

## Key facts in advance



pump head *on choice*  
*available with*  
handle:  
*item no. 0-33130-001*

handwheel  
*item no. 0-33131-001*



- Without an additional K&K valve combination, the pump can only be connected to a **pressureless** water supply (ground water, open basin, water course)
- Pump fitting: **1 ¼ in – outer thread**
- cross section of water supply towards pump: **minimum DN 40**
- pipe installation in **PVC rigid pipe** (Ø 150 mm)
- **maximum difference in height 7 m** between water level and pump outlet
- Create **air- and watertight** connections
- Adjust discharge flow according to the amount of water supplied and according to the flow rate required.
- **Hand over to the playground operator the winter season accessory and special tools.**
- **Transfer documentation relevant to the local standard (invoice, installation instructions, maintenance instructions)**
- **Store upper part of the pump during the winter season.**
- If the water supply to the pump (through a clock timer or similar) is interrupted, the pump handle must be safeguarded against operation (for example by the **K&K pump latch**, item no. **1040639**). This prevents a handle setback due to an increasing negative pressure.

## **Installation instructions**

for K&K Water pumps with a pressureless water supply

### **Purpose and function**

The *K&K water pump* is a mere suction pump operated by the upward and downward movement of the piston. The upward movement causes a negative pressure which results in raising the water column. With the downward movement that follows, water runs through the pump piston and can flow off through the pump outlet with the next stroke.

The *K&K water pump* has been designed for **2 different types of operation**:

#### **1. Pressureless water supply**

Connection to a **pressureless water supply** e.g. ground water, open basin, water course.

**The instructions at hand exclusively refer to that type of operation!**

#### **2. Water supply under pressure**

Installation to a public **water supply network** e.g. a drinking water supplier

**In that case, an additional *K&K valve combination* (item no. 0-33190-000) is mandatory!** The corresponding installation instructions will be furnished enclosed to the valve combination.

### **Requirements**

- Without a *K&K valve combination*, the water pump can take water from any **pressureless** supply (ground water, pond, cistern).
- cross section of water supply towards pump: **minimum DN 40**
- *K&K water pump fitting*: **1 ¼ in outer thread**
- Water supply should be equipped with a **water filter** and a **check valve**.
- Water pipes and connections should be suitable for **drinking water**, create **air- and watertight** connections.
- The maximum pump head is **7 m** referring to the difference in height between **water level** and **pump outlet**.
- For an air- and watertight connection, the pipe must be laid most **flexibly**. We recommend to use e.g. a PVC rigid pipe **Ø 150 mm**. Reinforced hoses or similar are not appropriate for water suction and do therefore **not** serve as a flexible element.

## Fastening

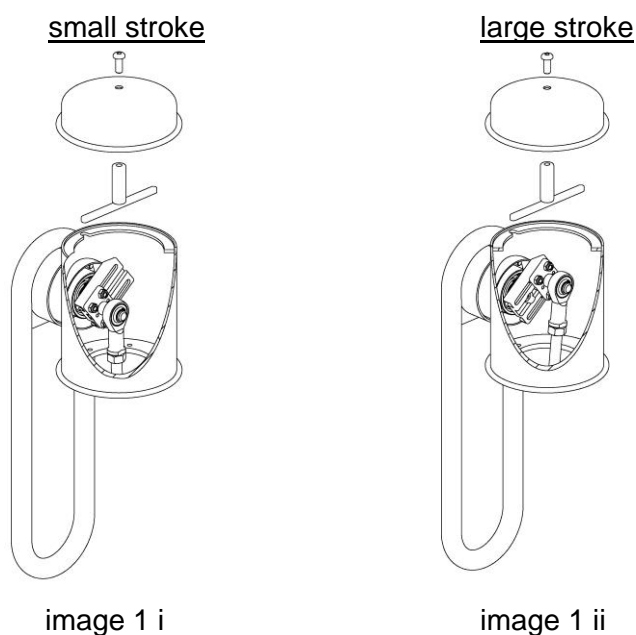
1. Define a location for the *K&K Water pump* considering the space requirements or rather the specifications in superordinate installation instructions such as water play structures or combinations.
2. Create an appropriate fastening method for the *K&K Water pump*.
  - a. Dowelling
  - b. Installation on K&K Flange tube (item no. 1040065)
  - c. Installation on K&K ring-shaped foundation (item no. 1040173)
  - d. Installation on K&K platform (item no. 033150) or similar platforms

also see: „**Fastening options for K&K water pump**“

3. Create an **air- and watertight** connection to the pump.
4. *K&K water pump* fastening by means of the four holes in the bottom flange of the pump column.

## Installation and operation

1. Loosen the security screw in the centre of the pump head (SecurityTorx TR45 - approximately 5 turns). For a cap removal, slightly lift it and turn the screw until the clamping device fits into the extraction slots.
2. Fill the pump head with water until it leaves the pump outlet.
3. Activate handle/handwheel until the pump continuously supplies water. Keep hands away from the pump mechanism – **danger of injury!**
4. Adjust discharge flow/pump resistance required as follows:
  - a. Loosen the four clamping nuts (M8 – spanner size 13 mm) on the eccentric slide ( 1-2 turns).  
**Do not unscrew them completely!**
  - b. Displace the eccentric slide to the position wanted (see image 1).
    - i. small stroke = low flow rate = little pump resistance
    - ii. large stroke = high flow rate = high pump resistance
  - c. Fasten the four clamping nuts.



*exemplary illustration for both  
pump heads available  
(handwheel on choice)*

5. Reinsert clamping device, position pump head cap and fasten it with the security screws.

## Handover to the pump operator

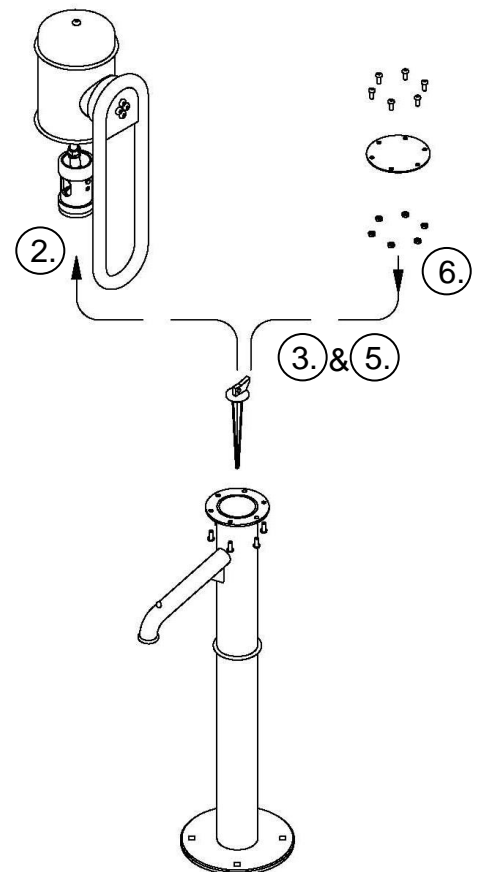
- Documents** Any device-specific documentation, which is or might be useful for the safety management according to (DIN) EN 1176-7 such as **invoice, delivery note or order confirmation, installation instructions and maintenance instructions** must be forwarded (original or copy) **to the playground operator**.
- Winter season set** All accessory parts and special tools included with the delivery of the device, especially the **winter season set**, the **tool** for secured screws and the **accessory for the K&K valve combination** must be forwarded **to the playground operator**.

## Winter season handling

Due to a frost damage risk, the pump head must necessarily be dismantled and stored for the winter season. Otherwise, or by means of chaining the handle, K&K will not accept any responsibility for a damage caused hereby.

Before frost period:

1. Keep at hand supplied **winter cover accessory**.
2. Unscrew pump head and take it off.
3. Lift off valve from its seat (visible in pump column after taking off the head).
4. The remaining water between pump and water level flows back down to water level
5. Reinsert the valve into its seat.
6. Fasten the supplied **winter cover plate** on top of the pump column and, where appropriate, store the pump head.



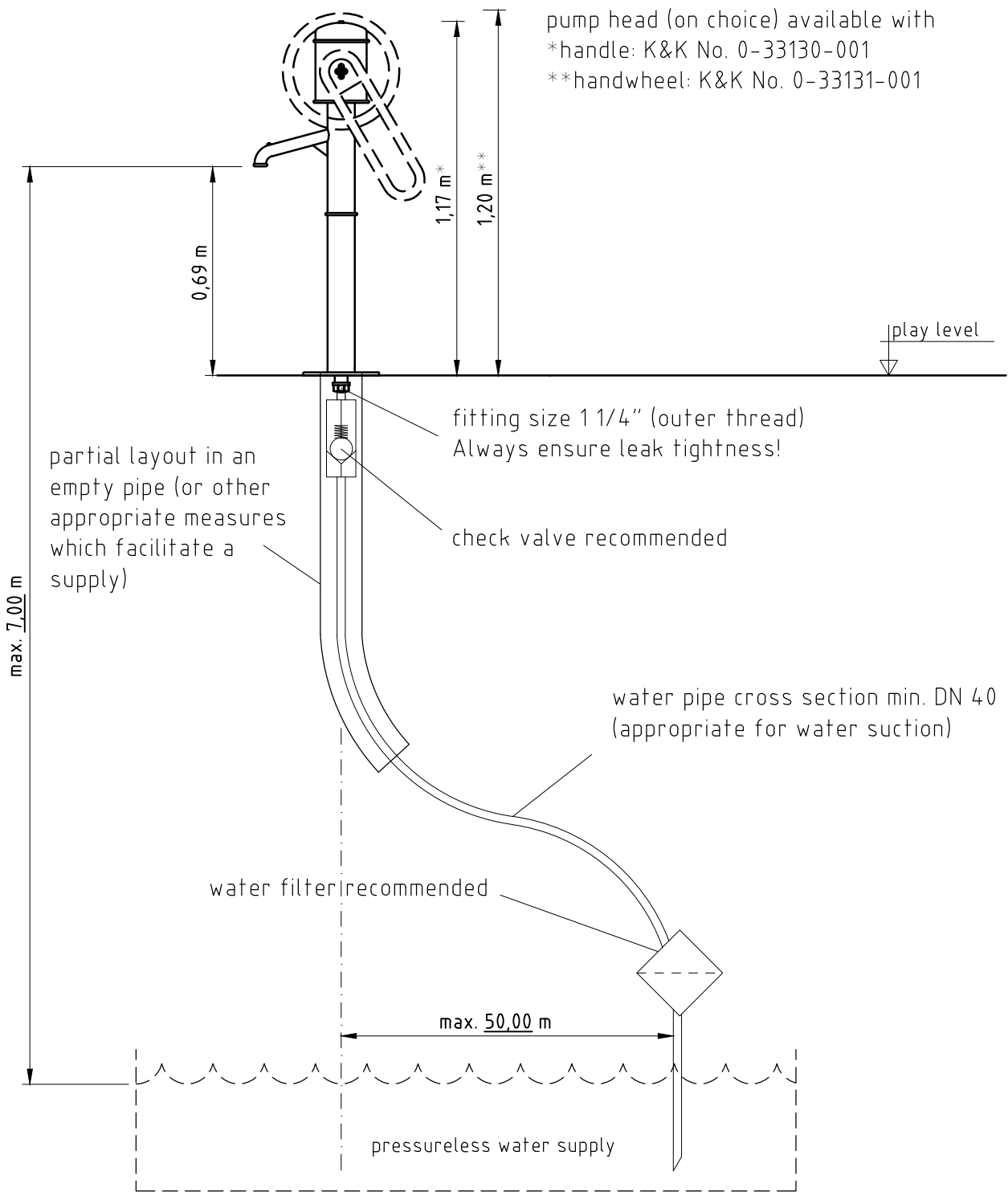
After frost period:

1. If the leather gasket at the bottom of the piston housing has hardened during storage; soak it for 24 hours before reinstallation.
2. Unscrew and remove winter plate from water pump column.
3. Set water pump head onto water pump column and fix screws.
4. Restart pump operation as described in chapter „Installation“.

*exemplary illustration for both  
pump heads available  
(handwheel on choice)*

## Defect analysis

Defect	Cause	Remedy
1. Pump handle strikes back	<ul style="list-style-type: none"> <li>Installation dimensions (maximum distances) neglected: maximum difference in height between bottom edge of pump outlet and water level <math>\leq 7</math> m</li> </ul>	<ul style="list-style-type: none"> <li>Check distances according to technical drawing</li> </ul>
	<ul style="list-style-type: none"> <li>Pipes blocked, distorted or squeezed (e.g. by a vehicle pass over)</li> </ul>	<ul style="list-style-type: none"> <li>Check pipes for free flow</li> </ul>
	<ul style="list-style-type: none"> <li>Installation with a clock timer: pump operation in switch-off time</li> </ul>	<ul style="list-style-type: none"> <li>Adapt circuit times (necessarily add K&amp;K Pump latch - item no. 1040639)</li> </ul>
2. The pump does not take water and can be operated with unusually low effort	<ul style="list-style-type: none"> <li>Pump not filled with water</li> </ul>	<ul style="list-style-type: none"> <li>Replenish pump head, also see „Installation“</li> </ul>
	<ul style="list-style-type: none"> <li>Pump draws air due to leakage in pipe system</li> <li>frost damage within the pump</li> </ul>	<ul style="list-style-type: none"> <li>Check pipe system and pump housing for leaks</li> </ul>
	<ul style="list-style-type: none"> <li>Hardened or worn leather gasket at pump piston</li> </ul>	<ul style="list-style-type: none"> <li>Soak leather gasket for 24 hours or replace it</li> </ul>
	<ul style="list-style-type: none"> <li>Water level has fallen below suction opening</li> </ul>	<ul style="list-style-type: none"> <li>Lengthen the pipe to lower the position of the suction opening</li> <li>raise water level</li> </ul>



pump head (on choice) available with  
\*handle: K&K No. 0-33130-001  
\*\*handwheel: K&K No. 0-33131-001

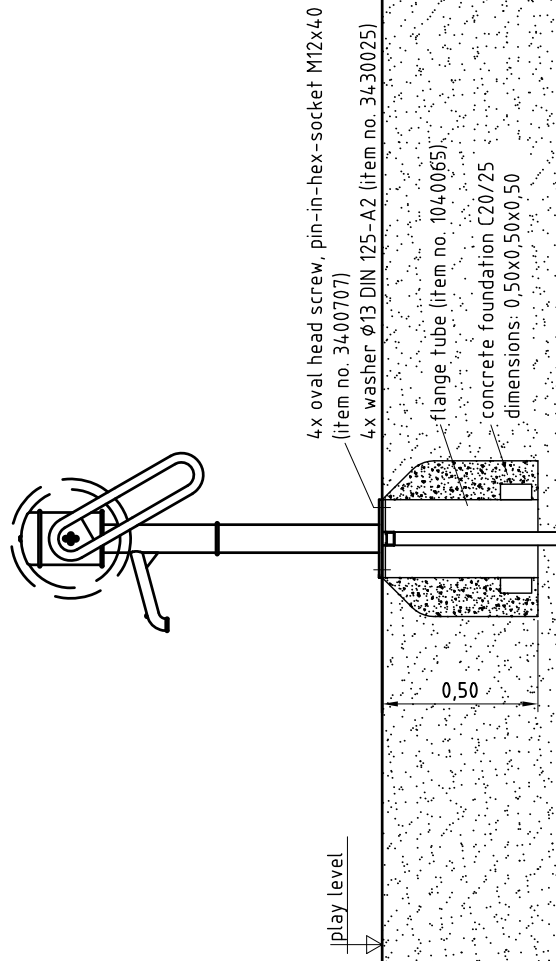
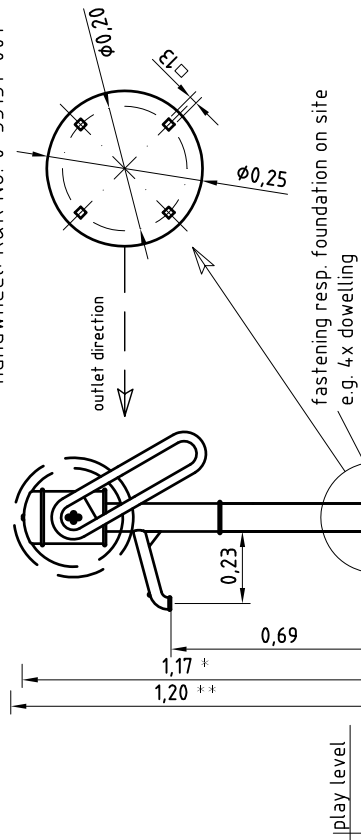
# Installation

Item No.	Description	Scale	Date	Page
see above	K&K (Suction) water pump	1:20	12/16 EB	1

Dowelling

K&K Flange tube assembly

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Assembly on K&K ring-shaped foundation

Platform installation (e.g. K&K)

