Watchman
ELECTRONICS

# WATER GUARD

## Series 3

## Urinal Water Control


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# WATER GUARD

## Series 3

## Urinal Water Control


# Installation Instructions

**Product Description**

Water Guard is a water saving device that reduces water usage by least 60% over conventional cistern tank installations. Water Guard offers the building owner complete water management and hygiene control for the urinal. Water Guard is a microwave sensor, that detects movement of people using the urinal and then initiates flush cycle. A set of switches located inside the Water Guard give the building owner various options on cycle times, flush duration and after hours flushing

Solenoid Valve connected to the Water Guard

## 1.0 CONTENTS OF STANDARD WATER GUARD INSTALLATION KIT

1. 1 x Water Guard control unit with adjustable mounting bracket
2. 1 x 24 volt AC power pack
3. 2 x sets of Installation Instructions (this one for cistern tank installations and one for direct connection to potable water)
4. 1 x 19mm 24V AC solenoid valve (if ordered)
5. 1 x Guarantee form

## 2.0 GENERAL DESCRIPTION

Water Guard consists of two main items. A sensor control unit and a solenoid valve. The combination allows controlled flushing of mens urinals to prevent unnecessary water wasteage.

## 3.0 OPERATING PRINCIPLE

On detection of a person stepping up to the urinal, the Water Guard will initiate a flush after a delay period. The delay period is set on site to suit the client's needs. Once the flush has finished, a new cycle will not occur until another person is detected.

Water Guard is programmable to suit individual customers needs and the options are shown in Section 6

## 4.0 PLUMBING INSTALLATION

This Water Guard is pre-set to be installed in conjunction with a cistern tank. IT IS YOUR RESPONSIBILITY TO ENSURE THE SWITCHES ARE RE-SET TO SUIT AN INSTALLATION WITHOUT A CISTERN. Refer Section 6.0

All plumbing should be completed by a qualified tradesman.

There are two methods of installing Water Guard without a cistern tank.

a) Using a non potable supply tank - See Section 4.1

b) Using a Zurn mains pressure flushing valve (see separate literature) - refer Section 4.2

Under no circumstances should a urinal be installed without complying with current building regulations and/or territorial approvals. If in doubt contact your local Building Authority. The methods described in Sections 4.1 and 4.2 comply.

4. **Installations Using Mains Supply or Overhead Tank**

Provided the roof tank complies with backflow protection requirements, the potable water is protected by the airgap in the tank. Water Guard will control the flushing directly without the need for subsequent cistern tanks.

The pipe and valve sizing should be designed by a suitably qualified person, in order to acheive a flush volume of 2.5L/bowl (or 4.5L per stall of slab urinal). 1 stall = 600mm urinal width. Water Guard will open the solenoid valve for either 7 or 15 seconds (refer Section 6.0) We recommend bowls are flushed for 7 seconds and slab urinals for 15 seconds.

Solenoid valves can be supplied as 13, 19 and 25mm sizes as standard. All operate in the 10 - 1000kPa range but we recommend setting pressure within the 300 - 400kPa range for optimum performance. Use a Wilkins Model NR3 pressure reducing valve if necessary. Where very low pressures exist, ensure pipe sizing is sufficient to compensate. Water pressure should not be less than 100kPa.

Valves should be assembled as per Diagram 1

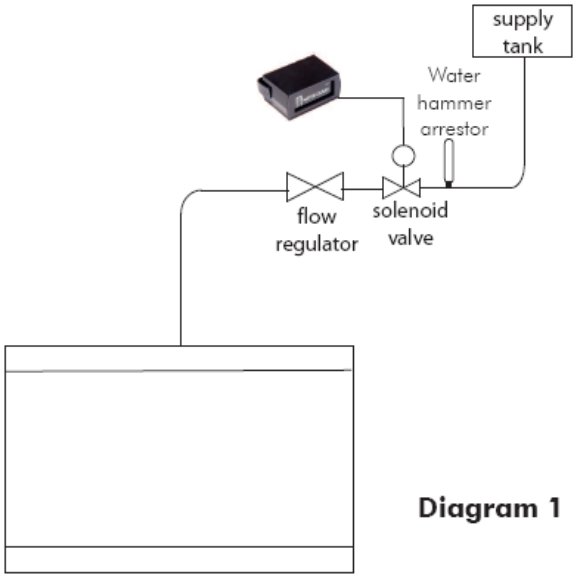
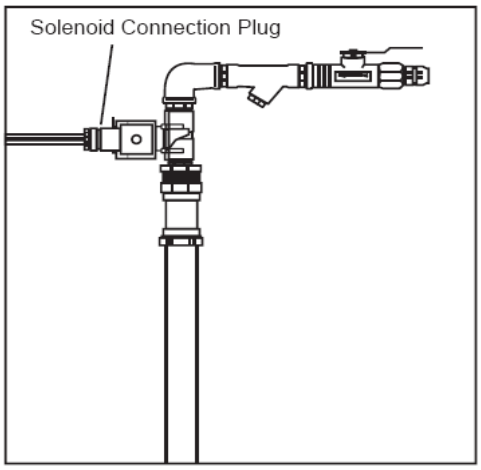
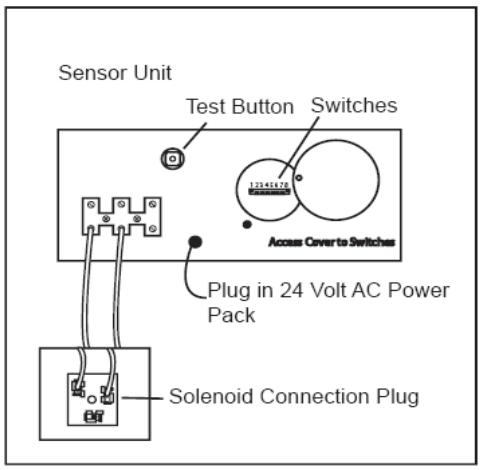



**Diagram 1**

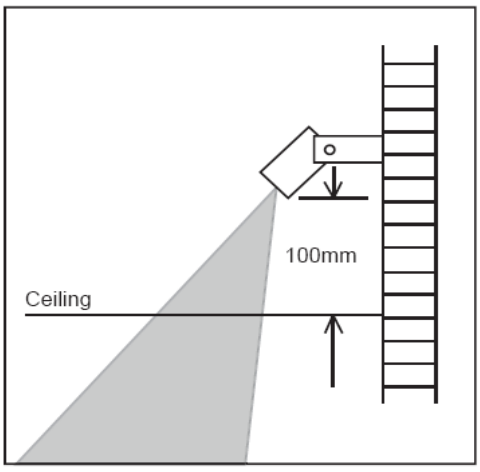
Line Drawing



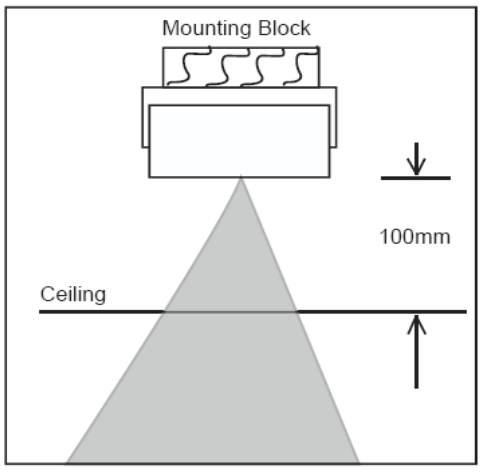

Wiring Plan




Sensor Position - Mounting Above Urinal



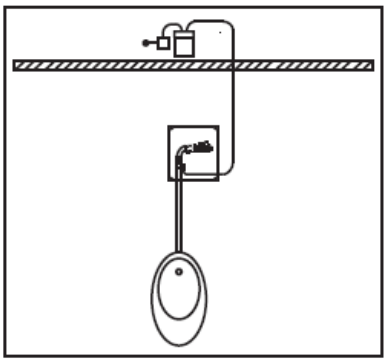

Sensor Position - Side Mount of Urinal




**Plumbing Installation:**

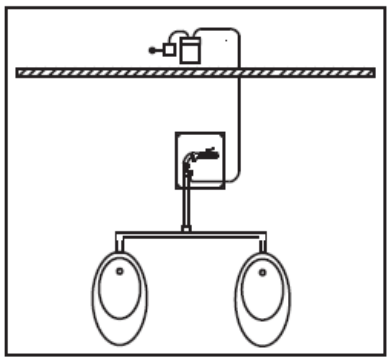
Ensure adequate water supply is available for the flushing required. A 20mm copper supply with pressure between 150 - 700kPa will normally be suitable for most installations. If in doubt, please contact one of our offices.

# SINGLE & MULTIPLE WALL HUNG URINALS



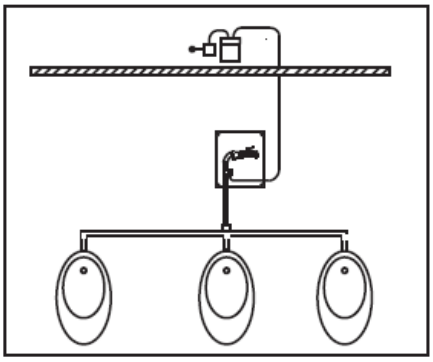
Option 4: Single Wall Hung Urinal Installation

Using 1 x LWG-SS100 Senor and
1 x SS100 - LWG Urinal Installation Kit



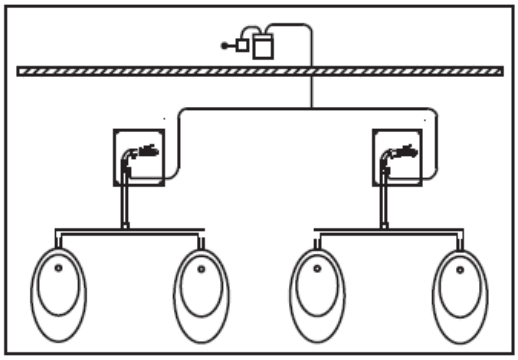
Option 5: 2 x Single Wall Hung Urinals

Using 1 x LWG-SS100 Senor and
1 x SS100 - LWG Urinal Installation Kit



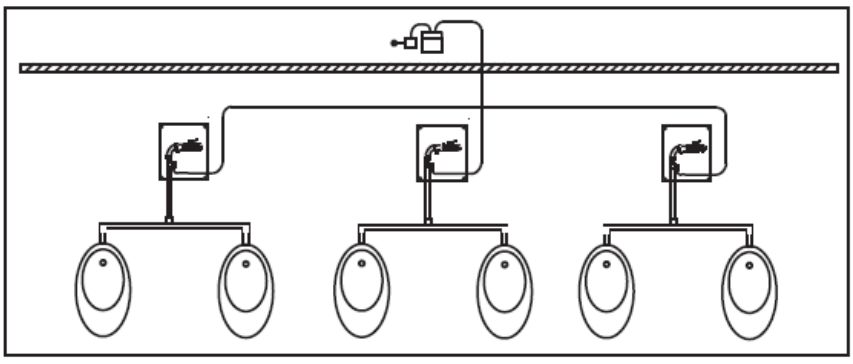
Option 6: 3 x Single Wall Hung Urinals

Using 1 x LWG-SS100 Senor and
1 x SS100 - LWG Urinal Installation Kit



Option 7: 4 x Single Wall Hung Urinal

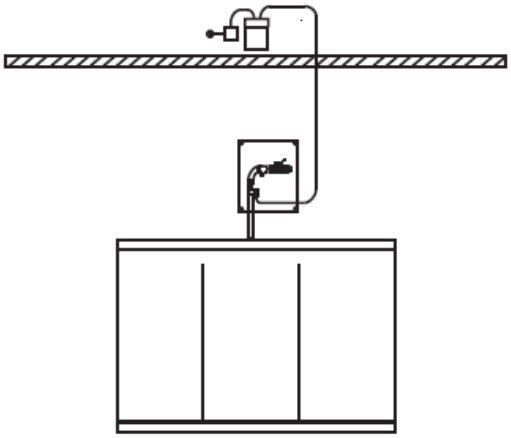
Using 1 x LWG - SS100 Sensor and
2 x SS100 Kit Urinal Installation Kit



Option 8: 6 x Single Wall Hung Urinal

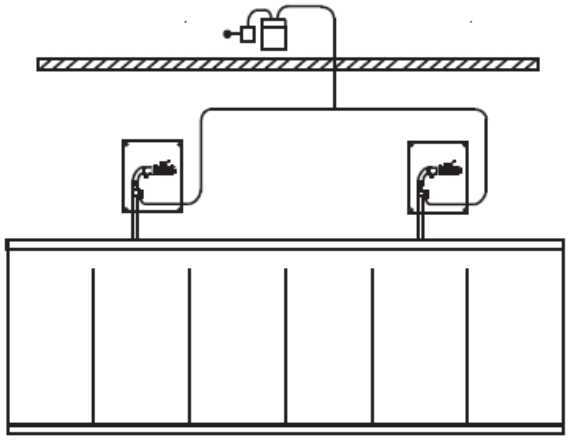
Using 1 x LWG - SS100 Sensor and
3 x SS100 Kit Urinal Installation Kit

# STAINLESS STEEL OR TILED SLAB TYPE URINALS



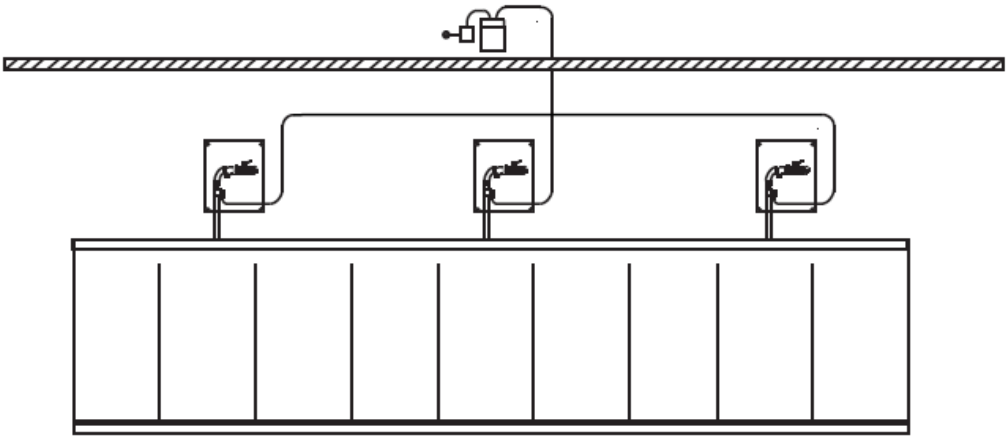
Option 1: Slab Type Urinal with Inlet Sparges

Using 1 x LWG - SS100 sensor and
1 x SS100 Kit LWG Urinal Installation Kit



Option 2: Slab Type Urinal with 2 Inlet Sparges

Using 1 x LWG - SS100 Sensor and
2 x SS100 Kit Urinal Installation Kit



Option 3: Slab Type Urinal with 3 Inlet Sparges

Using 1 x LWG - SS100 Sensor and
3 SS100 Kit Urinal Installation Kit

# ALTERNATIVE INSTALLATION WITH CISTERN TANK

## 4.0 PLUMBING INSTALLATION

4.1 This Water Guard is pre-set to be installed in conjunction with a cistern tank fitted with a syphonic valve. Other installation options such as direct feed from a non-potable supply tank or using a Zurn mains p[ressure

4.2 All plumbing should be completed by a qualified tradesman.

4.3 The pipework should be completed as per Diagram 1. Care should be taken to ensure that the flow direction through the solenoid valve is as marked on the valve body. The valve supplied has an operating pressure range of 10 - 1000kPa, however we recommend the water pressure be in the 100 - 600kPa range for optimum performance. Fit a Wilkins Model NR3 pressure reducing valve if necessary. For long term reliability we recommend the installation of MacDonald FP51F Filterball valves as isolation valves and Wilkins 1250 water hammer arrestors.

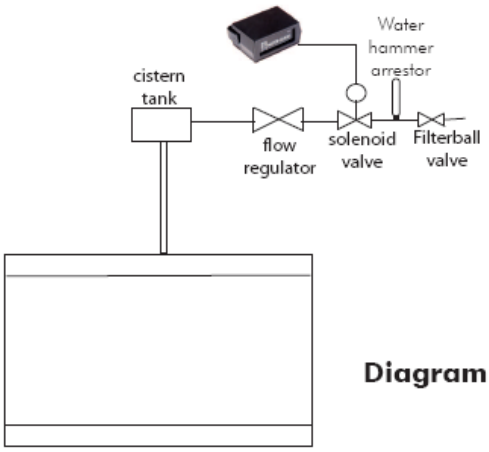



**Diagram 1**

4.4 Once the customer has wired up the unit, it is necessary to regulate the water flow into the cistern tank. As previously described in Section 3.0 the solenoid valve will open twice during a cycle, each time for 90 seconds. It is imperative that you adjust the water flow so the cistern tank fills and dumps within the 90 second period - ideally around 70 - 80 seconds. This is done as follows;

a) Plug the Water Guard into its 24 volt AC power pack

b) Press the Re-set button on the back of the Water Guard. This will initate a 2 second opening of the solenoid valve. Don't worry if the unit seems to stay open for longer than the initial 2 second opening, it has probably just detected your movement and started a cycle by itself.

c) Pass your hand in front of the Water Guard to start a cycle. The solenoid will stay open for 90 seconds.

d) Open the ball-o-fix valve until sufficient water is flowing to fill the tank in 70 - 80 seconds. If you are unsuccessful first time, repeat procedure.

e) **IT IS VITAL** to always start from an empty tank, so if flushing commences, say, after 60 seconds, pull the plug on the Water Guard and let the tank empty before trying again.

4.5 Many switch setting variations are available to suit your client's needs. The Water Guard is pre-set to flush on a 30 minute cycle, but this may not be suitable if traffic patterns are high. Alternative switch settings are shown in Section 6.0

## 4.6 Commissioning

Once the customer has wired up the Water Guard, it is necessary to ensure the flushing function is correct.

Check that the switch setting has been altered to suit the client's needs and/or urinal style. Refer Section 6

Press the re-set button on the back of the Water Guard. The solenoid valve should open for 2 seconds and then close. Pass your hand in front of the Water Guard. The LED on the front should flicker when detecting movement. Wait for the chosen delay period - the solenoid should open for the chosen flush time of 7 or 15 seconds.

# 5.0 ELECTRICAL INSTALLATION

The control unit should be positioned, if possible to detect only people using the urinal. Detection field patterns are as per Diagram 2, but smaller "lobes" of detection can occur outside this main lobe.

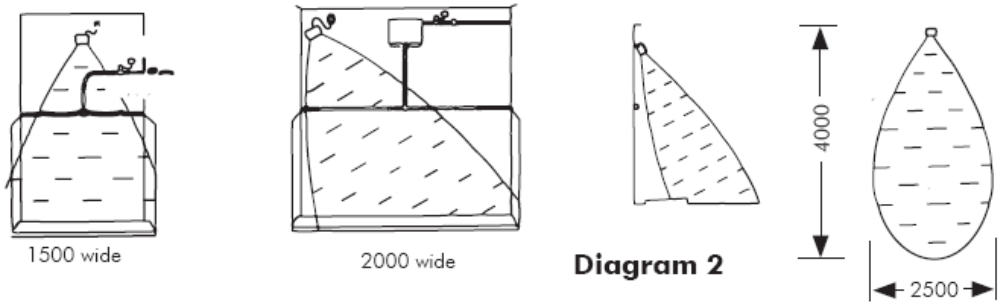



**Diagram 2**

Avoid pointing the control unit towards hallways or other areas where traffic patterns may encourage false triggering. Remember, Water Guard will detect through walls and ceilings up to a maximum of 4m.

Where there are multiple urinals and Water Guards, avoid pointing the control unit towards other urinals as water movement can also cause false triggering.

The control unit can be mounted above a ceiling for out of sight installation, provided the thickness of the ceiling does not exceed 15mm and it is a non-conductive material such as Giboard, Hardiflex, plastic or glass. Materials such as sheet metal, foil or foil backed boards and wire reinforced glass should be avoided. See Diagram 3 for clearances.

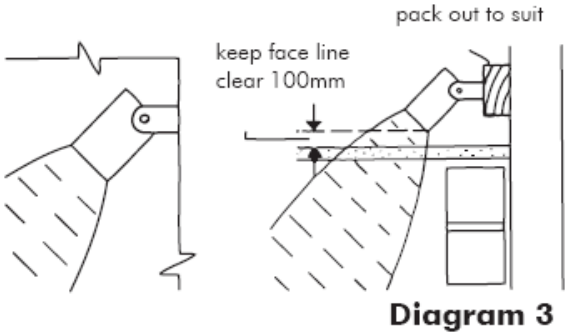



**Diagram 3**

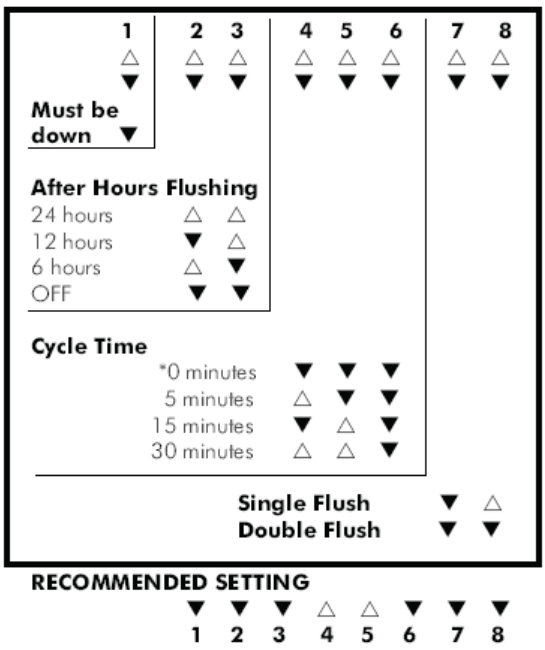
## 6.0 OPTIONS

6.1 Located on the back panel of the control unit is a small circular plate. Behind this is a series of 8 switches which give you the option of changing the flush cycle to suit your client's needs. There are 3 sections to these programme options;

a) **Single/Double flush cycle**: You have a choice of either only a flush at the end of the cycle or at both the beginning and the end

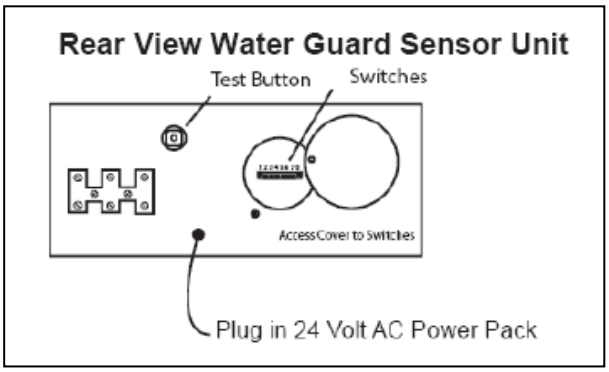
b) **Cycle time:** This option sets the length of the cycle. In the case of the single flush cycle, the solenoid will not open until the end of this period, but with the double flush cycle, the valve will open immediately detection is noted. and then again at the end of the cycle.

c) **After hours flushing:** This gives the option of regular after hours flushing to ensure the urinal trap stays wet and prevents odours. Ideal for schools, churches or similar that may have long dormant periods.




* 0 minute cycle time allows for immediate flushing after detection. Not recommended for ultimate economy

6.2 Where a large number of urinals or alternatively a single large urinal with a number of cistern tanks are installed, Water Guard can be installed with up to 5 solenoid valves being controlled from just one Water Guard controller.




**MACDONALD INDUSTRIES LIMITED**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Water Efficiency Labelling and Standards (WELS) Scheme

Australian Government

## Registration Details

### Urinal Equipment

**The following product has been registered according to the requirements of the WELS standard (AS/NZS 6400:2005 Water efficient products—Rating and labelling).**

| | |
|---|---|
| **WELS registration number** | R000520 |
| **Brand** | LWGEMMELL |
| **Model name or number** | LWG SENSORFLUSH |
| **Date registered** | 19/07/2006 |
| **Registration expiry date** | 19/07/2011 |
| **Litres per flush per stall** | 2.5 |
| **Water efficiency star rating** | 0 |

***NOTE:***

***The Watchman Water Guard is manufactured in New Zealand and supplied to the Australian market, where it is branded as the LWG Sensaflush.***

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