IMPORTANT

Before Installation:

- Product can only be installed by a licensed plumber.
- All local O H & S procedures must be followed.
- Warranty claims will be dependent on the system being installed correctly.
- Familiarise yourself with the install procedures manual. If anything is not clear, please call your distributor or project manager for clarification.
- Confirm details with the site contact/customer. Check toilet access and any other issues that may arise from turning off the water supply and confirm with site contact before starting work.
- Confirm that water does not pool in the urinal. If it does, installation may not be appropriate.
- Please make sure any other components needed for installation, such as threaded risers, self sealing flex hose or adaptors are available before commencing.
- Installation must comply with all relevant Water and Building Regulations.
# Contents

**Introduction** ................................................................................................................................. 3

**Installation Hardware Overview** ................................................................................................ 3
- Output Hardware .............................................................................................................................. 3
- Input Hardware ............................................................................................................................... 4
- Battery powered timer .................................................................................................................. 4
- Mains Powered Timer ................................................................................................................... 4
- Flow Control Valve/Input Filter ................................................................................................... 4
- Physical Air Gap .......................................................................................................................... 4

**What is Supplied with the System?** ............................................................................................. 5
- For the Plumber ............................................................................................................................ 5
- For the Customer .......................................................................................................................... 5
- Additional Installation Items ......................................................................................................... 5
- Flush Flow Rates/Volumes ............................................................................................................ 5

**Installation** .................................................................................................................................. 6
- Eco-Sleeve Unit: Wall Hung Urinals .............................................................................................. 6
- Eco-Sleeve Unit: Troughs ............................................................................................................... 6
- Solenoid, Timer, Air Gap: External Cistern ................................................................................... 8
  - Typical Materials ......................................................................................................................... 8
  - External Cistern Notes ............................................................................................................... 9
- Solenoid, timer, Air Gap: In-wall Cistern ...................................................................................... 10
- Solenoid, Timer, Air Gap: Mains Inline Feed .............................................................................. 11

**Replacement of Eco-Sleeve** .......................................................................................................... 11

**UNIVERSAL FLUSH TIMER** ...................................................................................................... 12
- Replacing the Battery .................................................................................................................... 12
- Testing the Settings ....................................................................................................................... 13
- Setting the Old UC2 Timer .......................................................................................................... 14

**AC Timer Module** ......................................................................................................................... 15
- Installation ..................................................................................................................................... 15
- Setting the Timer .......................................................................................................................... 15
- Testing the Settings ...................................................................................................................... 15

**Special Conditions** ...................................................................................................................... 16
- High Inlet Pressure ....................................................................................................................... 16
- Low Inlet Pressure ......................................................................................................................... 16
- Non Level Troughs ........................................................................................................................ 16

**Frequently Asked Questions** ...................................................................................................... 17
- Replacement of the Eco-Sleeve .................................................................................................... 17
- Urinal Smells ............................................................................................................................... 17
- Flushing ......................................................................................................................................... 17

**Identifying Ceramic Urinals and the Appropriate Adaptor** .......................................................... 18
Introduction

The Eco-Sleeve urinal system uses bacterial/enzyme action (bacteria contained within the Eco-Sleeve unit) in conjunction with a water management system (solenoid & timer) to effectively reduce water consumption, eliminate smells & reduce blockages in urinals.

The flushing is replaced by an “activation rinse” every 6 hours by the timing/solenoid mechanism. Eco-Sleeves are disposable & replaced at approximately 3 month intervals in urinals. The complete system is low maintenance, economical, easy to install and maintain and saves 95% of a standard systems water consumption.

Depending on appropriate access, nearly all types of existing urinals can be catered for. This manual gives several typical installations and more info is available from the person who sold you the system.

Once installed correctly, the Eco-Sleeve system is reliable and efficient, please read through these instructions to familiarise with the appropriate configuration that suits your installation.

Installation hardware overview:

The install hardware can be broken into 2 areas, output hardware and flushing or input hardware.

Output Hardware

Output hardware is simply the Eco-Sleeve canister and an appropriate waste adaptor for the urinal drain to adapt the 40MM Eco-Sleeve.

Sanitary grade neutral cure silicon is used to install adaptors in urinal outlets.

Selection of output adaptors for common ceramic and slab applications, custom adaptors can also be ordered. These are installed with either sanitary silicon or epoxy jointing material.

One Eco-Sleeve and waste adaptor is installed into each urinal outlet.
Input Hardware
The input mains water is supplied to a solenoid valve that is controlled by a timer. The output of the solenoid valves is then connected to a physical air gap, and then to the existing flush sparge pipe and spreader bars or roses.

The hardware can be installed into existing cisterns, mounted in a wall box, or replace an in wall cistern. Many variations are possible but they usually straight forward.

One solenoid needs to be fitted for every existing cistern

Two types of timers are available, a battery powered timer that operates a DC solenoid (1) and a mains powered timer that drives AC solenoids (up to 3)

Battery (9Volt) Timer /Solenoid

The Universal flush timer is powered by a 9v battery and is attached to a solenoid valve by two wires which are polarity sensitive. The timer can be programmed to open the solenoid valve for a predetermined length of time at set hourly intervals (usually every 6 hours).

The battery should be replaced annually.

NOTE: The Universal flush timer is pre-programmed to flush for 8sec every 6 hours.

Mains Powered timer and Solenoid

The mains power, or AC Timer is connected using a transformer. It should be installed in a dry location, preferably on a flat surface, such as a beam in the wall cavity or roof space. Unlike the Universal flush timer, the AC Timer runs on a 24 hour sequence that begins when power is applied.

Resetting the timer is a simple matter of disconnecting and reconnecting the power supply.

Physical Air gap

Plumbing regulations require a physical air gap to be installed if directly connecting the solenoid valve to mains pressure. It is not required if connected to a header tank.

Typical physical air gap installation in an external cistern.
What is supplied with the system?

Typically the Eco-Sleeve system will have been quoted by a project manager or plumber and the appropriate hardware for the job ordered. This may consist of:

**For the Plumber:**

- Eco-Sleeve
- Waste adaptor for each outlet standard sizes are 50mm through to 100mm - some ceramic urinals require custom adapters. Adapters for most urinals are available from APP.
- Physical air gap for each cistern.
- Solenoid valve either Battery or 24 Volt AC- one per cistern.
- Timer - either battery or mains powered.
- Install manual.
- Silicon for installing adaptor plate.

**For the Customer:**

- APP multi purpose urinal cleaner concentrate
- Spray bottle
- Wall Stickers for urinal and cleaners cupboard

**Additional Installation Items**

Additional items may be needed in order to complete the installation. These should be supplied by the plumber may include: Self sealing flexi hose (easy hooker), stop tap, threaded pipe etc.

**Flush Flow Rates/Volumes:**

Recommended water flow for Eco-Sleeve installation. *Over flushing is NOT recommended!*

<table>
<thead>
<tr>
<th>Urinal Size</th>
<th>Men</th>
<th>Average Flush / Rinse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single/Bowl</td>
<td>1</td>
<td>1.5L-2.5L litres per flush</td>
</tr>
<tr>
<td>Twin</td>
<td>2</td>
<td>3L-5L litres per flush</td>
</tr>
<tr>
<td>Three</td>
<td>3</td>
<td>4.5L-7.5L litres per flush</td>
</tr>
<tr>
<td>Large</td>
<td>4</td>
<td>6-10 litres per flush</td>
</tr>
<tr>
<td>Extra Large</td>
<td>5</td>
<td>7.5-12.5 litres per flush</td>
</tr>
</tbody>
</table>
Installation

Eco-Sleeve unit: Wall hung urinals.

**Note:** Do not force plastic collar into urinal as this may distort the centre hole and make the Eco-Sleeve hard to insert. If collar is hard to fit, shape with file or knife before installing or use the 50mm rubber waste adaptor.

Silicon should cure for a minimum of 8 hours before use as the product may take on a yellow colour.

Eco-Sleeve unit: Troughs.

**IMPORTANT:** The Eco-Sleeve does not require an extension as it has its own built in odour lock. Please also confirm that urine is not pooling in the urinal this will cause problems and needs to be addressed before the system is fully installed.

**DO NOT glue or seal.**
Solenoid, timer, air gap: External Cistern.

This section shows a typical installation in an external cistern. Other possible installs are shown on the following pages. The cistern could be removed and a wall box installed but this often causes more problems in making good.

It is important that the timer is accessible to replace the Battery and is mounted as high as possible in the cistern to avoid any possible splashing from the physical air gap.

Typical Materials:

- Approx. 300mm continuous thread tubing
- Right angle bend
- 150mm ½” copper tube
- 1 x nut and olive ½”

**NOTE:** Ensure outflow ‘all thread’ pipe from solenoid descends directly over sparge outlet. This will maximize pressure into the urinal spreader & prevent potential splash-back onto the timer.

Alternatively the valve can be mounted over the input port and an “Easy hooker” flexi pipe can be used to connect to the physical air-gap.

It is very important to test flow by activating the timer self test mode to confirm input pressure does not overwhelm sparge pipe. Please see timer instructions for self test mode.
Solenoid, timer, air gap: External Cistern, continued.

Other possible configuration – Fully installed Solenoid/timer & air gap. Note set up shown with old style UC2 Timer and Brass solenoid.

External Cistern notes:

1. Fit solenoid/timer as high in the cistern as possible (whilst still allowing lid to be fitted). This will distance the unit from any possible splashing.

2. Fit elbow directly above outlet so that piping descends directly into sparge outlet. This will optimise flow & therefore spread across the urinal slab.

3. Confirm that the input pressure does not exceed the capabilities of the output pipe.

4. Adjust timer and input flow for correct flush ensuring water does not “back up” into air gap.

5. Check operation of solenoid by running a timer test sequence (See timer instructions: pages 13-15)

6. Fit the Eco-Sleeve waste adaptor & without any gaps around its edge (using appropriate Silicone).
   It is IMPORTANT that any fluid flows only through the Eco-Sleeve.

7. Once Eco-Sleeve is fitted ensure cleaning staff are aware of the new cleaning regime requirements. Only special cleaning agents are suitable. Other agents will destroy bacterial activity in the Eco-Sleeve.
Solenoid, timer, air gap: In-wall cistern

In wall mounted cistern.

1. Remove cistern cover (see picture below)
2. Install stop tap if not fitted, and install timer, solenoid and physical air gap to output sparge pipe.
3. Purge input line before connection to ensure no debris enters the solenoid valve.
4. Connect easy hooker flexible pipe to solenoid valve input.

Set up shown with old style UC2 timer and brass solenoid.

Typical installation in older style in-wall system. Direct copper connection to solenoid valve and sparge extension piece fitted to assist correct flush volume.
Other Installations - Solenoid, timer, air gap: Mains inline feed.

Example 1: Autotimer System

Urinal with in roof timer and backflow protection

External fitting of solenoid & timer.

Set up’s shown with old Style UC2 timer and brass solenoid.

Example 2: Behind the wall mains water inlet

Urinal with spreader bar

Behind the wall installation.

Flushometer System re-plumbed for direct injection.

Timer and solenoid mounted in lockable Stainless Steel wall box.
Replacement Of Eco-Sleeve:
For new installations the gel composite size (green gel) within the Eco-Sleeve should be monitored each month to establish a typical usage pattern.

Average life is 3 months depending on type of urinal, traffic & water volumes.

To change the Eco-Sleeve simply:
1. Carefully remove Eco-Sleeve from the waste adaptor & replace with a new unit as shown below.
2. To maintain the odour lock. Please make sure this is replaced firmly.

Showing the plastic shield that creates the Eco-Sleeves unique odour lock design.

Gently Insert the Eco-Sleeve in the waste adaptor.

The Eco-Sleeve fully fitted.

A laminated cleaners wall sign may is provided and should be mounted in the cleaners cupboard.
Pack contents: Timer module.

Select a safe dry location with access to both the control module & solenoid valve for maintenance. Connect the solenoid valve to the long leads using the red quick connects. **CAUTION. Correct polarity must be observed. The positive lead with the black line on the insulation of the wire must be connected to the positive terminal on the solenoid valve coil, black terminal'. If this is not done, the operation of the valve be reversed, i.e.; it will open when it should close, etc.

**Starting the Unit.** When the battery is first connected to the module, it will flush once after a 16 second delay & then go into its selected program. The unit is shipped configured to flush for 8 seconds every 6 hours. To cause a flush at any time, disconnect the battery for 10 full minutes & then reconnect the battery. The unit will flush once after a delay of 16 seconds from power on & then enter into the program as selected on the switches. The flush length will be as selected by the switches.

**Programming the Timer.** The control module can be re-programmed to flush as required by setting miniature switches located inside the module on the printed circuit assembly. The period of time between each flush & the length of each flush & therefore the amount of water delivered is selectable, as detailed in the table below. These details are also on a label attached to the control module

**Access to the Programming Switches.** Disconnect the module for the power pack. Remove the 4 screws in the lid & rotate the printed circuit assembly out of the box. Take care not to damage the assembly.

**Programming the Flush Sequence.** Fixed to case of the unit & shown below is an explanation of the operation of the switches. Select the desired setting & position the switches. Do not use excessive force or damage will result. The next time the unit flushes it will assume the new program. To cause a flush immediately, disconnect the battery for 10 full minutes. When the battery is reconnected, the unit will flush after 16 seconds & then assume the selected program.

**Changing the Battery.** The battery should be changed every 12 months with a first quality alkaline battery, 9v, type 522. Open the case of the unit by removing the 4 screws & disconnect the battery. Leave the battery disconnected for 10 full minutes to allow the unit to completely drain of power. Then re-connect the new battery & position it in the case under the printed circuit assembly so that it is no higher than the sides of the plastic case. Replace the lid & the 4 screws. Do not put excessive force on the printed circuit assembly, especially if the battery is not correctly positioned under the printed circuit assembly. The unit will flush after 16 seconds & then resume its program as selected by the internal switches. Re-place the lid to the case using the 4 screws.

<table>
<thead>
<tr>
<th>Flush Interval</th>
<th>SW1</th>
<th>SW2</th>
<th>SW3</th>
<th>Flush Period</th>
<th>SW4</th>
<th>SW5</th>
<th>SW6</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Hrs</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>4 Secs</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>6 Hrs</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
<td>6 Secs</td>
<td>On</td>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>8 Hrs</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
<td>8 Secs</td>
<td>Off</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>10 Hrs</td>
<td>On</td>
<td>On</td>
<td>Off</td>
<td>10 Secs</td>
<td>On</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>12 Hrs</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
<td>12 Secs</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
</tr>
<tr>
<td>18 Hrs</td>
<td>On</td>
<td>Off</td>
<td>On</td>
<td>16 Secs</td>
<td>On</td>
<td>Off</td>
<td>On</td>
</tr>
<tr>
<td>24 Hrs</td>
<td>Off</td>
<td>On</td>
<td>On</td>
<td>60 Secs</td>
<td>Off</td>
<td>On</td>
<td>ON</td>
</tr>
<tr>
<td>48 Hrs</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>120 Secs</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
</tbody>
</table>
Setting of the previous UC2 Timer

Step 1 - Connecting the Battery

After fitting the battery, promptly proceed to Step 2.

Step 2 - Initiating the Manual Set-up

“S” for “set-up” will automatically display after the battery has been connected.

Step 3 - Selecting the Operating Period

Press “F” button once and “A” will alternately display with a numeric value. (A 1)

Press “A” once so that display shows A 2

A - 1 = 1 Hour
A - 2 = 1 Day

Step 4 - How Many Flow Events per Operating Period

Press “F” button once and “b” will display alternately with a numeric value.

Press “A” 3 times until display shows “b 0 4”

This will set the timer to allow water to flow across the urinal face 4 times a day

Step 5 - Water Flow Time Value Selector

Press “F” button once and “C” will alternately display with a numeric value.

To adjust the time value press “A” button to select the time mode value to be multiplied. Display reads:

C 1 = 1 second
C 2 = 15 seconds

Step 6 - Water Flow Time Multiplier

Press “F” button once and “d” will alternately display with a numeric value. To adjust the time value, press button “A” to select the total time the valve is required to open. For example:

C 1 x d 1 = 1 x 1 = 1 second
C 1 x d 15 = 1 x 15 = 15 seconds
C 2 x d 2 = 2 x 15 = 30 seconds

Finally, press “F” once and a long beep will sound to confirm that your settings are OK.
AC Timer Module APP 43, APP 44, APP 45

As well as the DC battery operated timer, a 240 Volt AC Mains powered timer is also available. Models available are APP 43 (1 valve), APP 44 (2 valve) and APP 45 (3 valve).

This timer is able to control up to three separate 24 Volt AC solenoids which will be activated in sequence to allow the maximum water pressure to be available during a flush sequence.

This timer is not set to time of day, when power is applied, the timer will start and run the 24 hour sequence every day. If a power failure happens, the timer will start the sequence from when the power was restored.

As for the battery operated solenoid, the AC solenoid needs to be installed with the supplied air gap to comply with plumbing regulations.

The timer is supplied with a 240 volt AC plug pack that should be connected to an appropriate power point installed by a licensed electrician.

The solenoids are driven by 24 Volt AC which does not require an electrician to connect. Connections from the timer to the solenoid are via the supplied cable and automotive type spade connectors.

As the solenoids are driven by AC there is no need to worry about polarity of the connections.

Installation

The timer should be installed in a dry location preferably on a flat surface to avoid the cables being damaged. Typical locations may be in a roof cavity or tapped to a beam or support for in duct applications.

Route the wires to the solenoid using cable ties or tape as required making sure that there is no mechanical strain on the wires that may result in the connectors being pulled from the solenoid valve.

Setting the Timer

As shown in the diagrams above, the case must be opened to set the timer switches. 4 small screws need to be removed and then the exposed circuit board flipped over to reveal the switch assembly. Set the appropriate time and reassemble box, it is preset at 8 seconds every 6 hours.

The timer can be set for a flush duration of 6, 8, 12 or 16 seconds and a flush interval of 2, 4, 6, 8, 10, 12, 24 or 48 hours.

Switches 1, 2 and 3 control the flush duration and switches 4 and 5 set the flush interval. It is a simple process to check the chart on the timer case and set the switches accordingly.

Testing the Settings

To test the system turn on the power and after a 16 seconds the solenoid sequence will be activated.
Special conditions

In some circumstances there may need to be extra components fitted or procedures followed to make sure the Eco-Sleeve system can be installed correctly.

High inlet pressure

The solenoid valves are designed to work from 10 to 1000kpa we recommend the pressure is checked to make sure it is in the middle of this range and if not an approved pressure reduction device fitted to the supply line.

If appropriate the supplied inline flow control valve can be modified to produce a flow rate appropriate to a normal flush volume. These flow control valves are available in steps of 2 from 2 litres per minute to 16 litres per minute. Please contact your supplier for further information.

Normally adjusting the time the solenoid is operating will be sufficient to overcome any issues.

Please note that the solenoid valves require more than 35kpa on their input so that the valve is able to close correctly.

Low inlet pressure

Sometimes low pressure will not allow enough water to pass through the solenoid to saturate the existing flush pipe and spreader bars/roses. In this case the cistern can be modified with an auto siphon flushing device and the solenoid used to feed the cistern externally.

Non Level Troughs

This creates an issue with urinal pooling in the bottom of the trough. This will have always been a problem and generally will not go away with the Eco-Sleeve installation. Unless the plumber is able to modify the outlet we recommend that a full urinal replacement may be the only way to correct the problem.
Frequently Asked Questions

Replacement of the Eco-Sleeve

“How do I know when the Eco-Sleeve needs to be replaced?”

• The Eco-Sleeve will need replacing at least every 3 months. Urinals with more than one cistern and high volume use urinals will require more frequent replacement. Check the amount of biological (green) material remaining in the Eco-Sleeve by simply lifting the Eco-Sleeve out of the waste outlet and checking the underside of the cap.

Urinal Smells

“Why is there a smell coming from the urinal outlet?”

• The Eco-Sleeve may have expired. Remove the Eco-Sleeve from the outlet and check the level of biological material remaining.

• Check the type of cleaning products used. Friendly bacteria may have been killed by products that contain bleach and other harsh chemicals. Ensure that the all purpose urinal cleaner is being used in the regular cleaning procedure.

• Flushing too often. This dilutes the amount of friendly bacteria that break down the Uric Acid. Adjust the timer so that flushing frequency is correct for your installation.

Flushing

“Why is the urinal not flushing?”

• The system probably is flushing- it happens every 6 hours. If you still suspect something is wrong, check the operation of the timer by operating self test mode. If this does not work replace the battery.
Identifying Ceramic Urinals and the appropriate adaptor.

- **TORRES (CAROMA)**
  - Part No: APP 21

- **INTEGRA (CAROMA)**
  - Part No: APP 24

- **LEDA (CAROMA)**
  - Part No: APP 28

- **ABSAUG (VILLEROY & BOCH)**
  - Part No: APP 29
IMPORTANT
CLEANING SCHEDULE FOR THE ECO-SLEEVE URINAL SYSTEM

Dear Cleaner,

The Eco-Sleeve System is simple and effective and does require the following:-

- Clean Daily with APP all purpose urinal Cleaner (APP 81) - **DO NOT USE** bleach, disinfectant or any other cleaning product in the urinal or urinal area. Remove rubbish as usual from urinal.

- Change the Eco-Sleeve every 3 months.

- The normal flush rate is 4 - 6 hours - Please do not change or turn off water management system.

Queries or for details of your local Eco-Sleeve Supplier call

03 9362 4614

The Eco-Sleeve system eliminates smells, cuts water use and cuts costs.

Thank-You from **APP**
Helping You Help the Environment!