pump should rotate easily. If everything is normal the pump can be reassembled and started up again (see capture 6).

Caution

All work for changing of pump parts as described thereafter must be done only by a adequate trained specialist. The pump parts have to be cleaned from media by flushing.

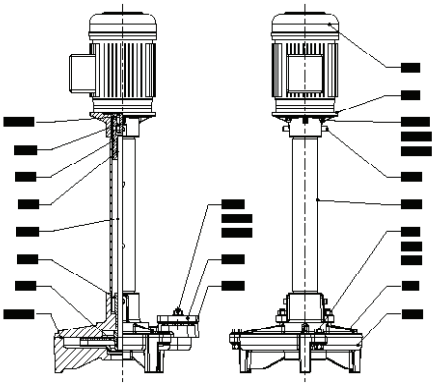
8. Failures

Failure	Reason	Removal
Pump does not turn	- blocked - Motor damaged - No power available	- Remove blockage, Control distance between wear plate and impeller. - Replace motor - Check connection line and fuses
Pump delivers no liquid	- Valve in delivery line is closed - Impeller blocked - Suction inlet blocked	- Open valves - Clean impeller - Check suction inlet and remove blockage
Flow to small	- Impeller partially blocked - Impeller worn out	- Clean impeller - Replace impeller
Absorbed power to high	- Duty point not correct - Foreign matter blocks the pump	- Adjust duty point - Remove foreign matter

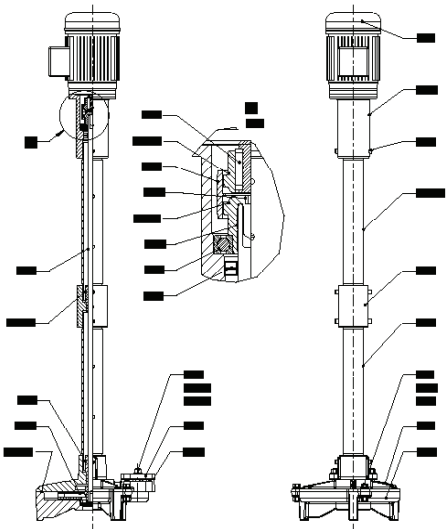
9. Sectional drawing and spare part list

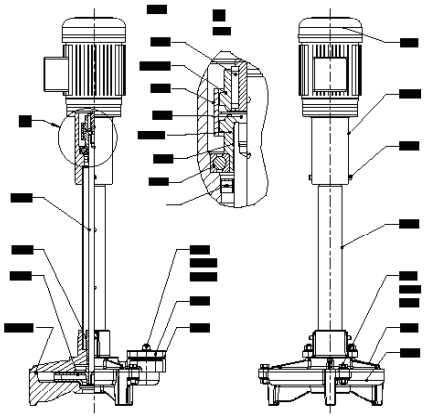
For ordering spare parts please mention the serial number from the name plate to avoid the delivery of wrong parts.

Execution KEP



Execution KEPL





Execution with intermediate bearing for mounting length 1,65 up to 2,65 m.

102	Volute casing
161	Casing cover
210	Shaft
230	Impeller
310	Sliding bearing
310.1	Sliding bearing
321	Ball bearing
330	Bearing bracket
341	Lantern
382	Bearing housing
400	Gasket
400.1	Casing gasket
421	Radial lip seal
515	Tolerance ring
554	Washer
554.1	Washer
707	Grease pipe
712	Column pipe
712.1	Column pipe
723	Threaded flange
731	tube fitting
732	Bracket
801	Motor
838	Float switch
849	Sleeve coupling
861.1	Coupling hub
861.2	Coupling hub
864	Coupling sleeve
901	Hexagon screw
901.1	Hexagon screw
902	Stud bolt
904	Hexagon socket set screw
904.1	Hexagon socket set screw
904.2	Hexagon socket set screw
904.3	Hexagon socket set screw
918	? screw
920	Hexagon nut
920.1	Hexagon nut
940	Key

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