KEMPER hygiene system KHS

„Water has to flow"

To establish hygienic conditions in accordance with local regulations by forced flow and targeted flushing in drinking water systems.

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Maintaining drinking water hygiene by periodic flushing

Periodic flushing must be guaranteed in hospitals, doctors' surgeries and hotels, regardless of whether or not rooms are occupied.[1]

According to the German drinking water ordinance, drinking water is generally "water for human consumption". The operator of the drinking water system must observe the requirements for the water intake, which concern both hot and cold drinking water.

For the operator of the domestic installation, the obligation to observe the generally accepted rules of technology comes from the German drinking water ordinance, § 4, para. 1 in conjunction with § 3 no. 2 letter c.

It is certain that a preventive strategy rather than a reactive strategy is the only right way.[1]

Even before damage occurs, personal responsibility should be taken for carrying out the recommendations for prevention and control.

For this purpose, it is essential that samples are taken from the drinking water system in the areas of the cold and hot water, in order to gain a comprehensive impression of the quality of the drinking water at the sampling points.

(1) Federal health gazette, health research – health protection
2006, 49:681-686DOI 10.1007/s00103-006-1284-X
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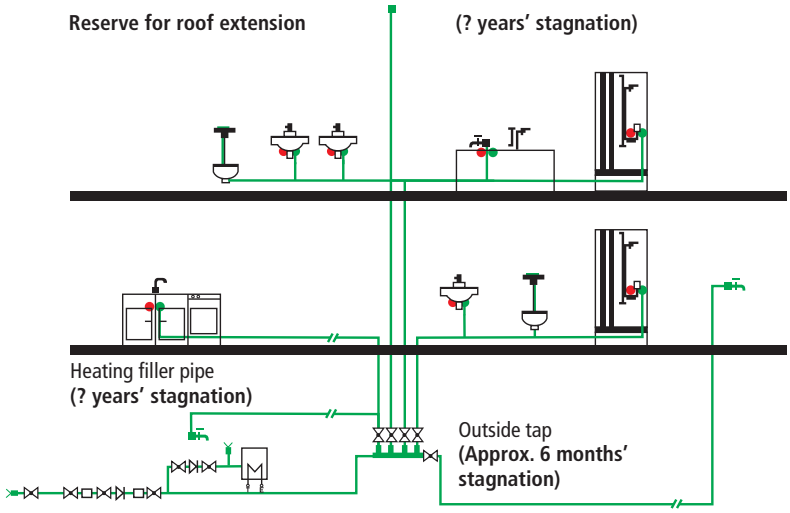
This is how installations have been carried out in the past...

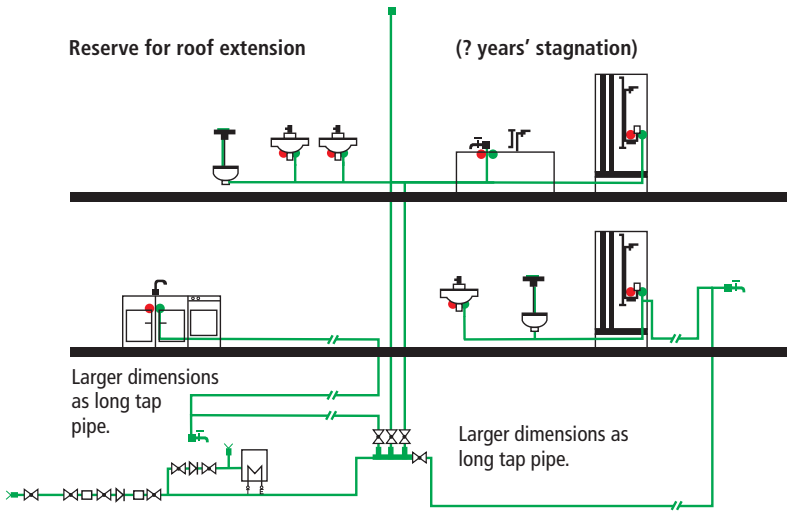
Previously, in houses and in the public sector buildings (hotels, hospitals, doctor surgeries etc), manual flushing was the only possibility thus building on existing stocks and allowing stagnation to be a real threat.

Ordinary instillation in a detached house, with all the familiar flaws, Stagnation over decades with all the risks for newborn and the elderly.



Drinking water cold installation with stagnation in rarely used connecting pipes. Transmission line installation.

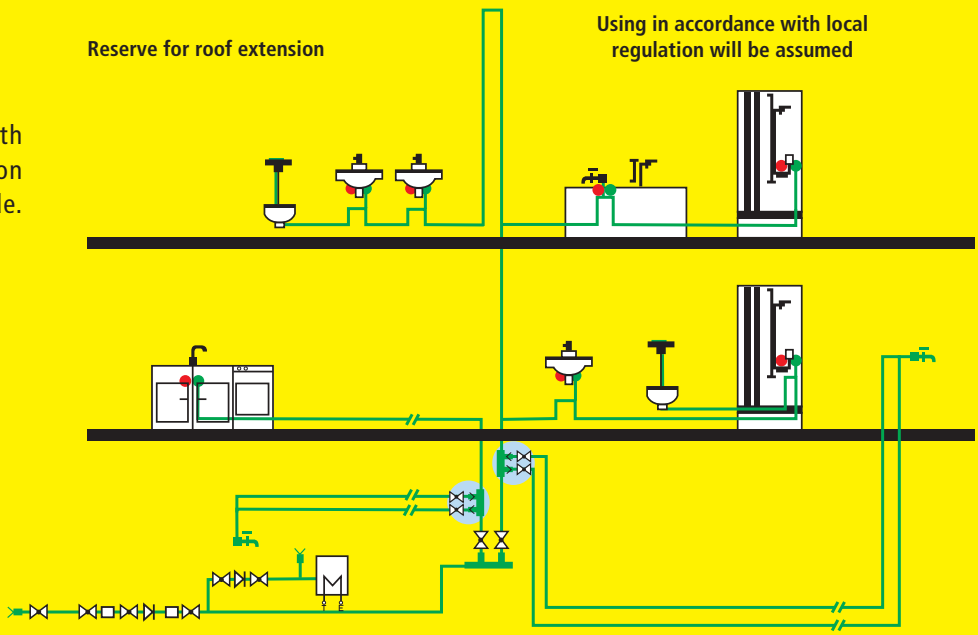
Improvement installation but there are still flaws. Depending on the length of the pipe when looping through, larger dimensions must be used. However, this is often not possible with ordinary flooring structures.



Drinking water cold installation with no stagnation in rarely used connecting pipes. Long tap pipe. Increased construction outlay.

The Solution

Hygienically safe installation with KEMPER KHS-Multi-Circ Distribution Unit and an innovative pipe guide.

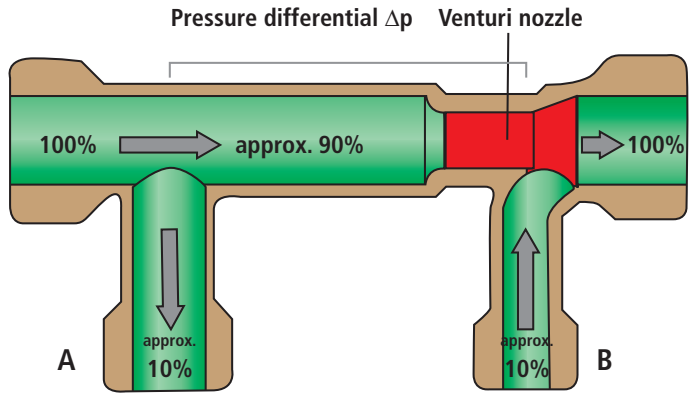


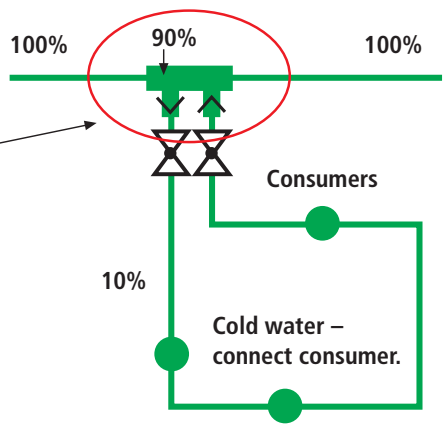
Drinking water cold installation with no stagnation in rarely used pipe sections.

Giovanni Battista Venturi

Brilliantly simple – simply brilliant. The principle discovered by Giovanni Battista Venturi still meets all requirements today. During his productive period (*1746 in Bibbiano, † 1822 in Reggio nell´Émilia) he also developed the Venturi pump and the Venturi nozzle.

KHS-Multi-Circ Distribution Unit





Automatic flushing

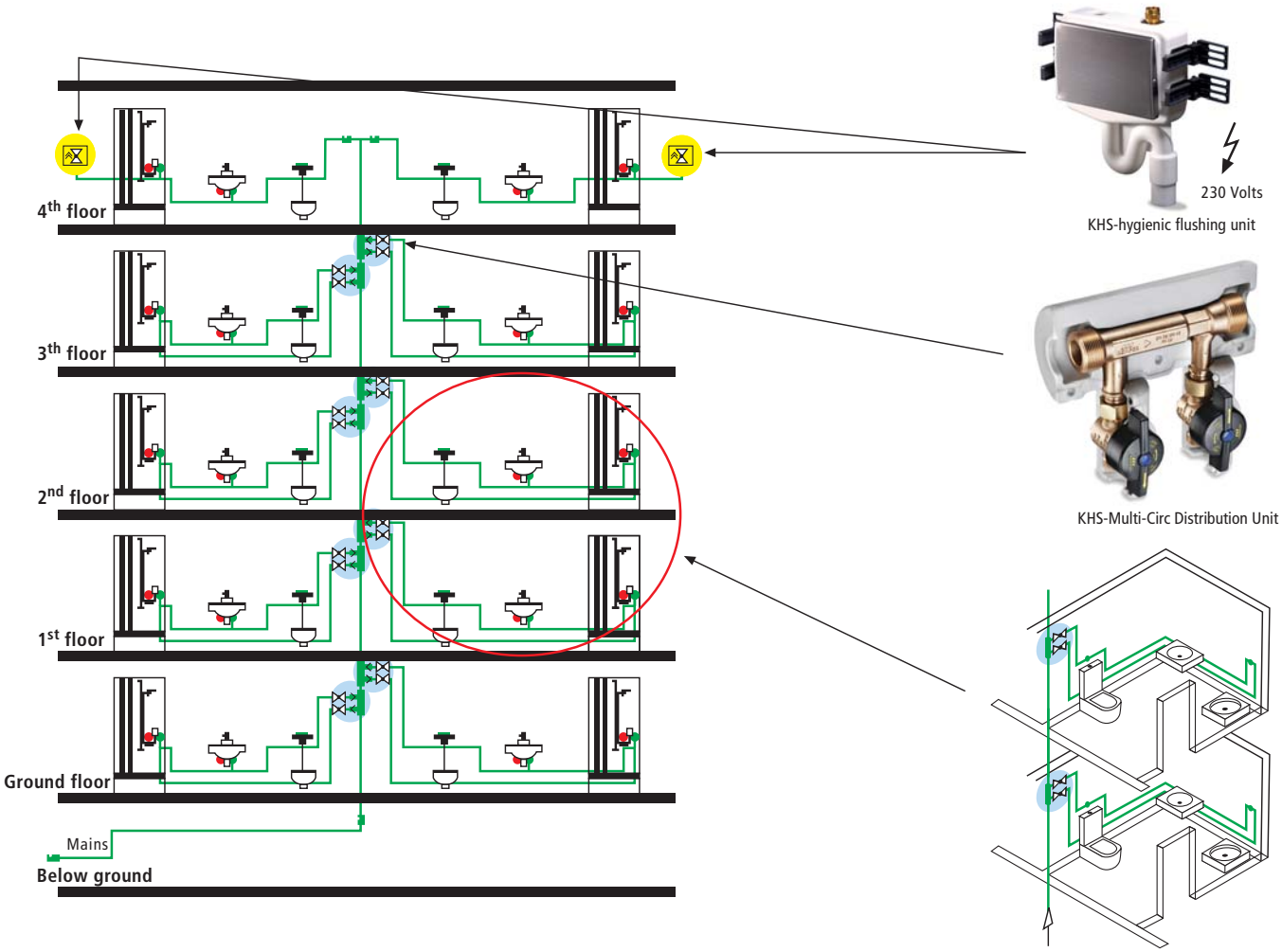
The Venturi principle: the lower pressure in the nozzle causes a pressure differential. This pressure differential creates a flow from the ring pipe into the wet cell.

The innovation of the KEMPER hygiene system, KHS, is the KHS-Multi-Circ Distribution Unit. The action principle of the KHS-Multi-Circ Distribution Unit is based on the principle of the Venturi nozzle technology. The minimal pressure difference between flow pipe A and return pipe B causes a forced flow to the wet cell.

It is driven by water extraction adapted from the KHS-Multi-Circ Distribution Unit. The total water content of the ring pipe is thus exchanged and the drinking water temperature kept low.

The Ideal

Forced-flow circulation of sanitary blocks when not being used as intended – no consumption meter in floor



KEMPER KHS-hygienic flushing unit and KHS-Multi-Circ Distribution Unit in the ascending pipe

Using in accordance with local regulations

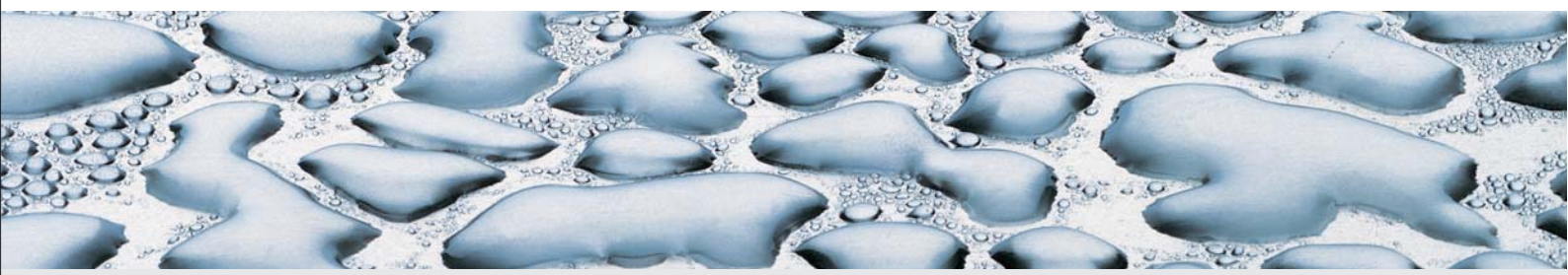
The combination of KHS-hygiene flushing at the end of the supply pipe and KHS-Multi-Circ Distribution Units in the rising pipes causes a flow through the floors below, thereby maintaining hygiene in accordance with local regulations.

Goals of the KEMPER hygiene system

- Securing and maintaining the drinking water quality at the sampling point in accordance with the German drinking water ordinance.
- Preventive measures to avoid stagnation in the drinking water system by the production of correct operation at all times.
- Forced flow and continuous exchange of water by means of targeted construction of the piping system with intelligent pipe routing.
- Reduction of personnel and operating costs through controlled flushing measures carried out in an efficient manner.

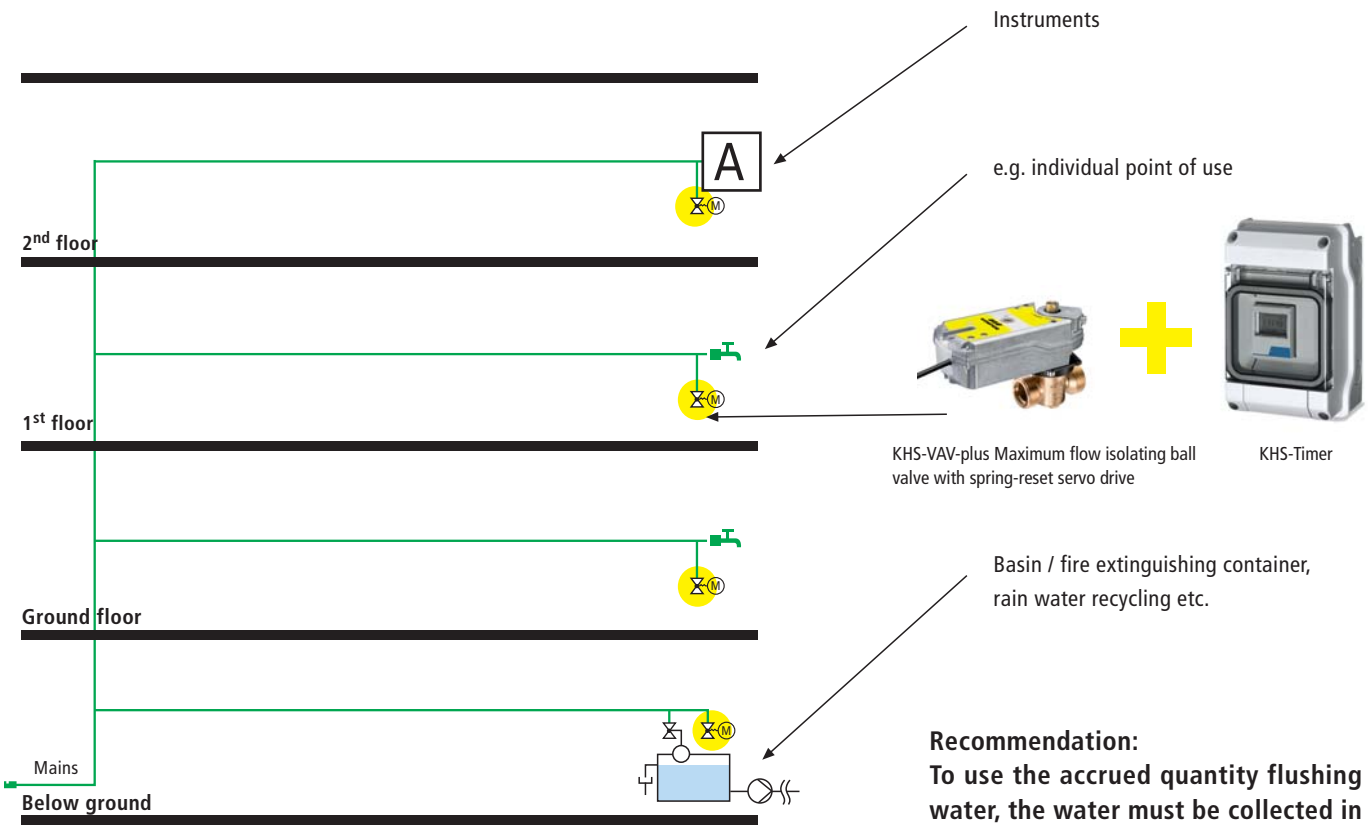
First aid on existing buildings

Gaining control over stagnation in existing systems is much more difficult than in new systems. The first and also most effective measure in existing systems is timer-controlled pipe flushing. Thus, schools, sports facilities and hotels can be quickly and effectively freed from stagnating water in terminal pipes. In the existing stock of fire extinguishing pipes, flushing with DVGW-approved valves can be carried out with no pressure shock. Here, the different sizes of the valves guarantee a volume flow of 20-50% of the calculated flow in the pipes to be flushed, up to DN 100.



Drinking water hygiene by flushing of terminal pipelines

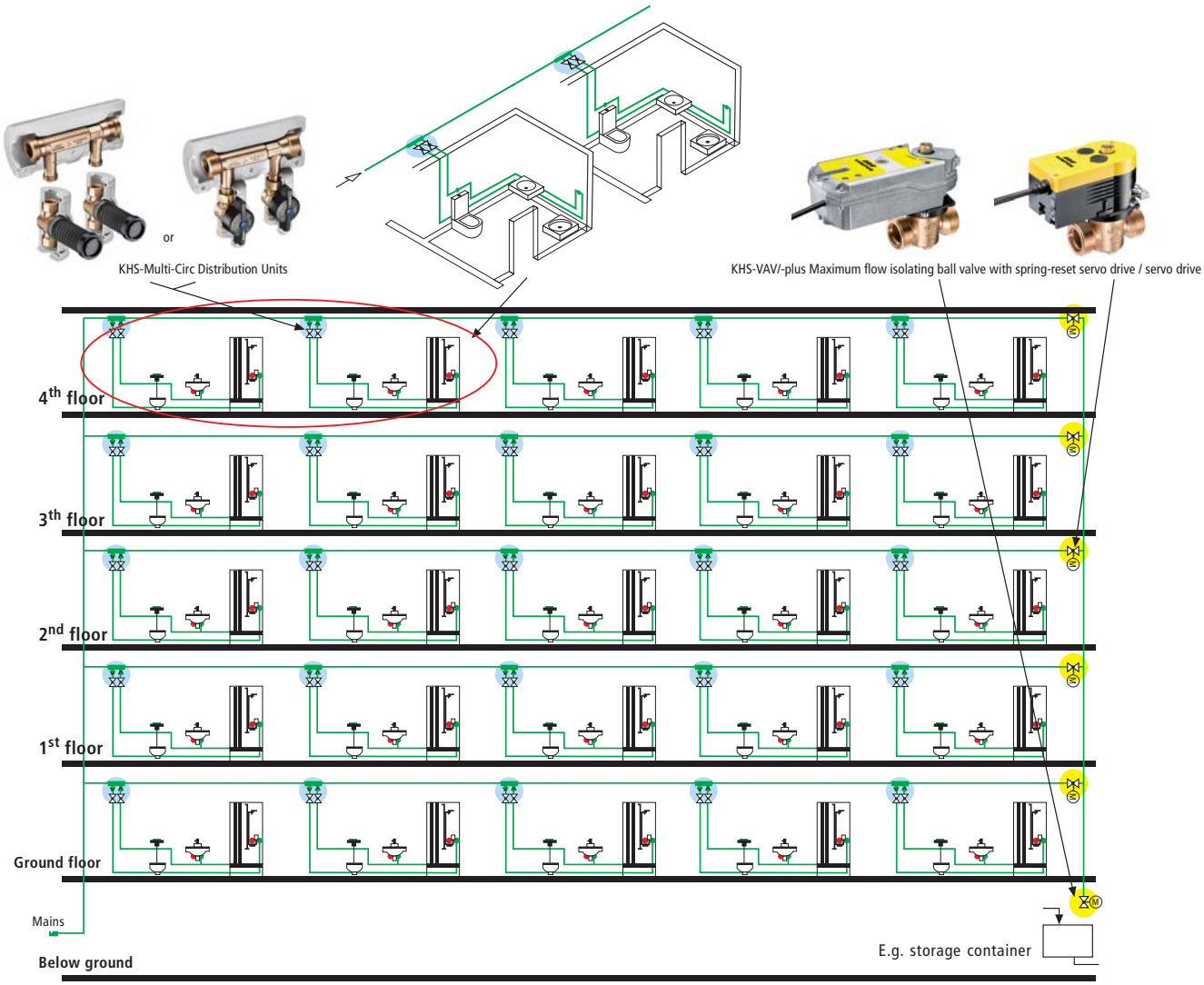
It is certain that a preventive strategy rather than a reactive strategy is the only right way.



Recommendation:
To use the accrued quantity flushing water, the water must be collected in a storage container (e.g. rainwater usage facility, irrigation of outside facilities etc).

Operating methods

Whether it is controlled by temperature, volume or time, the KEMPER KHS always offers the right approach. Bigger challenges need bigger solutions. As such, flushing with the hygiene flushing units is no longer effective for large systems. Here, intelligent valve technology is required.



The operator can choose from three operating methods

1 **The time controlled flushing process** of the drinking water system, by means of predefined flow times (e.g. max. 5 flushing intervals in one day or individual flushing intervals on various days of the week within one week).

2 **The volume controlled flushing process** of the drinking water system, by means of predefined flow quantities at known required flow volumes.

3 **The temperature controlled flushing process.** Here, a reference temperature (e.g. on the drinkink water cold service pipe) is constantly compared with several temperatures in the pipe system. The system control triggers flushing if the temperature differential exceeds the actual nominal temperature differential entered.

Valve, measuring and control technology of the KEMPER hygiene system – the products

All products DVGW certified

1. KHS-hygienic flushing unit with control valves and cover figure 686 03

2. KHS-Multi-Circ Distributor Unit for concealed application within a washing facility, complete with KHS-VAV Maximum Flow Isolating Valve and insulating shell figure 640 00/01/03/04

3. KHS-Multi-Circ Distribution Unit in a concealed application e.g. shafts or corridor areas, complete with KHS-VAV Maximum Flow Isolating Valve and insulating shell figure 640 02/05

4. KHS-VAV Maximum flow isolating ball valve with servo drive figure 686 00

5. KHS-VAV-plus Maximum flow isolating ball valve with spring-reset servo drive figure 686 01, Orifice Figure 687

6. KHS-Multi-Tee temperature sensor valve Pt 1000 with male union figure 629 0G

7. KHS-vortex flow sensor with male threads figure 638 00

8. KHS-Drain with overflow monitor DN 20 - DN 32 figure 688 00

9. KHS-Logic Control System including configuration software and control modules for the sensors and actuated valves figure 686 02 001

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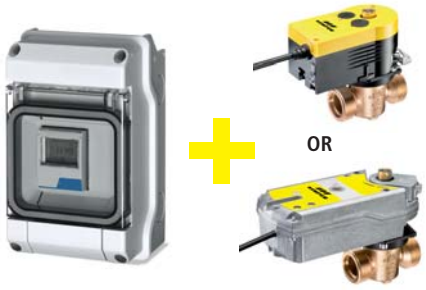

10. KHS-Timer Set
with VAV with servo drive or
with VAV with spring-reset servo drive

Includes: digital clock timer and Maximum flow isolating ball valve with servo drive 230 V

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