**GEBERIT**

GEBERIT HYGIENE SYSTEM

# PRESERVING QUALITY DRINKING WATER

KNOW
HOW
INSTALLED

# WE SET **ALL LEVERS IN MOTION**

When it comes to creating an efficient concept for drinking water hygiene in buildings, Geberit offers a comprehensive solution that really does tick all the boxes. The aim here is to offer customised solutions to maintain the drinking water quality in every sanitary installation and for every type and frequency of use.

The Geberit Hygiene System makes a major contribution to the protection of drinking water quality, which extends right from the planning and installation phase through to the operation of sanitary facilities. The system includes suitable, hydraulically optimised piping systems, hygiene flush units, sensors, and intelligent tools for controlling and networking sanitary appliances during operation.

## PROTECT OUR DRINKING WATER. PRESERVE THE FUTURE.

Drinking water is our most valuable natural resource. People use and consume it every day as a matter of course and count on it to be of good quality. The protection and provision of this precious resource is a vital aspect of the sanitary installation and an essential task for all those responsible for it. This is precisely why Geberit works on its solutions day in, day out to ensure that drinking water is always readily available both now and in the future.

**00** **ALL OPTIONS FOR LARGE FLUSH VOLUMES**
Geberit HS10 / HS30 / HS50 hygiene flush unit

**00** **LOCAL CONNECTION**
Geberit concealed cistern with HS30 / HS50 hygiene flush unit

**00** **WHEN TIME IS OF THE ESSENCE**
Geberit HS01 hygiene flush unit

**00** **WHEN A SIMPLE RETROFIT IS ALL IT TAKES**
Geberit HS05 hygiene flush unit

**00** **DUAL USE IN NON-RESIDENTIAL SANITARY ROOMS**
Control electronics

**00** **DRINKING WATER REPLACEMENT UNDER CONTROL**
Geberit Control App

# INDEX

# ATTENTION
# HAZARDOUS AREA

Our drinking water is not sterile; it contains microorganisms that form biofilms. These do not normally pose any problems or affect the quality of the drinking water. Nevertheless, biofilms can also form a breeding ground for germs that are hazardous to health.

## STRINGENT CHECKS
Water is a natural source of nutrition and, depending on the topographical location and geological availability, it can be obtained from a wide variety of sources, such as rivers, lakes, reservoirs and groundwater.In addition to various microorganisms, drinking water also contains nutrients and minerals. Water suppliers continuously monitor it for chemical, microbiological and other indicator parameters such as odour and colour – and it is the world's most strictly regulated source of nutrition. Suppliers have to ensure that our drinking water provided through the domestic water supply is of high quality and will not pose any threat to health.

## OPERATOR RESPONSIBILITY
Responsibility for water quality in the domestic installation lies with the operator of the building. If the water warms up or is left to stagnate for extended periods of time, bacteria can breed and disrupt the natural balance of the microorganisms in the water. This can pose a number of health risks – particularly for vulnerable people. The main protagonists among water-borne, potentially infectious bacteria are Legionella pneumophila and Pseudomonas aeruginosa.

## WHY BACTERIA GROW
Bacteria multiply in drinking water systems when they find ideal conditions: the right nutrients, the right temperature and the right amount of time.

**LEGIONELLA PNEUMOPHILA**
Legionellosis can cause severe pneumonia or high fever (Pontiac fever). Infection occurs through inhalation of the aerosols – for example,in the shower.

**PSEUDOMONAS AERUGINOSA**
These pathogens can cause gangrene and can be resistant to antibiotics.

# AVOID AT ALL COSTS

## STAGNANT WATER
Unused pipes provide good conditions for bacteria to grow, as the stagnation gives bacteria enough time to multiply. These can then be carried into other parts of the piping system by the flow in the used pipes. Stagnation must therefore be avoided at all costs.
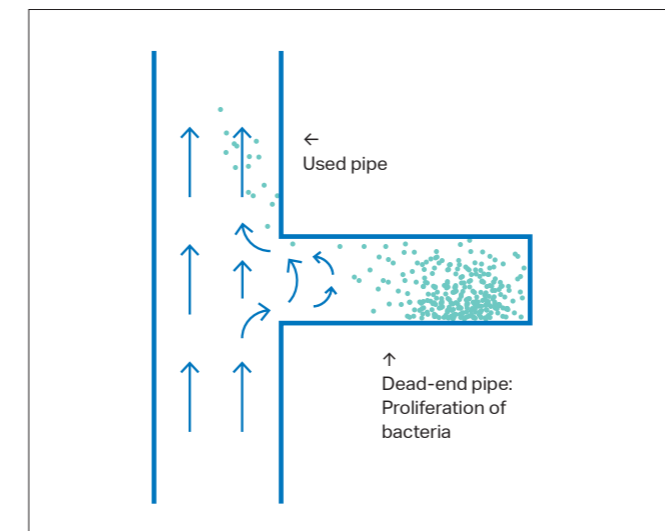
## LUKEWARM WATER
The proliferation of legionella*) increases with increasing temperature up to a maximum point.

**Theoretical calculation example:** At 40 °C, legionella double around three times more frequently per time unit than at 25 °C. Instead of doubling twice from 1 to 4 at 25 °C, the legionella double six times from 1 to 64 at 40 °C.



Used pipe

Dead-end pipe: Proliferation of bacteria
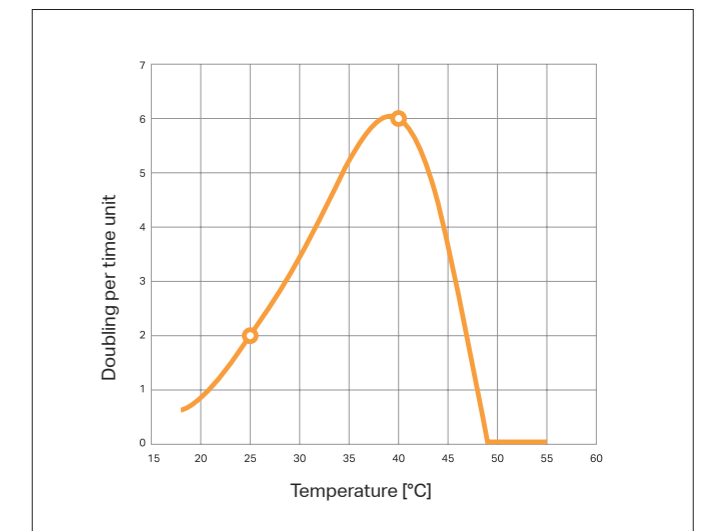


*) Graphic adapted from the article: Hochstrasser, R., Hilbi, H. (2022) The Lqs-LvbR Regulatory Network Controls Temperature-Dependent Growth Onset and Bacterial Cell Density. Vol. 88, No. 5 (created on behalf of Geberit)

# TEMPERATURE-DEPENDENT FLUSHING

VDI 6023-1 requires a complete water replacement every 72 hours and cold water temperatures not exceeding 25°C[1] (orange line in the graphic). In practice, however, it is not always possible to avoid temperatures in the critical range.

## THE TEMPERATURE-DEPENDENT FLUSH INTERVAL
A temperature-dependent flush interval (blue dashed curve) can be calculated based on the measured multiplication rates[2]. In accordance with VDI 6023-1, it is assumed that a flush interval of 72 is sufficient at 25°C ❶. For higher temperatures, the flush interval is calculated in such a way that the legionella can multiply equally frequently during this time. This results, for example, in a flush interval of 46 h at 29°C ❷. In this way, an increased risk of contamination can be avoided if the cold water temperatures cannot be avoided. Also, according to a research report by the DVGW, short-term temperature increases to over 25°C do not immediately lead to high legionella findings[3].



- - - According to VDI 6023-1
❶ Temperature-dependent flush interval
❷ 72 h at 25°C
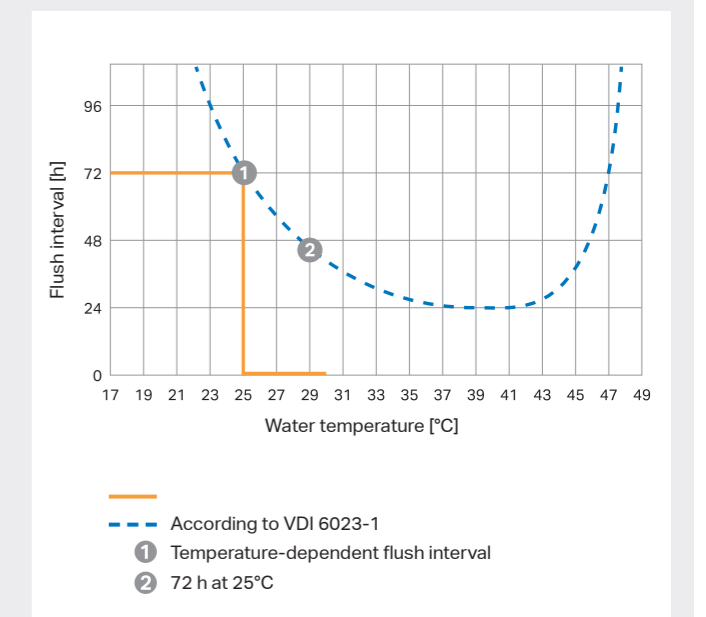
[1] After 3 litres or after 30 seconds with the outlet tap fully open
[2] Hochstrasser, R.; Hilbi, H. (2022): The Legionella Lqs-LvbR Regulatory Network Controls Temperature-Dependent Growth Onset and Bacterial Cell Density. Applied and Environmental Microbiology, Vol. 88, No. 5 (created on behalf of Geberit)
[3] DVGW research report, funding code: W201629

# ALL ASPECTS
## AT A GLANCE

Stagnation in the water supply line represents the biggest challenge for drinking water hygiene. Lukewarm stagnant water poses real health risks.
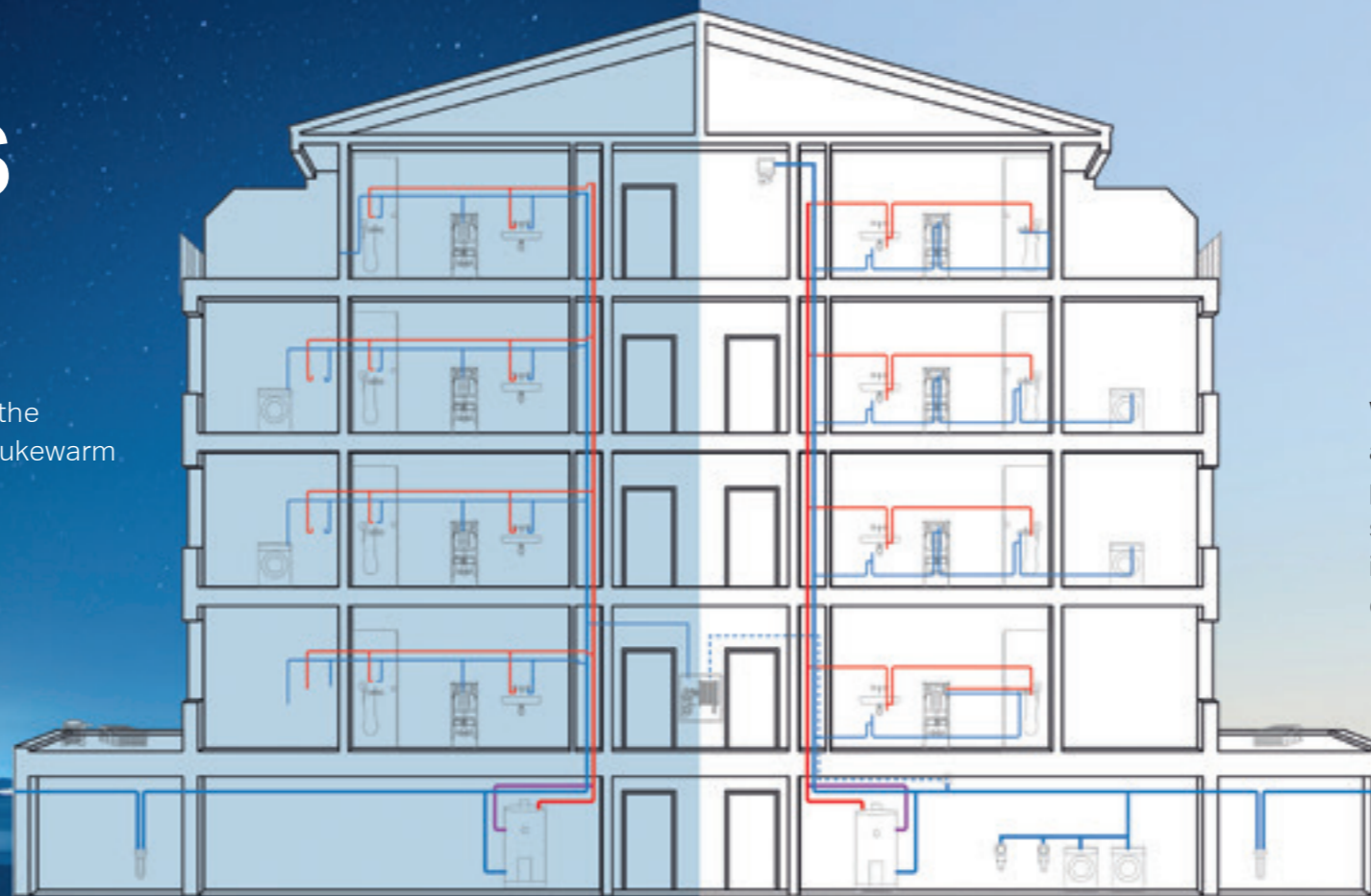
With the right methods and measures, problems can be avoided. This starts with needs-based planning and professional installation, and continues with the sustainably appropriate operation of sanitary installations. The aim is to provide hygienically perfect drinking water at the points of use.

## ATTENTION! HAZARDOUS OPERATION!

**INTERRUPTION OF USE AND CONVERSION**
In buildings with irregular use patterns, such asholiday homes, the water becomes stagnant due to the lack of use of the facilities.

**NON-INSULATED PIPELINES**
Poorly insulated cold-water pipes can become warm, while poorly insulated hot-water pipes can become too cold.

**UNSUITABLEFORHYGIENIC INSTALLATION**
Uncertified system components can lead to problems when it comes to ensuring a clean drinking water installation.

**INSUFFICIENT MAINTENANCE**
System components that are not maintained (such asfilters) can lead to hygiene problems.

**PIPE DIMENSIONS**
Unnecessarily large pipe dimensions result in insufficient water replacement.

**INITIAL FILLING**
If microbially contaminated water is used in the initial filling, the facility is contaminated from the very start.

**SOILED SYSTEM COMPONENTS**
Dirt can easily enter unprotected pipes and other components on building sites.

**DEAD-END PIPES**
Water stagnates in pipe sections that are not used or used rarely.

**EXTINGUISHING WATER PIPES**
There is a risk ofstagnationat points of use for extinguishing water in the drinking water installation.

**TEMPERATURE OF THE HOT WATER**
Lowering the hot water temperature for energy-saving reasons can lead to hygiene problems.

## SOLUTIONS FOR RELIABLE OPERATION

**HYGIENE FLUSH UNITS**
Automated flushes prevent extended periods of stagnation in the pipe system. Management of several hygiene flush units with connectivity option.

**CORRECT INSULATION**
Drinking water pipes must be insulated for energy and hygiene reasons.

**TESTED CONSTRUCTION PRODUCTS**
Geberit Supply Systems and products for drinking water hygiene fulfil hygienic requirements and are certified by the German Technical and Scientific Association for Gas and Water.

**REGULAR MAINTENANCE**
The system components are regularly maintained and inspected.

**AS BIG AS REQUIRED**
Pipe diameters dimensioned for their actual use.

**CLEAN START**
Always use hygienically perfect drinking water for the initial filling.

**CLEAN SYSTEM COMPONENTS**
Pipes and fittings from Geberit are protected against dirt by their packaging and other measures.

**EVERYTHING FLOWS**
Looped drinking water pipes and a frequently used sanitary appliance at the end.

**EXTINGUISHING WATER PIPES**
Backflow into the drinking water installation is prevented by suitable extinguishing water connection points.

**SAFE HOT WATER TEMPERATURES**
Hot water temperatures below 55°C are to be avoided in central water heater systems.

# SYSTEMATICALLY
# AVOIDING STAGNATION

Regular rinsing of the piping system and installations is key to avoiding problems with drinking water hygiene. For this to be achieved in an efficient and resource-saving manner, a multi-stage hygiene flush management system can be used, which is oriented to suit individual needs.

## STAGE 1
## CORRECT PIPING
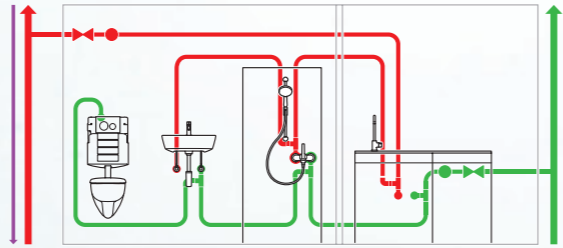
★

1. Optimised pipe installation

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- Smallest possible pipe diameter
- Looped pipe installation on the floor with a frequently used consumer at the end of the pipe
- Thermally decoupled pipe layout on the floor
- Separate boxes for hot potable water (PWH, PWH-C) and cold potable water (PWC)
- Proper insulation of the pipelines (PWH, PWH-C, PWC)

**Benefits**
- Low pipe contents
- Short draw-off times
- Low risk of stagnation
- Reduction of the thermal load on the cold-water pipe

## STAGE 2
## REGULAR FLUSHING

★ ★

1. Optimised pipe installation
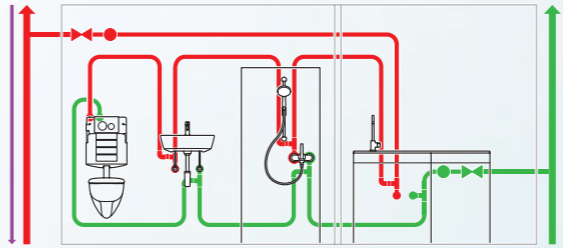2. Automated water replacement via hygiene flush unit

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*In addition to stage 1:*

- Use of an automated flushing device to ensure water replacement when not in use

**Additional benefits**
- Flushing programmes as required (time or interval programme)
- Ability to also flush hot water
- Configuration, function test, recording and maintenance via the Geberit Control app
- Planning flexibility afforded by different solutions for automated water replacement
- Connection to building automation via digital I/O

## STAGE 3
## CONTROLLED RINSING

★ ★ ★

1. Optimised pipe installation
2. Automated water replacement via hygiene flush unit
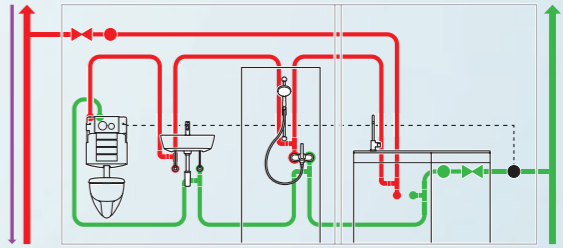3. Targeted water replacement through the use of sensor technology

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*In addition to stage 2:*

- Observation of temperature curve and actual stagnation period

**Additional benefits**
- Temperature-controlled flushing programme
- Water replacement ensured by means of volume measurement
- Ability to record the measured water volume

# CONNECTED SYSTEM
# OPTIMISED
# WATER USAGE

The connected Geberit Hygiene System ensures comprehensive safety and saves resources at the same time. In addition, connected hygiene systems offer maximum transparency and meet all requirements for correct documentation of all drinking water hygiene measures. Thanks to comprehensive monitoring and the option of continuously optimising the measures, level 4 proves to be very flexible and forward-looking.

## LEVEL 4: CONNECTED SYSTEM ★ ★ ★ ★

1. Optimised pipe installation
2. Automated water replacement via hygiene flush units
3. Targeted water replacement through the use of sensors for GEBUS
4. Centralised hygiene management

### THE RESULT
The connected system combines all information flows and enables hygiene management that is optimised for the building, its use and the environmental parameters.

### BENEFITS

**Safety**
• Documentation of system operation
• Regular flushing for irregular use
• Centralised operation and documentation
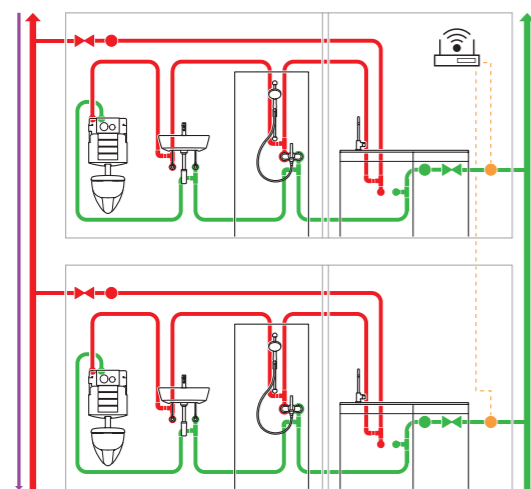• Logging of water temperatures and flow rates using Geberit sensors for GEBUS

**Saving**
• Optimum use of drinking water
• No longer any need for manual flushes to ensure water replacement
• Simplified facility management

**Flexibility**
• Expandable system
• Flexible positioning of the sensors
• Can be integrated into a building automation system via BACnet/IP
• Optimisation of water replacement
• Urinals, washbasin taps, WC flush controls and hygiene flush units can be integrated

Products marked with the Geberit Connect symbol are suitable for use in the connected system.

**CENTRALISED OPERATION**
With Geberit Connect, sanitary appliances can be connected and centrally controlled and operated. This means that several devices can be operated in less time.

**SMART SYSTEMS**
The use of smart systems enables unnecessary water consumption to be avoided and saves energy and working hours.In addition, these systems initiate automated flushing processes depending on all critical parameters such as temperature, volume, use, etc. Various flushing programmes are available.

**TECHNOLOGICALLY SECURE WITH GEBERIT CONNECT**
Products with the Geberit Connect function establish the technological platform. This enables sanitary appliances to be connected to each other, and up to 30 appliances to be connected to a central gateway. The products can be controlled centrally as a group, or individually and locally via a Geberit Gateway. Operated through the Geberit Control app or by integration into a building automation system.

**GEBERIT SENSOR FOR GEBUS**
It provides important data on temperature and volume in the pipeline and sends this to the gateway. The sensor for GEBUS thus ensures transparency everywhere with regard to the temperatures and volumetric flow rates in the system. It also forms the basis for smart flushing programmes in the Geberit Hygiene System.

## GEBERIT SENSORS FOR GEBUS

# SENSITIVE TO TEMPERATURES

Geberit sensors for GEBUS measure temperatures or temperatures/volumetric flow rates and send this information to the Geberit Gateway. It provides detailed insights into points of use and the temperature profile, and allows conclusions to be drawn about the overall status of the drinking water system.

### GEBERIT TEMPERATURE AND VOLUMETRIC FLOW RATE SENSOR FOR GEBUS
The sensor is installed directly in the supply network. Temperature and volume are recorded on the Geberit Gateway and provide an insight into the operating state.

### GEBERIT TEMPERATURE SENSOR FOR GEBUS
The sensor for GEBUS can also be easily and simply attached to existing piping systems independently of a hygiene flush unit or flush unit. Flexible installation in the pipeline means that the temperature can be measured effortlessly even at critical points.

### DOCUMENT MEASURED VALUES
The measured values recorded for GEBUS by the Geberit sensors can be documented and analysed as operating parameters. Based on the results, further operational or suitable measures can be derived if necessary.

Geberit temperature and volumetric flow rate sensor for GEBUS

Geberit temperature sensor for GEBUS

| | Geberit temperature sensor for GEBUS | Geberit temperature and volumetric flow rate sensor for GEBUS |
|---|---|---|
| Use | • For cold and hot potable water<br>• For detecting the water temperature<br>• For connection to GEBUS<br>• For pipes from DN 15 to DN 50<br>• For fastening to pipelines with cable ties | • For cold and hot potable water<br>• For detecting the water temperature and the amount of water flushed<br>• For connection to GEBUS<br>• For installation in pipelines<br>• Available in the dimensions DN 10, DN 15, DN 20 and DN 25 |
| Properties | • Temperature sensor PT1000<br>• GEBUS stranded wire cable 4× 0.35 mm | • Temperature sensor PT1000<br>• Vortex flow sensor for detecting the volumetric flow rate<br>• Connection via GEBUS |
| Installation | Fastening to pipeline with cable ties | Installation in pipeline |
| Degree of protection | IP65 | IP65 |
| Cable length | 1 m | 1 m |
| Flow pressure | - | 0–10 bar |
| Material | Plastic | Lead-free gunmetal (CuSn$_4$Zn$_2$PS) |
| Flushing programmes | • Temperature flush | • Temperature flush<br>• Difference flush |

## GEBERIT GATEWAY

# WELL COMBINED

The Geberit Gateway is the core element for connecting devices, enabling individual devices to be operated centrally. By centralising the flushing programmes on the Geberit Gateway, the connected system can be flexibly adapted to changing situations. Integration into higher-level building automation systems is also possible via the Geberit Gateway.

### EASY TO INSTALL
The Geberit Gateway can be installed in a control cabinet or in an installation box for concealed installation in solid or drywall construction.In addition, the installation box can be mounted on Geberit Duofix or Geberit Duofix for washbasins or Geberit GIS mounting plates.

### WIRED INTERFACES
The Geberit Gateway has the following wired interfaces:
• Geberit Bus (GEBUS) for the integration of Geberit Connect devices
• LAN for connection to cloud or building automation systems
• Easily accessible front USB port for firmware updates and service

### WIRELESS INTERFACES
The Geberit Gateway can be connected to the Geberit Control app via Bluetooth®, and a wireless network connection can also be established via WLAN.
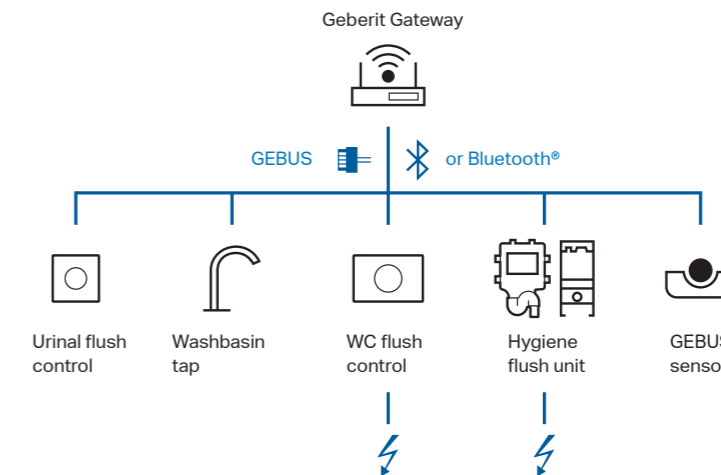
### SYSTEM LOGS
The Geberit Gateway and the connected devices provide various logs and data.These can be downloaded with the Geberit Control app.

Colour codes facilitate orientation when connecting the GEBUS cables

Further information can be found in the system manual.

Geberit Gateway

GEBUS    or Bluetooth®

Urinal flush control    Washbasin tap    WC flush control    Hygiene flush unit    GEBUS sensor

The Geberit Gateway and the connected devices provide various protocols and data. These can be downloaded via the Geberit Control app.

# FLUSHING PROGRAMMES
## FOR EVERY NEED

There are numerous options for covering all requirements with the right flushing programme, from the compact, analogue solution to the comprehensively connected system. The latest connected systems with GEBUS connection allow targeted programming of different flushing modes for different devices. Up to 60 flushing programmes can be implemented per gateway.

**Legend (icons):**
- Geberit hygiene flush unit
- Geberit concealed cistern with hygiene flush unit
- Geberit HS05 hygiene flush unit
- Geberit urinal systems with electronic flush actuation
- Geberit WC flush controls with electronic flush actuation
- Geberit washbasin taps

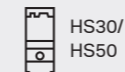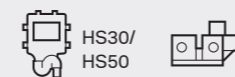| Use of the flushing programmes with the following points of use | Individual points of use | Connected system with GEBUS connection |
| --- | --- | --- |
| **Time flush**<br>A flush is triggered at a defined time on a weekday. The flush volume, time and day of the week can be selected. | HS30/HS50, HS30/HS50 | HS30/HS50, HS50, NEW; NEW, NEW, NEW |
| **Interval flush**<br>A flush is triggered after a defined interval has elapsed. The flush volume, start time and interval can be selected. | HS30/HS50 | HS30/HS50, HS30/HS50 |
| **Interval flush with usage detection unit**<br>A flush is triggered after a defined interval has elapsed, the interval being reset each time the urinal is used. The flush volume, start time and interval can be selected. | HS30/HS50 | HS30/HS50 — Available from autumn 2024 |
| **Temperature flush**<br>A flush is triggered when a start temperature is reached and ends when a stop temperature is reached. The start/stop temperature and maximum flush volume can be selected. | HS50, HS50 — Requires Geberit temperature sensor with female socket end, external, art. no. 616.208.00.2 | HS30/HS50 NEW, HS50 NEW, NEW; NEW, NEW, NEW — Available from autumn 2024. Requires Geberit sensor for GEBUS |
| **Difference flush with temperature and volumetric flow rate sensor for GEBUS**<br>A flush is triggered after a defined interval has elapsed. The water volume measured by the sensor for GEBUS is taken into account and deducted from the defined nominal consumption. In this way, water consumption can be optimised. The target volume and interval can be selected. | | HS30/HS50 NEW, HS50 NEW, NEW; NEW, NEW, NEW — Requires Geberit temperature and volumetric flow rate sensor for GEBUS |
| **Difference flush with usage detection unit**<br>A flush is triggered after a defined interval has elapsed. The water volume recorded at the points of use is taken into account. In this way, water consumption can be optimised. The target volume and interval can be selected. | | HS30/HS50 — Available from autumn 2024 |

# ALL SOLUTIONS **AT A GLANCE**

| | | **GEBERIT HS10 / HS30 / HS50 HYGIENE FLUSH UNIT** | **GEBERIT CONCEALED CISTERN WITH HS30 / HS50 HYGIENE FLUSH UNIT** | **GEBERIT HS05 HYGIENE FLUSH UNIT** | **CONTROL ELECTRONICS WITH INTERVAL FLUSH** | **GEBERIT HS01 HYGIENE FLUSH UNIT** |
|---|---|---|---|---|---|---|
| | | **All options for large flush volumes**<br>Hygiene flush unit that can be flexibly installed at any chosen position. Suitable for large flush volumes. | **Logical connection**<br>Hygiene flush unit integrated into the Sigma concealed cistern that can be used for room sections (such as individual apartments). | **When a simple retrofit is all it takes**<br>A hygiene flush unit that can be retrofitted in a Geberit Sigma concealed cistern 12 cm. | **Dual use in non-residential sanitaryrooms**<br>Products with control electronics that can also be used as a hygiene flush unit with interval programme. | **When time is of the essence**<br>A compact hygiene flush unit used temporarily as a surface-mounted solution to prevent stagnation in critical pipe sections. |
| **Overview** | Product versions (WSC = water supply connection) | • 1x WSC<br>• 2x WSC | • 1x WSC<br>• 2x WSC | • No additional water supply connection. The fill valve of the cistern is used for the hygiene flush unit. | • No additional water supply connection | • 1 design (1x WSC) |
| | Operation | • Operation, maintenance and recording via the Geberit Control app<br>• Parametrization of the operation modes, flushing programmes | • Operation, maintenance and recording via the Geberit Control app<br>• Parametrization of the operation modes, flushing programmes | • Operation, maintenance and recording via the Geberit Control app | • Operation, maintenance and recording via the Geberit Control app | • Flush interval can be set easily and intuitively via the control unit |
| | Geberit Connect | ✔ (HS50) | ✔ (HS50 / HS30) | ✔ | ✔ | – |
| | Connection to building automation — Digital I/O | ✔ (HS30 / HS50) | ✔ (HS30 / HS50) | – | – | – |
| | Connection to building automation — BACnet/IP[1] | ✔ (HS50) | HS30 via Geberit Power & Connect Box) / HS50 (direct) | ✔ | ✔ | – |
| | Connection to building automation — 24 V (open/closed) | ✔ (HS10) | – | – | – | – |
| | Flushing programmes | • Time flush mode (HS30/HS50)<br>• Interval flush mode (HS30/HS50)<br>• Temperature flush mode (HS50) | • Time flush (HS30 / HS50)<br>• Interval flush with usage detection unit (HS30 / HS50)<br>• Temperature flush (HS50)<br>• Difference flush with usage detection unit (HS30 / HS50) | • Interval flush mode | • Interval flush<br>• Interval flush with usage detection unit<br>• Difference flush with usage detection unit | • 1–20 l in flush intervals of either 1, 3 or 7 days |
| | Application purposes | • For connection to a cold water or hot water pipe<br>• For Geberit Duofix and Geberit GIS Prewall installations<br>• For exposed or concealed installation | • For connection to a cold water or hot water pipe<br>• For Geberit Duofix and Geberit GIS Prewall installations<br>• External power supply unit | • For flushing a cold-water pipe<br>• For mounting in a Geberit Sigma concealed cistern 12 cm | • For flushing a cold-water pipe | • For exposed installation |
| | Power supply | • External power supply unit | • With Geberit Power & Connect Box set (accessory) | • External power supply unit<br>• Battery operation (2x LR20 1.5 V) (service life approx. 5 years when used daily, can be replaced)<br>• With Geberit Power & Connect Box set (accessory) | • External power supply unit<br>• Battery operation (UR and wbTap[3] type AA 1.5 V), (WC 2x LR20 1.5 V) (service life approx. 2 years)<br>• Supply via Geberit Gateway for urinal flush controls and washbasin taps | • Integrated battery (9 V) (service life approx. 1.5 years when used daily, can be replaced) |
| | Approvals | • EN 1717 / EN 13077<br>• Sound insulation in accordance with DIN 4109<br>• Fire protection according to I 30 to I 90 and F 30 to F 90 (only in conjunction with Geberit Quattro)<br>• Class E according to EN 13501-1 | | | | • EN 1717 / EN 13077<br>• Tap group I acc. to EN ISO 3822-1 |
| **Technical details** | Flow pressure | 0.5–10 bar | 0,1–10 bar | 0,1–10 bar | 0.1–8 bar | 0,2–10 bar |
| | Applications | Hot water and cold water | Hot water and cold water | Cold water | • Cold water (WC and urinal flush control)<br>• Cold and/or hot water (washbasin tap) | Cold or hot water |
| | Flush performance | 10 l/min per solenoid valve (alternatively 4 l/min) | 4 l/min | 10 l/min at 3 bar | 10 l/min (WC) / 14 l/min (UR) / 5 l/min (wbTap) | 3 l/min |
| | Maximum flush time | 60 min | 10 min | 200 s | 200 s (WC) / 180 s (UR) / 200 s (wbTap) | 7 min |
| | Maximum flush volume | 600 l | 40 l | 33 l | 33 l (WC) / 42 l (UR) / 17 l (wbTap) | 20 l |
| | Interval flush, factory setting | 72 h | 72 h | 72 h | 24 h | 24 h |
| | Flush time, factory setting | 180 s | 180 s | 5 s (1x full flush) | 5 s (WC, 1x full flush) / 7 s (UR) / usage time plus run-on function if installed (wbTap) | 120 s (max. flush time: 15 min) |

[1] BACnet/IP via Geberit Gateway    [2] Urinal flush controls (UR)    [3] Washbasin taps (wbTap)

# ALL OPTIONS FOR
# LARGE FLUSH VOLUMES

All hygiene flush unit models for control and sensor technology offer a high level of performance for both hot water and cold water. The various functions and programmes on offer make for a demand-oriented, permanent and water-saving hygiene flush unit. The compact design makes it easy to install in small spaces in prewall systems, plant rooms, as an exposed solution or at the end of riser pipes.

**RELIABLE WATER REPLACEMENT**
Typical areas of use include hotels and guest houses, hospitals and retirement homes, schools, sports halls, barracks and holiday homes. The programmable flush logic allows users to make adjustments in terms of time, temperature and their actual requirements.
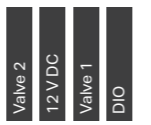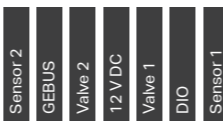
**COMPACT SOLUTION**
The hygiene flush units offer a particularly compact design with an integrated trap. The module can be perfectly integrated into the Geberit GIS and Geberit

Duofix installation systems. Installation in solid constructions is, of course, also possible. Project planning can all take place using Geberit ProPlanner.

**VARIOUS MODELS**
The Geberit HS10 / HS30 / HS50 hygiene flush units are available with one or two water connections and the HS50 hygiene flush unit is also available with integrated sensors. Measuring the volumetric flow rate allows the flush volume to be recorded precisely.

| Control | | Geberit HS10 Hygiene flush unit | Geberit HS30 Hygiene flush unit | Geberit HS50 Hygiene flush unit |
|---|---|---|---|---|
| Control | | No control | Valve 2 / 12 V DC / Valve 1 / DIO — control unit HS30/ BLE | Sensor 2 / GEBUS / Valve 2 / 12 V DC / Valve 1 / DIO / Sensor 1 — control unit HS50/BLE |
| Operation | | Via building automation | Via the Geberit Control app | Via the Geberit Control app |
| Sensors | Analogue | – | – | ✔ |
| | For current input card 4–20 mA | ✔ | – | – |
| Connection to building automation (BA) | Digital I/O | – | ✔ | ✔ |
| | BACnet/IP via Geberit Gateway | – | – | ✔ |
| | 24 V (open/closed) | ✔ | – | – |
| Flushing programmes | | Customised via building automation system | See overview page xx/yy | |

**CONNECTION-SAFE**
Certificate of conformity AS-0605CQ0214 confirms connection safety in accordance with DVGW worksheet W 540.

**FOR DIFFERENT REQUIREMENTS**
Various flushing programmes can be implemented as required. The flush performance can be set to up to 2 x 10 litres per minute.

**USER-FRIENDLY**
Operation, maintenance and recording via the Geberit Control app.

**SAFETY**
Integrated backpressure sensor.

**FOUR COVER PLATES**
Available in various designs.
- Stainless steel
- White alpine
- Bright chrome-plated
- Matt chrome-plated

**VERIFIED SOUND INSULATION**
The product fulfils the requirements for tap noise group I in accordance with EN ISO 3822-1 and the sound insulation requirements in accordance with DIN 4109 and VDI 4100.

**PREVENTION OF UNPLEASANT ODOURS**
Connection to the drainage system via the integrated trap water seal.

**USER-FRIENDLY**
Straightforward programming of the flush intervals and flush times via the Geberit Control App.

**FOR DIFFERENT REQUIREMENTS**
The flush performance can be set to up to 4 litres per minute per connection.

**INTELLIGENT**
Sensor technology for temperature and volumetric flow rate.

**EASY ACCESS**
Accessibility is ensured via the actuator plate.

**SAFETY**
Integrated backpressure senso

**VAPOUR SEAL**
The cistern is sealed to prevent steam or condensed water from escaping.

**SAVING WATER**
Due to the usage detection, the WC is only flushed when it is not in use.

**PREVENTION OF UNPLEASANT ODOURS**
Connection to the drainage system via the WC.

GEBERIT CONCEALED CISTERN
WITH HS30 / HS50 HYGIENE FLUSH UNIT

# LOGICAL
# CONNECTION

The integrated hygiene flush units with usage detection ensure regular water replacement within the pipelines. The hygiene flush unit is only actuated when the toilet is not in use to avoid unnecessary water consumption. The integrated hygiene flush unit is available for the Geberit GIS and Geberit Duofix installation systems and is suitable for closed sections with small flush volumes for both hot water and cold water.

**SAPCE-SAVING SOLUTION**
As the product is integrated in the concealed cistern, an additional drainage connection is no longer required, since drainage takes place via the WC. Its compact design without the need for additional space means the integrated hygiene flush unit is suitable for all application areas involving the planned installation of a WC where minimal space is available or no additional cover plate is required.

**MODELS**
The Geberit HS30 / HS50 hygiene flush units are available for the Geberit GIS and Geberit Duofix installation systems and with one or two water supply connections. As a result, they are capable of

flushing both hot- and cold-water pipes. The Geberit Control app can be used to configure flushing programmes and read out flush protocols. All hygiene flush units feature a malfunction contact, backpressure sensor, automatic data storage and a function test of all components.

**ACTUATOR PLATES**
The cistern can be combined with all mechanical actuator plates from Sigma01 to Sigma60 and Sigma70 from 2023 onwards, as well as with all WC ceramic appliances.

| Control | | Geberit concealed cistern with HS30 hygiene flush unit | Geberit concealed cistern with HS50 hygiene flush unit |
|---|---|---|---|
| | | Valve 2 / 12 V DC / Valve 1 / DIO — Control unit HS30SPK / BLE | Sensor 2 / GEBUS / Valve 2 / 12 V DC / Valve 1 / DIO / Sensor 1 — Control unit HS50 SPK / BLE |
| Operation | | Via the Geberit Control app | Via the Geberit Control app |
| Sensors | Analogue | ✔ | ✔ |
| Connection to building automa-tion(BA) | Digital I/O | ✔ | ✔ |
| | BACnet/IP via Geberit Gateway | ✔* | ✔ |
| Flushing programmes | | See overview page xx/yy | |

*With Geberit bus converter with integrated power supply unit

**STRAIGHTFORWARD INSTALLATION**
The Geberit HS05hygiene flush unit replaces the normal support block. It can be installed or replaced in no time at all.

**VERSATILE**
The Geberit HS05 hygiene flush unit can be combined with actuator plates for single and dual flush operation.

**SPACE-SAVING**
Installation in the concealed cistern means no additional space is required for an external hygiene flush.

**USER-FRIENDLY**
Straightforward programming of the flush intervals and flush times via the Geberit Control App.

**FREEDOM OF DESIGN**
Compatible with all mechanical actuator plates (Sigma01 to Sigma60 or Sigma701) respectively) from 2023.

INSTALLATION MODULE GEBERIT HS05
HYGIENE FLUSH UNIT

# WHEN A SIMPLE RETROFIT IS ALL IT TAKES

The Geberit HS05 hygiene flush unit offers a cost-effective and space-saving solution to maintain drinking water quality. It ensures reliable cold water replacement and can be installed or retrofitted in any Geberit Sigma concealed cistern in just a few simple steps.

**INSTALL OR RETROFIT IN JUST A FEW SIMPLE STEPS**
Geberit has developed the HS50 hygiene flush unit as a quick and   straightforward solution for protecting cold water from stagnation and the resulting microbial contamination. The unit fits all Geberit Sigma concealed cisterns with a depth of 12 cm and can be effortlessly retrofitted at any time. Installing it in the concealed cistern means no additional space is required in bathrooms and sanitary rooms. The hygiene flush unit replaces the existing support block in the flushing system.

**MAXIMUM FREEDOM OF DESIGN**
The functionality of the cistern remains completely intact. The Geberit HS05 is compatible with all mechanical actuator plates from Geberit Sigma01 to Sigma70 (from 2023)[1] or Geberit Sigma01 to Sigma50[2] and therefore with single and dual flush systems. Power can be supplied by the mains or batteries. Settings can be made via smartphone using the Geberit Control app. The app can also be used to adjust the hygiene flush unit to suit customer-specific requirements.

| | | Geberit HS05 hygiene flush unit |
|---|---|---|
| **Operation** | | Via Geberit Control app |
| **Power supply** | | Battery or power supply unit |
| **Sensors** | | – |
| **Connection to building automation** | BACnet/IP via Geberit Gateway | ✔ |
| **Flushing programmes** | | Interval-controlled |

[1] For Geberit HS05 Hygiene flush unit with main operation
[2] For Geberit HS05 hygiene flush unit with battery operation

# DUAL USE IN NON-RESIDENTIAL SANITARY ROOMS

In some cases, simple solutions for automatic flushes are all that is required. The additional option of programming interval flushes is available in many Geberit washbasin taps, as well as urinal and WC flush controls.

Geberit systems such as cisterns, urinals and washbasin taps make it possible to ensure consumption in line with demand, temperature maintenance and therefore increased hygiene safety for cold water. As a result, the installed unit offers a dual benefit without requiring any intervention in the piping system. All controls can be easily operated and set via the Geberit Control app.
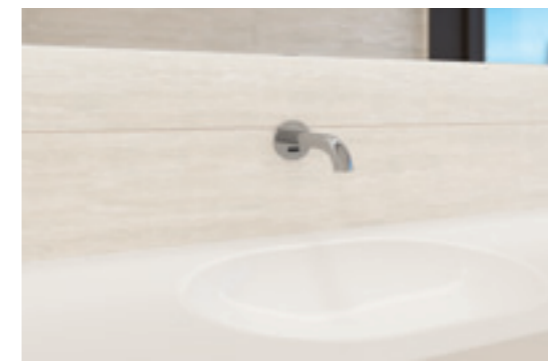


### 1 WASH BASIN TAPS
With the Geberit washbasin taps Piave, Brenta, type 185 and type 186 (wall-mounted or deck-mounted), interval flushes of 1 to 168 hours and flush times of up to 200 seconds are possible. The Geberit washbasin taps are available for mains connection or with battery operation for retrofitting.



### 2 GEBERIT WC FLUSH CONTROLS
As the most frequently used sanitary appliance, the WC offers ideal conditions for hygienic cold-water flushing by means of its logical integration and positioning in the pipe system, as well as the large flush volumes. The Geberit Sigma10 and Sigma80 WC flush controls with electronic flush actuation can also be retrofitted and facilitate interval flushes from 1 to 168 hours and flush times of up to 200 seconds.



### 3 GEBERIT URINAL FLUSH CONTROLS
Both the Geberit Preda and Selva urinals with integrated flush control and standard Geberit urinal flush controls can be used to flush the cold-water system with interval flushes of 1 to 168 hours and flush times of up to 200 seconds.
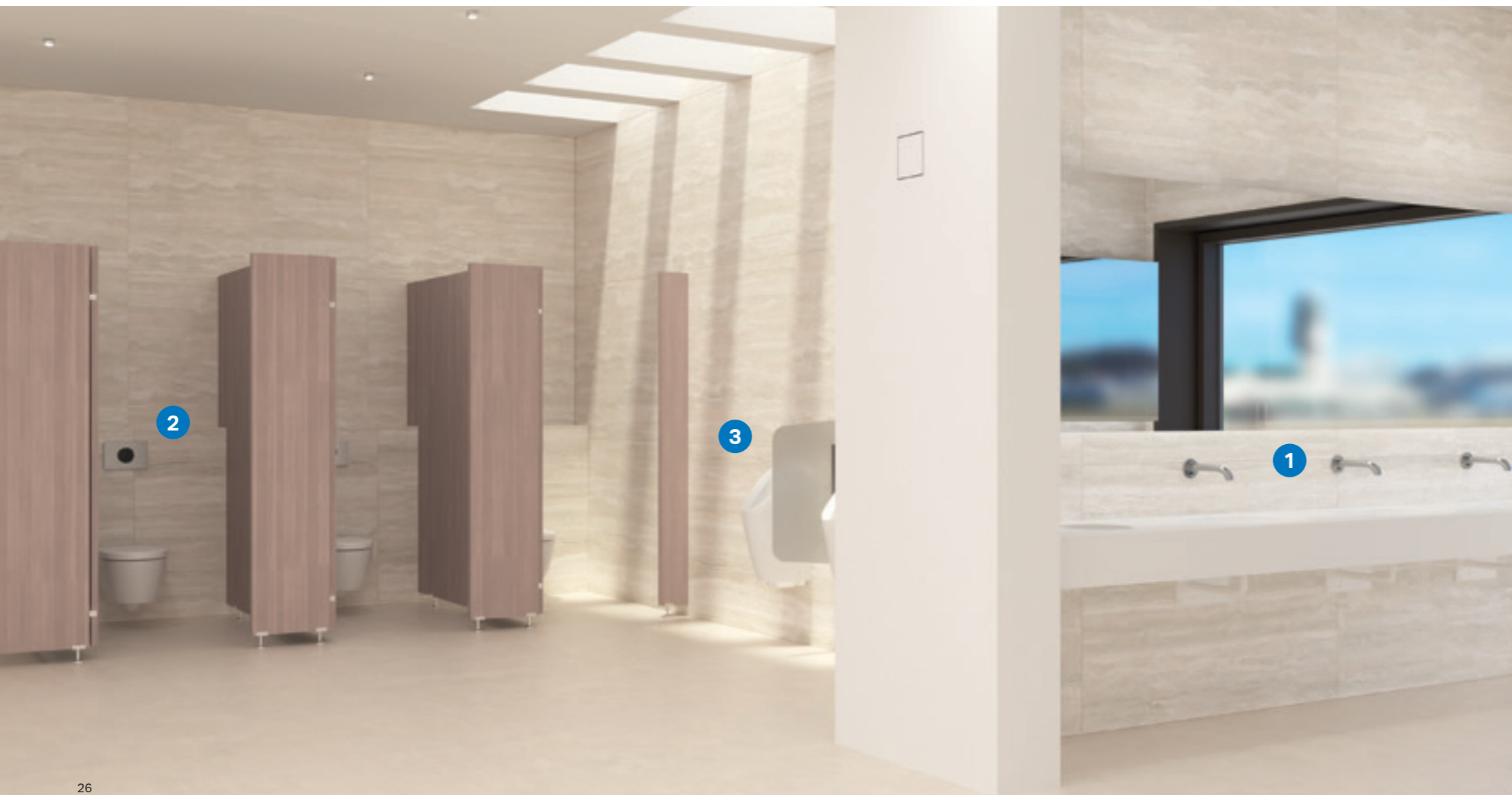
|  |  | Control electronics |
| --- | --- | --- |
| **Operation** | | With Control App |
| **Power supply** | | Battery or power supply unit |
| **Sensors** | | – |
| **Connection to building automation** | BACnet/IP via Geberit Gateway | ✔ |
| **Flushing programmes** | | See overview page xx/yy |

**INTUITIVE OPERATION**
The flush interval and the flush volume can be set easily and intuitively via the control unit.

**ECONOMICAL**
It can be demounted after use and installed in another location with ease. Ideal for temporary use.

**DVGW CERT**
Certificate of conformity AS-0605CT0312 confirms connection safety in accordance with DVGW worksheetW 540.

**DVGW**
CERT
Anschlusssicher
W 540

**SOLENOID VALVE CLOSED WHEN DE-ENERGISED**
Energy is only required to open the valve, not to close it. This ensures that water cannot flow uncontrolled if the battery is missingor dead.

**NO UNPLEASANT ODOURS**
The trap is connected to a d40or d50 mm drainage pipe.

FLUSH UNIT GEBERIT HS01 HYGIENE FLUSH UNIT
# WHEN TIME IS
# OF THE ESSENCE

If serious hygiene problems arise in a drinking water system due to stagnation, or if drinking water safety is at risk due to temporarily unused systems, then the Geberit HS01 hygiene flush unit can be mounted right where it is needed most. It features compact dimensions and is easy to operate. Thanks to its battery, it can be installed anywhere without the need for an additional mains connection.

**THE SHREWD PROBLEM SOLVER**
The Geberit HS01 hygiene flush unit is designed to bridge temporary stagnation periods – for example, if dead-end pipes cannot be removed or if there are short periods of no or irregular use. This includes unused pipelines, which may be presentduring the construction or conversion phase, in the event of changes of use of rooms, garden water connections or property vacancies.

**SIMPLE AND INDEPENDENT**
With its compact design and mains-independent power supply, the Geberit HS01 hygiene flush unit is

exceptionally flexible. The small trap can be demounted for cleaning,and the standard 9 V battery ensures operation for up to 18 months.

**PREDEFINED FLUSH VOLUMES**
The process of setting the flush intervals to 1, 3 or 7 days is both simple and intuitive. A corresponding flush volume of 1 to 20 litres can also be selected just as intuitively. The flush volume is factory-set to 3 litres every 3 days. Operation is carried out via clearly visible buttons.

Connection pipes to unused building sections

Pipelines that are only used at certain times of the year

GEBERIT PIPING SYSTEMS

# EVERYTHING RUNS
# **SMOOTHLY HERE**

Geberit supply systems ensure exceptional standards of drinking water safety and hygienic processing. The pressing systems, featuring multilayer pipes orsystem pipes made of stainless steel or copper, can be processed quickly, economically and safely without soldering or welding. Floor connections can be constructed even more quickly thanks to the push-fit connection system, Geberit PushFit. All the systems have protection plugs that protect pipes and fittings hygienically against dirt and dust during transport, storage and installation.

**1  GEBERIT MAPRESS STAINLESS STEEL**
The pressing system is available in stainless steel types 1.4401 and 1.4521.

**GEBERIT MAPRESS COPPER**
Geberit Mapress Copper fittings can be used with copper pipes for drinking water installations.

**2  GEBERIT MEPLA**
Quick to process, inherently stable, and resistant to pressure and corrosion: a proven system for drinking water installations.

**3  GEBERIT FLOWFIT**
The new supply system whose seamless and safe processing principles are truly impressive. The pressure loss-optimised system enables small pipe dimensions to be used, preventing large water volume from entering the pipes.

**4  GEBERIT PUSHFIT**
Complete with PVDF and gunmetal fittings in dimensions d16-25, the quick push-fit connection system is ideal for floor installation.

## SHUT-OFF CLEANLY AND EXTRACT WATER

An important contribution to ensuring drinking water hygiene  is made as early as the planning phase for the corresponding pipe valve fittings.

**GEBERIT ANGLE-SEAT STOP VALVE**
The Geberit angle-seat stop valve made of high-quality gunmetal meets the highest hygienic requirements. The maintenance-free spindle seal with self-lubricating lip seal ensures perfect, long-lasting use.

**CLEAN EXTRACTION OF THE WATER PROBE**
The Geberit sampling valve facilitates simple and professional sampling in drinking water systems in accordance with DVGW worksheet W 551 or the Drinking Water Ordinance, which prescribe regular chemical or microbiological testing of the drinking water installation.

The Geberit angle-seat stop valve is available with connections for all Geberit supply systems.
↓

Elbow tap connector 90° with connector thread
←

→
Geberit T-piece adapter with MasterFix

The sampling valve for mounting on the Geberit angle-seat stop valve.
→

**LOOPED PIPELINES**
Corresponding system components are available for creating looped pipelines.

GEBERIT CONTROL APP

# DRINKING WATER REPLACEMENT **UNDER CONTROL**

The Geberit Control app makes everyday life easier for plumbers, service technicians and facility managers. All Geberit hygiene flush units[1] can be connected to a smartphone via Bluetooth®.

### SMART CONTROLS
The Geberit Control app is compatible with a wide range of Geberit products. This intuitive app makes it possible to change device settings, read device information and carry out maintenance work via Bluetooth®.

### CUSTOMER-SPECIFIC
The app can be used to optimise the flush controls for their intended use. Various flushing programmes and setting options are available.

### DOCUMENTATION
The Geberit Control app features a documentation function, which provides confirmation that regular water replacement has taken place.

### MAINTENANCE SUPPORT
In the event of any errors (such as incorrect closure of the solenoid valve), the app displays a warning note and suggests appropriate measures. This ensures remedial action can be taken quickly and helps to avoid loss of functionality.

### SAFETY FIRST: PASSWORD PROTECTION
All Geberit controls can be password-protected against unauthorised access in the Geberit Control app. User authorisations can be transferred to third parties with full or partial access without revealing the password.

[1] Not for Geberit HS10 hygiene flush unit or Geberit HS01 hygiene flush unit

**From 2024 onward, the Geberit Connect System and the Geberit Control app will offer new functions and an extended service.**

**NEW**

### EMAIL NOTIFICATION
If the cloud connection is activated on the Geberit Gateway, users can be automatically notified by email in the event of errors or warnings in the Geberit Connect system.
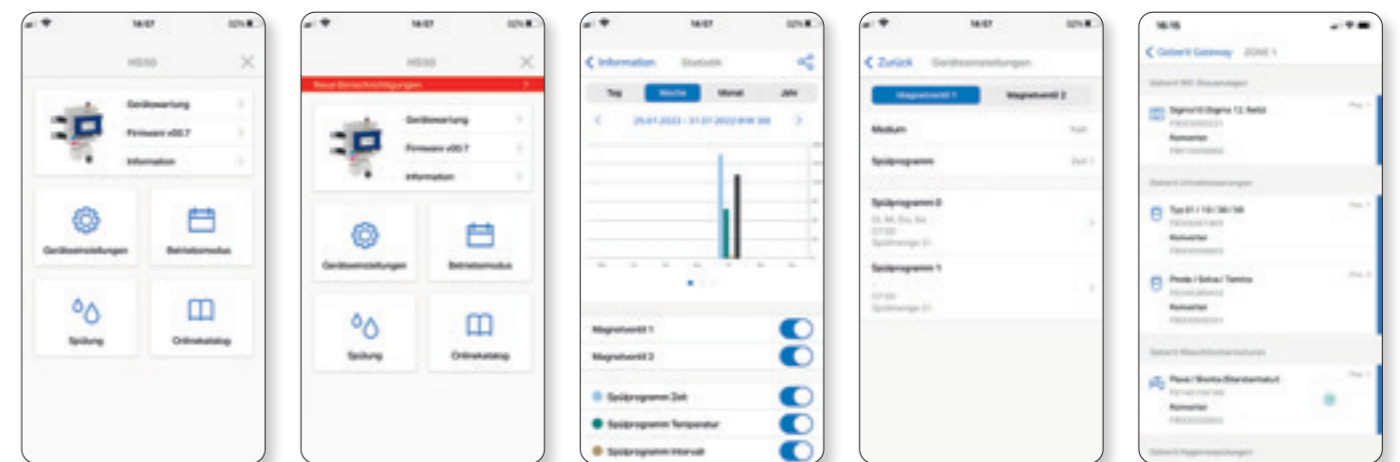
### FIRMWARE UPDATE OVER THE CLOUD
The Geberit Gateway and the devices can be updated to the latest version when the cloud connection is activated.

### SERVICE REQUEST
If support is required, a request can be sent to Geberit Service via the Geberit Control app. All necessary device data is sent at the same time, so that feedback can be provided without unnecessary delays.



Overview of the control for the hygiene flush unit

Warning notes

Statistics and documentation

Various operation modes

Devices that are connected to the Geberit Gateway

The Geberit Control app is available free of charge from the respective app store.

iOS

Google Play

BUILDING AUTOMATION
# **CONTROL**
# RIGHT AT THE FOREFRONT

Geberit offers various interfaces for integration into building automation systems. The building-specific flushing programmes created by the user can be defined and used to this end. Various interfaces are available for connection.

**BACNET/IP VIA GEBERIT GATEWAY**
Geberit Connect allows end devices to be connected to a gateway via the Geberit Bus (GEBUS). This generates BACnet objects, which in turn are passed on to the management and operating device. All Geberit Connect-compatible Geberit hygiene flush units can be used for this purpose.

**DIGITAL I/O**
The digital I/O interface can be used to open and close solenoid valves and retrieve status messages. The HS30 versions are optimal for applications such as this.

**EXTERNAL CONTROL**
Direct control of the solenoid valves is possible with an external control. The Geberit HS10 hygiene flush unit can be controlled with 24-volt direct current. The backpressure sensor system continues to function.

Water replacement controlled by building automation
↓
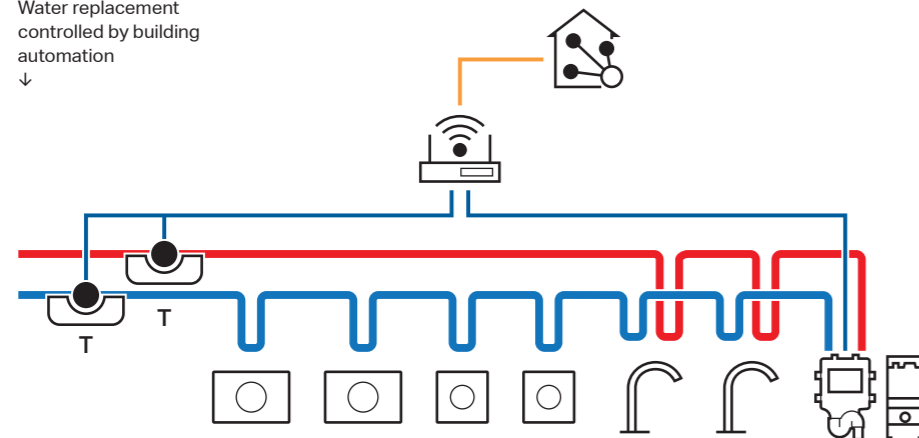
# HYGIENICALLY PERFECT
## PLANNING

Drinking water hygiene is something that can be planned. An optimal pipe layout includes a looped pipe installation complete with a frequently used element at the end.

**GEBERIT PROPLANNER**

The Geberit ProPlanner planning tool also provides support in the area of drinking water hygiene. With the help of its loop through setting, the Geberit ProPlanner connects all objects selected by the sanitary engineer to this pipe routing. Hygiene flush units can be used flexibly at all critical points in the planning process, and the corresponding sensors can be placed with the same level of freedom.

**MATERIAL LIST**

Geberit ProPlanner prepares a complete material list including all necessary fittings and connections. These are predefined depending on the country, but can be adapted accordingly.

**HYDRAULIC LIST**

Geberit ProPlanner displays pressure losses in the hydraulic list. To ensure that all objects can be operated properly in even the most unfavourable flow path, ProPlanner checks the plans that have been created. If existing limit values are undercut or exceeded, an error message is displayed visually in the schematic drawing so that a correction can be made.

**SETTING LISTS**

When it comes to the hygiene flush units, Geberit ProPlanner creates recommendations for the necessary parameters such as the flush time and flush volume. This lays the foundations for proper subsequent operation.
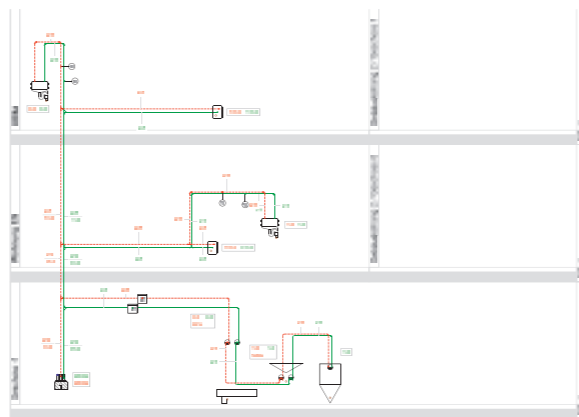


↑
Schematic planning in Geberit ProPlanner

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## BIM PLANNING

For planning in Autodesk Revit®, BIM content for a wide range of hygiene flush units is available via the Geberit plug-in catalogue module. The Geberit Hygiene System creates possibilities for connection to a building automation system. Intelligent tools can be used to handle projects with a high level of building networking.

# SYSTEM COMPONENTS

| | Article no. | GEBERIT SIGMA CONCEALED CISTERN 12 CM WITH HS30 HYGIENE FLUSH UNIT | GEBERIT SIGMA CONCEALED CISTERN 12 CM WITH HS50 HYGIENE FLUSH UNIT | GEBERIT HS10 HYGIENE FLUSH UNIT | GEBERIT HS30 HYGIENE FLUSH UNIT | GEBERIT HS50 HYGIENE FLUSH UNIT |
|---|---|---|---|---|---|---|
| **1 water supply connection** | | 461.207.00.1 / 111.057.00.1 | 461.212.00.1 / 111.075.00.1 | 616.276.00.1 | 616.270.00.1 | 616.272.00.1 |
| **2 water supply connections** | | 461.208.00.1 / 111.058.00.1 | 461.213.00.1 / 111.058.00.1 | 616.277.00.1 | 616.271.00.1 | 616.273.00.1 |

| Description | Variant | Article no. | SIGMA w/ HS30 | SIGMA w/ HS50 | HS10 | HS30 | HS50 |
|---|---|---|---|---|---|---|---|
| **Volumetric flow rate sensor (internal)** | | | | | | | |
| Geberit internal volumetric flow rate sensor, for hygiene flush unit | | 616.237.00.1 | | | | | x[2] |
| Geberit internal volumetric flow rate sensor, for hygiene flush unit in the concealed cistern, for cold water replacement | | 616.223.00.1 | | x | | | |
| Geberit internal volumetric flow rate sensor, for hygiene flush unit in the concealed cistern, for cold water or hot water connection | | 616.224.00.1 | | x[4] | | | |
| **Temperature sensors (external)** | | | | | | | |
| Geberit temperature sensor with male thread, for hygiene flush unit | | 616.208.00.2 | | x | | | x[3] |
| Geberit temperature sensor with male thread, for hygiene flush unit in the concealed cistern | | 616.208.00.1 | | x[3] | | | |
| **GEBUS sensors in connection with Geberit Gateway** | | | | | | | |
| Geberit temperature sensor for GEBUS | | 616.260.00.1 | | x | | x | x |
| Geberit temperature and volumetric flow rate sensor for GEBUS | DNV = 10, G = 3/4" | 616.250.00.1 | x | x | | | x |
| | DNV = 15, G = 3/4" | 616.251.00.1 | | x | | | x |
| | DNV = 20, G = 1" | 616.252.00.1 | | x | | | x |
| | DNV = 25, G = 1 1/4" | 616.253.00.1 | | x | | | x |
| **Accessories for networking and power supply** | | | | | | | |
| Geberit set of cables for GEBUS interface, for hygiene flush unit | | 616.238.00.1 | | x | | | x |
| Geberit set of cables for digital I/O interface, for hygiene flush unit | | 616.206.00.1 | x | x | | x | x |
| Geberit bus converter with integrated power supply unit, for Power & Connect Box, for elements for wall-hung WCs | | 116.097.00.1 | x | | | | |
| **Flow limiter** | | | | | | | |
| Geberit flow limiter set for hygiene flush unit | | 243.759.00.1 | x | x | x | x | x |
| **Installation sets** | | | | | | | |
| Geberit installation set for hygiene flush unit | | 241.599.00.1 | x | x | x | x | x |
| **Cables** | | | | | | | |
| Geberit connecting cable for external sensor, for hygiene flush unit in concealed cistern | | 616.209.00.1 | | x | | | |
| | | 616.210.00.1 | | x[4] | | | |
| **Cover plates** | | | | | | | |
| Geberit cover plate for hygiene flush unit | white alpine | 616.222.11.1 | | | x | x | x |
| | bright chrome-plated | 616.222.21.1 | | | x | x | x |
| | matt chrome-plated | 616.222.46.1 | | | x | x | x |
| | brushed stainless steel | 241.595.00.1 | | | x | x | x |
| Geberit cover for hygiene flush unit | traffic white RAL 9016 | 616.221.IH.1 | | | x | x | x |
| **Temperature and volumetric flow rate sensor (external)** | | | | | | | |
| Geberit temperature and volumetric flow rate sensor for building automation | d16 | 616.225.00.1 | | | x | | |
| | d20 | 616.226.00.1 | | | x | | |
| | d25 | 616.227.00.1 | | | x | | |
| | d32 | 616.228.00.1 | | | x | | |
| | d40 | 616.229.00.1 | | | x | | |
| | d50 | 616.230.00.1 | | | x | | |

1 Facilitates the Volume and Temperature flushing programmes.

2 Facilitates the Volume flushing programme. Can be combined with article number 616.208.00.2 (Temperature flushing programme).

3 Facilitates the Temperature flushing programme.

4 This accessory is only compatible with article numbers 111.025.00.1 and 461.183.00.1.

**Company**
Street
City
Country

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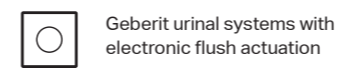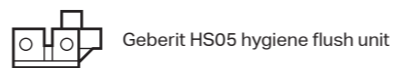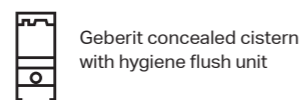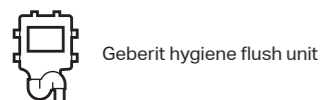F 00 00 000 00 00

**www.geberit.xy**

# A HYGIENE FLUSH UNIT FOR EVERY NEED
# FLUSHING PROGRAMMES
# FOR EVERY NEED

With the right flushing programme, there are numerous options to cover all requirements. Thanks to its wide range of options, compact design and innovative control technology, the Geberit Hygiene System is one of the leading solutions on the market.

## Use of the flushing programmes with the following points of use

## Individual points of use

**Time flush**

A flush is triggered at a defined time on a weekday. The flush volume, time and day of the week can be selected.

HS30/HS50    HS30/HS50

**Interval flush**

A flush is triggered after a defined interval has elapsed. The flush volume, start time and interval can be selected.

HS30/HS50

**Interval flush with usage detection unit**

A flush is triggered after a defined interval has elapsed, the interval being reset each time the urinal is used. The flush volume, start time and interval can be selected.

HS30/HS50

## Use of the flushing programmes with the following points of use

## Individual points of use

**Temperature flush**

A flush is triggered when a start temperature is reached and ends when a stop temperature is reached. The start/stop temperature and maximum flush volume can be selected.

HS50    HS50    Requires Geberit temperature sensor with female socket end, external, art. no. 616.208.00.2

**Difference flush with usage detection unit**

A flush is triggered after a defined interval has elapsed. The water volume recorded at the points of use is taken into account. In this way, water consumption can be optimised. The target volume and interval can be selected.

Geberit hygiene flush unit

Geberit concealed cistern with hygiene flush unit

Geberit HS05 hygiene flush unit

Geberit urinal systems with electronic flush actuation

Geberit WC flush controls with electronic flush actuation

Geberit washbasin taps

# SYSTEMATICALLY
# **AVOIDING STAGNATION**

Regular rinsing of the piping system and installations is key to avoiding problems with drinking water hygiene. For this to be achieved in an efficient and resource-saving manner, a multi-stage hygiene flush management system can be used, which is oriented to suit individual needs.
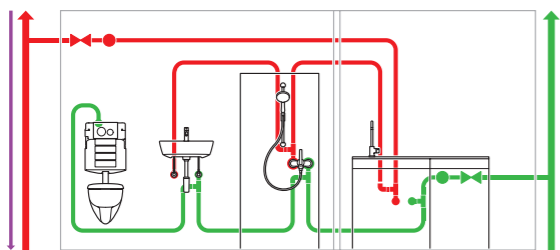
## STAGE 1
## CORRECT PIPING
★

1. Optimised pipe installation

---

- Smallest possible pipe diameter
- Looped pipe installation on the floor with a frequently used consumer at the end of the pipe
- Thermally decoupled pipe layout on the floor
- Separate boxes for hot potable water (PWH, PWH-C) and cold potable water (PWC)
- Proper insulation of the pipelines (PWH, PWH-C, PWC)

---

**Benefits**
- Low pipe contents
- Short draw-off times
- Low risk of stagnation
- Reduction of the thermal load on the cold-water pipe
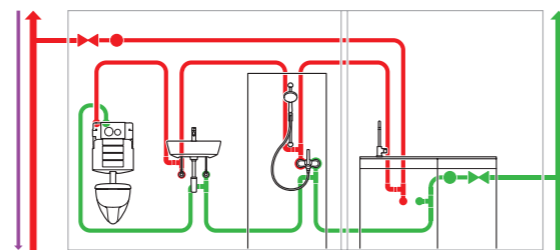
## STAGE 2
## REGULAR FLUSHING
★ ★

1. Optimised pipe installation
2. Automated water replacement via hygiene flush unit

---

*In addition to stage 1:*
- Use of an automated flushing device to ensure water replacement when not in use

---

**Additional benefits**
- Flushing programmes as required (time or interval programme)
- Ability to also flush hot water
- Configuration, function test, recording and maintenance via the Geberit Control app
- Planning flexibility afforded by different solutions for automated water replacement
- Connection to building automation via digital I/O
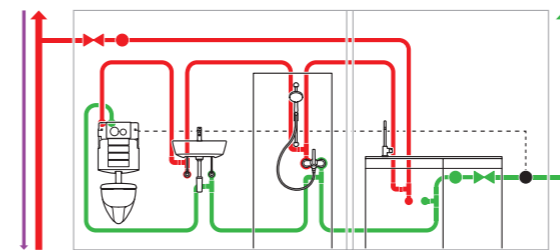
## STAGE 3
## CONTROLLED RINSING
★ ★ ★

1. Optimised pipe installation
2. Automated water replacement via hygiene flush unit
3. Targeted water replacement through the use of sensor technology

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*In addition to stage 2:*
- Observation of temperature curve and actual stagnation period

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**Additional benefits**
- Temperature-controlled flushing programme
- Water replacement ensured by means of volume measurement
- Ability to record the measured water volume

## STAGE 4
## IN THE FUTURE: CLEVER RINSING
★ ★ ★ ★

1. Optimised pipe installation
2. Automated water replacement via hygiene flush unit
3. Targeted water replacement by means of analogue sensor technology
4. Optimised operation through networking

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In future, the networked Geberit Hygiene System will bundle all information flows and offer seamless integration into the building automation system.

Products marked with the Geberit Connect symbol are suitable for use in the networked system.