

Operating instructions KEMPER KHS-Service-Handy¹ Figure 686 03 003 for KEMPER KHS-Hygienic Flushing Unit Figure 686 03 001 and Figure 686 03 002

¹ designed by Geberit



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General information

Target group and qualifications

These operating instructions are aimed at plumbers, trained service staff and technical staff.

Using the KHS-Service-Handy

These operating instructions include all the main information needed to use the KHS Service-Handy. Before starting work, read and stored these instructions and, if applicable, make them available to a trained specialist.

Storing the device

Store the device at a dry location at 5 - 40 °C. Do not lay it on a radiator or other heat source. Do not apply any pressure to the screen; doing so could damage it.

Contact with fluids

The KHS Service-Handy is not splashproof. If fluid penetrates into it, shut off immediately and remove the battery. Store the device for at least 72 hours with the battery compartment open in a dry, warm location and use only after that.

Terms

| Term | Explanation |
|-----------------------|---|
| Control | Electronics in KEMPER products that can be operated with the KHS Service-Handy. HERE: KHS-hygienic flushing unit, internal controller |
| Sensor | The sensor is located in the control and radiates infrared light. It detects the user of a product and can be recognised by the dark plastic window. |
| Infrared | Infrared is a light source that is invisible for people, has no sound waves or similar. |
| Menu | The menu appears on the KHS Service-Handy screen. It contains all available menu items. |
| Menu item | Menu items are individual positions in the menu that represent a function or a value; they can be adjusted or read. |
| Menu type | Menu types differentiate the kind of control for a menu point. |
| Unidirectional | Infrared signals are sent from the Handy to the control; the control does not reply to the Handy. The control mode to be selected for hygienic flushings Figure 686 03 001 and Figure 686 03 002 |

Symbols



Points out important information.



Do not throw into domestic waste; dispose properly!

Warranty

The respective national legal warranty applies.

Use as intended



These operating instructions describe the use of unidirectional controls. The KEMPER hygienic flushing is thus a unidirectional control.

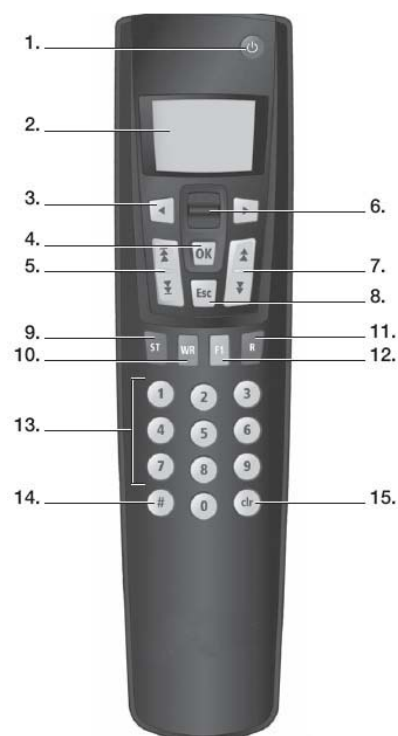
The KEMPER KHS Service-Handy is used to set and query the adjustment values in the KEMPER hygienic flushing. Use other than as intended precludes all warranty terms and liability claims for personal harm or property damage.

Function

The KHS Service-Handy communicates through an infrared interface with the hygienic flushing control. It must be aimed at the sensor at a distance of 10 - 30 cm to be able to make adjustments. Do not swing the KHS-Service-Handy away from the target while operating. It could erroneously trigger an unwanted control command.

Controls

- 1 Switching on/ Switching off
- 2 Screen, menu display, menu items, etc.
- 3 Left/Right, moves within a selection
- 4 Acknowledge a selection/input
- 5 Navigation, moves to the beginning/ end of the menu list
- 6 Navigation, moves up/down one menu point
- 7 Navigation, moves up/down one page (4 menu items)
- 8 Exit a menu item
- 9 Starts the save menu
- 10 Write; writes the saved settings to a control
- 11 Reset
- 12 F1, no function
- 13 Write values, 0 - 9
- 14 Hash key, no function
- 15 Delete; deletes one character in the input line each time it is pressed



Menu item for navigation

| Menu item | Description |
|---------------|--|
| - Commands | Goes to the first menu item, "Command" |
| - Program | Goes to the first menu item, "Program" |
| - Parameters | Goes to the first menu item, "Parameter" |
| - Counter | Goes to the first menu item, "Counter" |
| - Information | Goes to the first menu item, "Device info" |

Screen standby mode



The screen darkens if no key is pressed for 2 minutes. Pressing any key cancels this mode.

List of menu items

Only specialists are allowed to set the functions described here. The menu items listed here can be individually set with the KHS Service-Handy. The numbers and terms in the "Menu Item" column correspond to the display on the KHS Service-Handy screen. The LED signals in the control sensor transmits the values. For hygienic flushings, see "Hygienic Flushings" list

1. Operation



Before using the KHS Service-Handy for the first time, insert the batteries (see Point 3 P.9, Maintenance). The navigation button function is described in "Controls", (see Page 3) (e.g., buttons 1 to 15)

1.1 Output of values per LED signal



The control displays the saved values as an acknowledgment or for reading off. The values are transmitted through light pulses via the LED in the control sensor. Wait for the Service Handy to buzz, then start with counting.

Numerical values (Example)

LED flashes 7-times in a row (= Number 7)

Short break

LED flashes 3-times in a row (= Number 3)

Short break

LED flashes 6-times in a row (= Number 6)

The numerical value is 736.

The number "0" is indicated by the LED flashing

briefly 3-times (Washbasin fittings:

1 brief flash of the LED).

ON/OFF

LED flashes 1-time = ON

LED briefly flashes 3-times = OFF

1.2 Presets on the KHS-Service-Handy

- [Buzzer]

Buzzing sound volume

- [Contrast]

Set the screen contrast

- [Version]

Read the software version of the Service-Handy

- [Language]

Change the menu language to English [EN]/German

[DE]

1.2. (1) Switch on the KHS Service-Handy with Button 1; the display below appears

Display:

GEBERIT

00 Bidirect

08 Unidirect

Settings

1.2. (2) With Button 6 move to [Settings] and press "OK"

Display:

GEBERIT

Settings

00 Bidirect

08 Unidirect

1.2. (3) The display below appears. Now use Button 6 to select which settings you want to change. Use "OK" button to acknowledge each section. The selection has been made.

Display:

.0 Back

.1 Buzzer

.2 Contrast

.3 Version

1.2. (4) The desired settings have been made. With Button 6 move to [Back] and press "OK" The following display appears:

Display:

GEBERIT

00 Bidirect

08 Unidirect

Settings

1.2. (5) Switch off the KHS Service-Handy with Button 1

1.3 Querying and changing the settings for commissioning the hygienic flushing

1.3. (1) Switch on the KHS Service-Handy outside of the control's coverage range, The following display appears:

Display:

GEBERIT

00 Bidirect

08 Unidirect

Settings

Prerequisites

- Control is correctly installed and in operation

Press "Esc" to exit a menu item at any time.

If the contact is not exited after completion of operation, the control remains active for ten minutes until it independently aborts contact.

Always wait until the LED in the sensor stops flashing before making inputs.



1.3. (2) With Button 6, move to [Unidirect] and press "OK"


Display:

Unidirect

00 Back

10 Urinal

20 Valve

1.3. (3) With Button 40, move to hygienic flushing and press "OK". Aim the KHS Service-Handy at the control sensor at a distance of 10 - 30 cm, move to [ON/OFF] and press the "OK" button; in the hygienic flushing display appears: 

Important: Changes in the settings can only be made in this state.

Display:
HygFlushing
00 ON/OFF
 01 Back
 02 Command

Functional check of the hygienic flushing for cold and / or warm water connections through manual triggering: Proceed as described in 1.3.(3) and go to [Command] with Button 6. There, go to 21 Valve 2 or 20 Valve 1 and acknowledge with "OK". Press "OK" depending on the valve channel:
 - For cold water, open Valve 2:
 Cold water connection for Valve 2 opens
 - For warm water, open Valve 1:
 Warm water connection for Valve 1 opens
 If "OK" is pressed again, the flushing process stops.

1.3.(4) Making settings:
 The menu items are listed by number.
 (see Pages 7 and 8).

To reconfigure, e.g., the hygienic flushing of 2 valves (Factory setting) to 1 Valve, enter the inputs as below. Move to menu item (43) [AnzVentil] (number of valves) and press "OK"

Display:
 42 IntervalZ
43 AnzVentil
 OK?
 50 SumBetrT?

1.3. (5) Press "OK" and change the hygienic flushing of 2 valves (factory setting) with cursor button ► or ◀, e.g. to 1 valve = 1


Display:
 42 IntervalZ
43 AnzVentil 1 2
 50 SumBetrT?

then finish with "OK"



ATTENTION:
 The steps up to this point are required to commission the cold water flushing (1 valve, e.g., Valve 2).

1.3. (6) After making the settings Exit contact with the control. To do so, aim the Service-Handy at the control sensor, move with Button 6 to menu item [ON/OFF] and press "OK" until the hygienic flushing display shows the runtime until the next flushing

e.g. (180 hours) 

Display:
HygFlushing
00 ON/OFF
 01 Back
 02 Command

If contact is not exited, the control remains inactive for ten minutes until it independently ends the contact.

1.3. (7) Switch off the KHS Service-Handy using Button 1

1.4. Setting the flushing times

1.4.1 to 1.4.5: See steps in 1.3.1 to 1.3.3

1.4. (4) The settings can now be made. The menu items are listed by number.
 (see Pages 4 and 5).

Specify the flushing times in accordance with the tables on pages 10 and 11.

Set the hygienic flushing from the factory setting to the determined value. For cold water flushing, reset only Valve 2 to the determined value



In menu item (41), move to [IntSpZ V2] and press "OK"

Display:
 40 IntSpZ V1
41 IntSpZ V2
 OK?
 42 IntervalZ

1.4. (5) Press "OK" and enter the values, e.g., (180), with the numeric keys and finish with "OK".

Display:
 40 IntSpZ V1
41 IntSpZ V2
 42 IntervalZ
 43 AnzVentil

Display on the hygienic flushing:



1.4. (6) After making the settings, exit the contact with the control. To do so, aim the Service-Handy at the control sensor, move to menu item [ON/OFF] and press "OK"; the hygienic flushing display shows the runtime until the next flushing

1.5 Resetting all settings

Resets all settings to the factory settings.

Prerequisites

- Control is correctly installed and in operation
- Contact with the control has been made; see "Querying and changing settings"



The command for resetting cannot be undone

1.5. (1) Use Button 6 to move to the [Factory Settings] menu item.

```
21 Valve 2
23 Factory Settings
30 Operating mode
40 IntSpZ V1
```

Press "OK". Number of menu point can be found in the control operating instructions.

1.5. (2) The display below appears

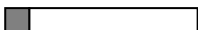
```
21 Valve 2
22 Factory Settings
R?
30 Operating mode
```

1.5. (3) Press Button "R"

```
22 ResetSens
23 Factory Settings
OK?
24 Cleaning
```

1.5. (4) Acknowledge with "OK". The reset command is sent to the control.

Aim at sensor!!



The following display appears if the transmission is finished

GEBERIT

```
00 Bidirect
08 Unidirect
Settings
```

Result

The settings are now set to the factory settings

1.6 Reset one individual setting

One individual setting is set to the factory setting.

Prerequisites

- Control is correctly installed and in operation
- Contact with the control has been made; see "Querying and changing settings"



The command for resetting cannot be undone.

1.6. (1) Move to the desired menu item and press "OK", in example [IntervalZ]

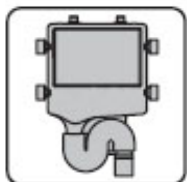
```
41 IntervSpZ
42 IntervalZ
43 AnzVentil
```

1.6. (2) Press Button "R" and acknowledge with "OK". The setting is reset to the factory setting. As an acknowledgement, a new value is issued in the sensor per LED signal.

Result

The setting is now reset to the factory setting.

2. Operating KEMPER hygienic flushings, UNIDIRECTIONAL



Menu item: Command

| Menu item [DE] | Description | Application | Adjustment range | Factory setting |
|-------------------------|--|---|-------------------------|-----------------|
| 20 [Valve 1] | Switch Valve 1. Opens the valve and closes it again on command | a) Functional check of the valve b) Flushing out stagnant water (stagnation) c) Winter draining | On = "OK" Off = "OK" | Off |
| 21 [Valve 2] | Switch Valve 2. Opens the valve and closes it again on command | a) Functional check of the valve b) Flushing out stagnant water (stagnation) c) Winter draining | On = "OK" Off = "OK" | Off |
| 22 [Factory Setting] | Factory settings. Sets all settings to the factory settings. | Problems with the settings | Press R | is executed |

Menu item: Program

| Menu item [DE] | Description | Application | Adjustment range | Factory setting |
|----------------|--|--|--|-----------------|
| 30 [OpMode] | Select operating mode. Choose between frequent and seldom flushing interval (see Parameter 42) | Select a program by pressing the buttons (3) | Frequent = [1] 4-72 hours Seldom = [2] 48-336 hours | Frequent [1] |

Menu item: Parameter

| Menu item [DE] | Description | Application | Adjustment range | Factory setting |
|-------------------|--|-------------|--|---|
| 40 [IntSpZ V1] | Interval flushing - Set Flush Time V1. | - | 30 - 999 seconds | 180 seconds |
| 41 [IntSpZ V2] | Set interval flushing - Flush Time V2 | - | 30 - 999 seconds | 180 seconds |
| 42 [IntervalZ] | Set interval time - flushing interval | - | [1]: 4 - 72 hours [2]: 48 - 336 hours | [1]: OP mode frequent 48 hours [2]: OP mode seldom 168 hours |
| 43 [NoValve] | Set the number of valves. | - | 1 Valve = [1] 2 Valve = [2] | 2 Valve [2] |

Menu item: Counter

| Menu item [DE] | Description | Issue |
|---------------------------|---|--------------|
| 50 [SumBetrT?] | Number of operating days in total. Shows the number of operating days since commissioning. | Days |
| 51 [SumIntSp1] | Number of interval flushings Valve 1 Total. | Flushings |
| 52 [SumIntSp2] | Number of interval flushings Valve 2 Total. | Flushings |
| 53 [Error V1] | Number of errors Valve 1 Total. Shows the number of errors since commissioning. | Fault |
| 54 [Error V2] | Number of errors Valve 2 Total. Shows the number of errors since commissioning. | Fault |

Menu item: Device info

| Menu item [DE] | Description | Issue |
|---------------------------|---|--------------|
| 60 [SWVersion] | Software version. Shows the software version of the control (e.g. [0312] = Version 3.12). | [...] XXZZ |

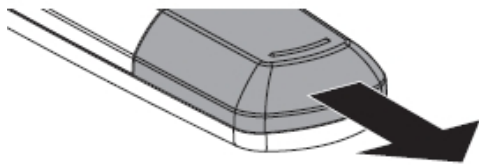
3. Maintenance

Insert or replace battery

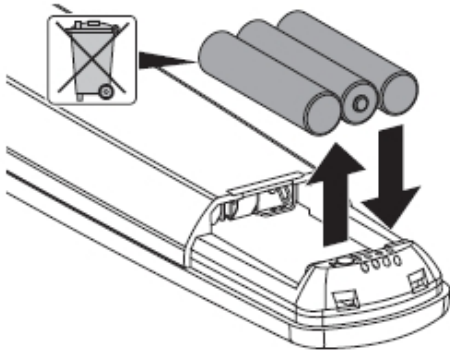
Prerequisites

- Three new batteries, type AAA, 1.5 V are available. (Batteries can be purchased in shops)

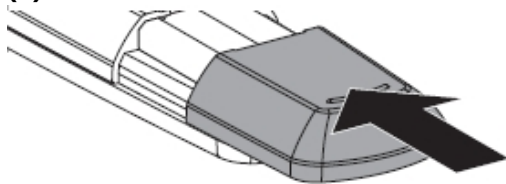
(1)



(2) Remove batteries and replace with new ones. Properly dispose used batteries



(3)



4. Disposal

Ingredients

This product conforms with the requirements in EU Directive 2002/95/EEC RoHS (Restriction of Hazardous Substances).



Waste disposal

Based on EU Directive 2002/96/EC WEEE (Waste Electrical and Electronic Equipment), manufacturers of electrical devices are obligated to take back used devices and to properly dispose them. The symbol indicates that the product must not be disposed together with domestic waste. Return old devices directly to Kemper for proper disposal.

5. Selecting flushing times based on pipe diameter and line lengths

Table 1: Flushing time t (s) for Cu and stainless steel pipelines for cold and warm:

| l (m) | t (s) d 15 | d 18 | d 22 | d 28 | d 35 |
|-------|---------------|------|------|------|------|
| 5 | 6 | 8 | 13 | 21 | 33 |
| 6 | 7 | 10 | 15 | 26 | 40 |
| 7 | 8 | 12 | 18 | 30 | 47 |
| 8 | 9 | 13 | 20 | 34 | 54 |
| 9 | 10 | 15 | 23 | 39 | 60 |
| 10 | 11 | 17 | 25 | 43 | 67 |
| 11 | 12 | 18 | 28 | 47 | 74 |
| 12 | 13 | 20 | 30 | 51 | 80 |
| 13 | 14 | 22 | 33 | 56 | 87 |
| 14 | 15 | 23 | 35 | 60 | 94 |
| 15 | 17 | 25 | 38 | 64 | 100 |
| 20 | 22 | 33 | 50 | 86 | 134 |
| 25 | 28 | 42 | 63 | 107 | 167 |
| 30 | 33 | 50 | 75 | 129 | 201 |
| 35 | 39 | 59 | 88 | 150 | 234 |
| 40 | 44 | 67 | 101 | 171 | 268 |
| 45 | 50 | 75 | 113 | 193 | 301 |
| 50 | 55 | 84 | 126 | 214 | 335 |
| 55 | 61 | 92 | 138 | 236 | 368 |
| 60 | 66 | 100 | 151 | 257 | 402 |
| 70 | 77 | 117 | 176 | 300 | 469 |
| 80 | 88 | 134 | 201 | 343 | 536 |
| 90 | 99 | 151 | 226 | 386 | 603 |
| 100 | 111 | 176 | 251 | 429 | 670 |

Table 2: Flushing time t (s) for Geberit Mepla pipelines for cold and warm:

| l (m) | t (s) d 16 | d 20 | d 26 | d 32 | d 40 |
|-------|---------------|------|------|------|------|
| 5 | 4 | 7 | 13 | 22 | 36 |
| 6 | 5 | 9 | 16 | 27 | 43 |
| 7 | 6 | 10 | 18 | 31 | 50 |
| 8 | 7 | 12 | 21 | 35 | 57 |
| 9 | 8 | 13 | 24 | 40 | 64 |
| 10 | 9 | 15 | 26 | 44 | 71 |
| 11 | 10 | 16 | 29 | 49 | 78 |
| 12 | 10 | 18 | 31 | 53 | 85 |
| 13 | 11 | 19 | 34 | 57 | 93 |
| 14 | 12 | 21 | 37 | 62 | 100 |
| 15 | 13 | 22 | 39 | 66 | 107 |
| 20 | 17 | 29 | 52 | 88 | 142 |

| l (m) | t (s) d 16 | d 20 | d 26 | d 32 | d 40 |
|-------|---------------|------|------|------|------|
| 25 | 22 | 37 | 65 | 111 | 178 |
| 30 | 26 | 44 | 79 | 133 | 214 |
| 35 | 30 | 52 | 92 | 155 | 249 |
| 40 | 35 | 59 | 105 | 177 | 385 |
| 45 | 39 | 66 | 118 | 199 | 321 |
| 50 | 43 | 74 | 131 | 221 | 356 |
| 55 | 48 | 81 | 144 | 243 | 392 |
| 60 | 52 | 88 | 157 | 265 | 427 |
| 70 | 61 | 103 | 183 | 310 | 499 |
| 80 | 69 | 118 | 209 | 354 | 570 |
| 90 | 78 | 132 | 236 | 389 | 641 |
| 100 | 87 | 147 | 262 | 442 | 712 |

Select the following sequence to set the flushing time and flushing interval:

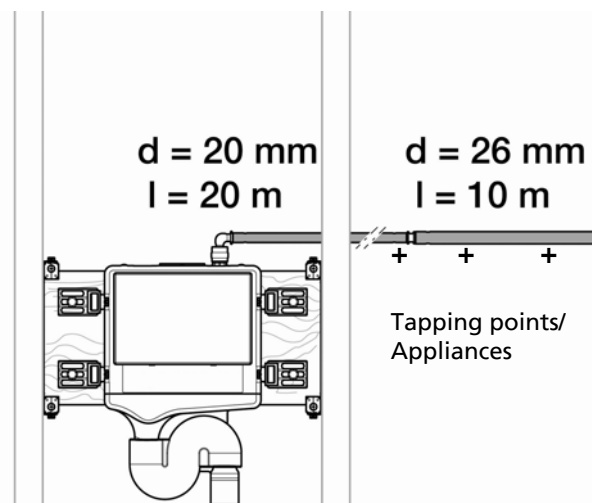
1. Determine the flushing time
2. Set the flushing time and flushing interval with the KHS Service Handy as described in 1.4

The selected preset settings are retained even if the power supply is interrupted.



Example for determining the flushing time:
e.g. for a single feed line with various pipe diameters up to the riser line:

- (5) (1) Determine the line length and dimension for cold water

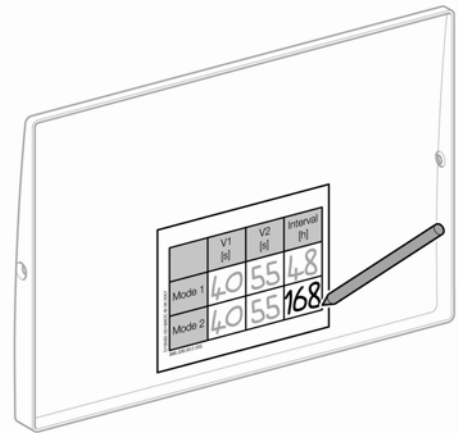


- (2) Find the determined flushing times from Table 1 or Table 2 correspondent to the pipe system

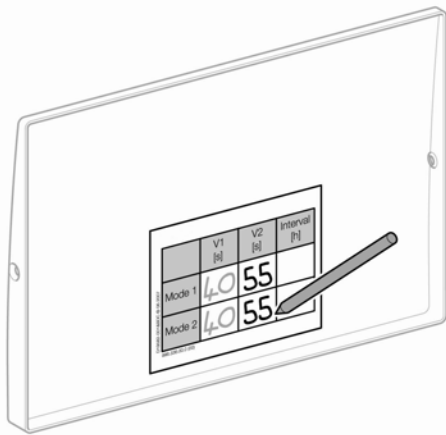
5. (3) e.g. Flush Time V2 (cold water): 26s + 29s = 55s

| l (m) | t (s) | d 20 | | d 40 | |
|-------|-------|------|------|------|------|
| | | d 16 | d 26 | d 32 | d 40 |
| 5 | 4 | 7 | 13 | 22 | 36 |
| 6 | 5 | 9 | 16 | 27 | 43 |
| 7 | 6 | 10 | 18 | 31 | 50 |
| 8 | 7 | 12 | 21 | 35 | 57 |
| 9 | 8 | 13 | 24 | 40 | 64 |
| 10 | 9 | 15 | 26 | 44 | 71 |
| 11 | 10 | 16 | 29 | 49 | 78 |
| 12 | 10 | 18 | 31 | 53 | 85 |
| 13 | 11 | 19 | 34 | 57 | 93 |
| 14 | 12 | 21 | 37 | 62 | 100 |
| 15 | 13 | 22 | 39 | 66 | 107 |
| 20 | 17 | 29 | 52 | 88 | 142 |
| 25 | 22 | 37 | 65 | 111 | 178 |

In operating mode 2: Note the entered value for the flushing interval on the label on the back (e.g., every 7 days = 168 hours)

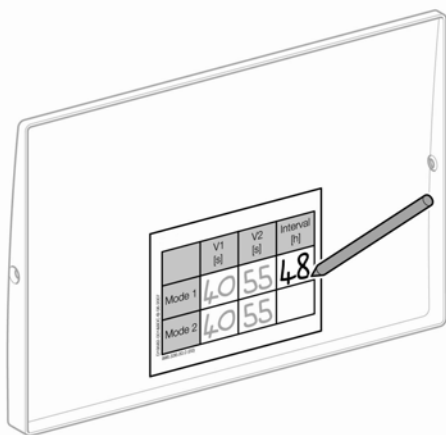


5. (4) Note Flush Time V2 on the label on the back of the of the cover

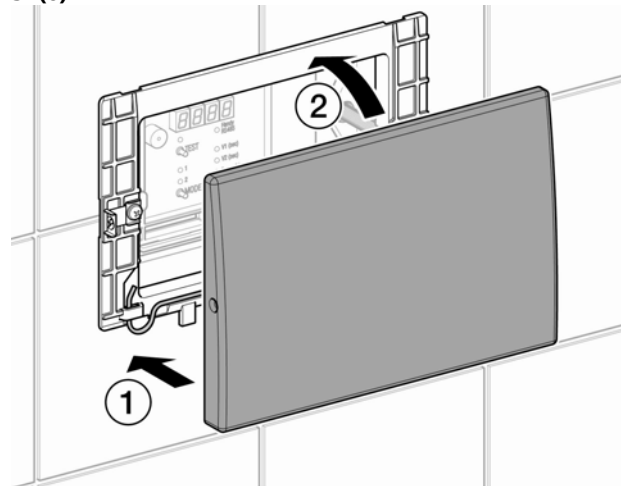


For WDW V1: Determine the flushing times for CDW V2 from Table 1 or 2 and write on the label under V1.

5. (5) In operating mode 1: Note the entered value for the flushing interval on the label on the back (e.g., every 2 days = 48 hours)



Replace the cover
5. (6)



5. (7) Secure the cover against unauthorised activation:
Fixate both right and left Allen screws on the cover.

