

SUPREME

MASTER FLUSH



Installation
& maintenance
instructions.

General Information

- Designed for indoor use only. Do not expose to the elements of nature.
- All plumbing connections must be made in accordance with AS/Z3500 and installation with AS/NZ3500.2.
- Master Flush systems should be installed in compliance with all local/national water supply standards.

Warnings

- Read all instructions before attempting to install this system. It is recommended a qualified and registered plumber completes the install.
- Ensure pipe work is thoroughly flushed before installing the solenoid assembly. Solenoid components are susceptible to debris and require additional flushing compared to a standard plumbing fixture.
- Consideration should be given to any regulations relating to an air gap, an air break or double check valve to protect against back flow.

Operating Instructions and Parts Manual

Please read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage. Retain instructions for future reference.

Supreme Master Flush Urinal Water Control

Passive infrared (PIR) sensors detect and respond to movement engaging the flush cycle. Program your flush cycles to suit system and traffic. Suitable for direct feed or cistern feed urinals. Battery or mains powered options.

Specifications

Sensor	Passive infrared (PIR)
Colour	Grey
Casing	UV resistant ASA
Power Supply	9V alkaline battery OR optional 100 - 240V 50/60Hz AC (9VAC/DC 1A regulated power pack)
Solenoid Valve	9V DC latching, 0.2 - 5.0 bar pressure (20 - 500 kPa), Ballofix valve, 1/2" BSP male inlet - 1/2" BSP female outlet (WaterMark approved)
Flushing Duration	Adjustable duration 3 - 300 seconds
Delay Before Flush	60 seconds - 6 hours
Other Flush Cycles	Pre flush (2 seconds)/Sanitary flush (6 - 24 hours after last activation)
Dimensions	150mm (L) x 110mm (W) x 40mm (D) - sensor 76mm (L) x 55mm (W) x 78mm (H) - solenoid
Water Efficiency	1.9L flush, per stall
Warranty	12 months (excludes battery)
Product Code	AWS400 (battery), AWS400A (mains)

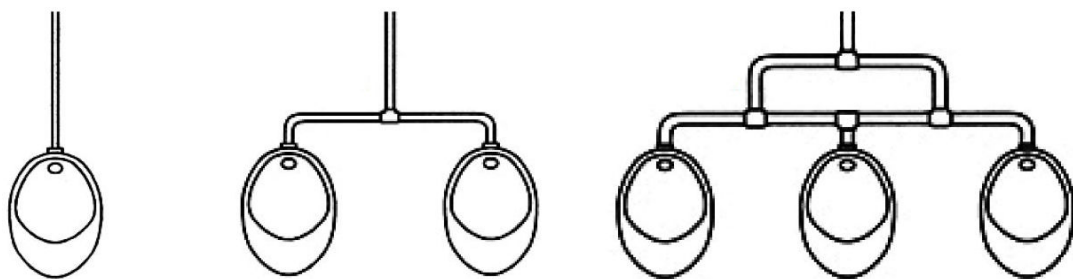
Planning

The Supreme Master Flush is suitable for controlling the water flow in direct feed or cistern feed urinals.

Consideration should be given to any regulations relating to an air gap, an air break or double check valve to protect against back flow.

Note: The sensor can only operate one solenoid valve.

Typical Piping Arrangements



NOTE: Multiple water outlets may require a form of water balancing to achieve uniform flushing.

Installation

1. Solenoid (Cistern and Direct Feed)

- i. Isolate water supply. An isolating valve must be installed in accordance with AS/NZ 3500.1. This must be installed prior to the solenoid valve.
- ii. Identify a suitable position for the solenoid valve, that is easily accessible for servicing. Position in an upright position (preferably). If cistern present, position solenoid as close to cistern as possible.
- iii. Cut the water supply pipe and flush thoroughly to purge swarf and debris. Failure to perform this step may cause the solenoid to become blocked and it will not close.
- iv. Ensure solenoid valve orientation is correct (flow direction is marked on the body of the valve with an arrow, Fig. 3).
- v. Turn water on and check for leaks.

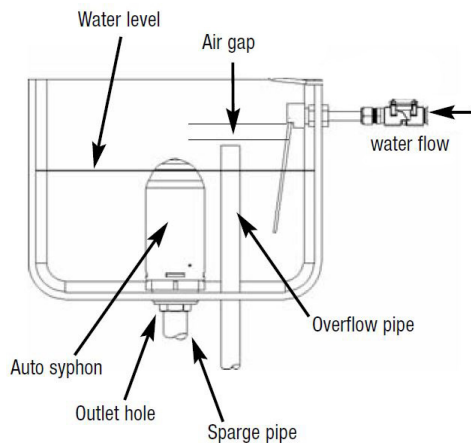


Fig. 1 Cistern with autosyphon

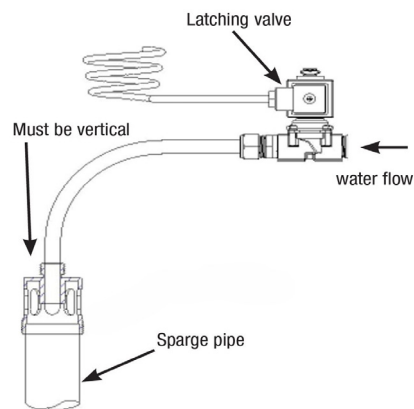


Fig. 2 Direct feed

IMPORTANT:

- Never connect battery or power pack directly to the solenoid valve.
- If water pressure exceeds 500kPa or 5bar, install pressure reducing valve (not supplied). Pressure reducing valve must be installed between the isolating valve and solenoid valve.
- If any water hammering present, install hammering arrestor (not supplied). Continued hammering may cause the solenoid to fail and bounce open.
- If solenoid is blocked due to debris and cannot close, check and clean.
- If water quality is poor, additional filter protection may be required.
- Cistern - ensure flush triggering level of autosyphon is below water inlet (Fig. 1).
 - an air gap must be present between the cistern water level and the water inlet pipe to prevent back-flow (Fig. 1).



Fig. 3 Solenoid and Ballofix valve - note direction of flow

2. Sensor (Surface Mounted)

NOTE: You will need to determine the quantity and location of the urinals/troughs that will be serviced by the sensor. The area that one sensor can cover is approximately 3m x 1m (see Fig. 4).

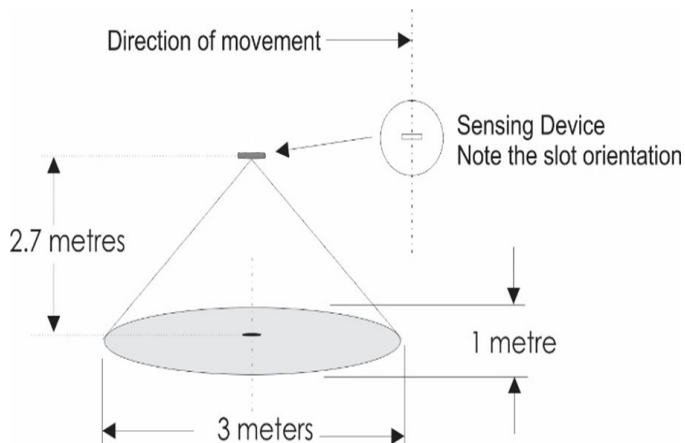


Fig. 4 Ceiling mounted sensor - slot orientation is East/West

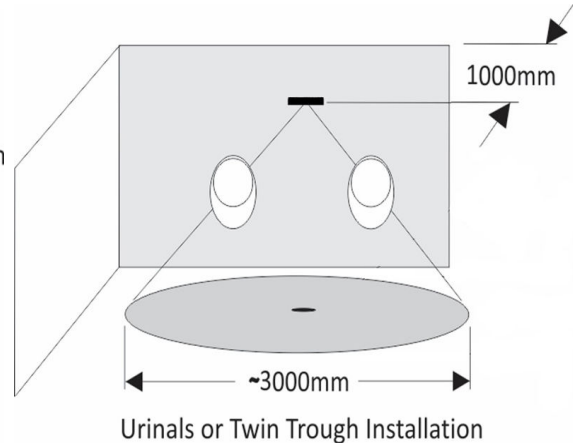


Fig. 5 Multi urinal/trough installation - slot orientation is East/West

- i. The sensor can be ceiling (preferable) or wall mounted. For optimal performance sensor should be positioned ~1m from the urinal (to allow traffic to pass through versus standing under)
- ii. For a single stall urinal, position the sensor above the centre of stall.
- iii. For double or triple urinals, position in the centre of stalls.
- iv. If more than 3 urinals, use additional sensors.
- v. When a suitable location has been found, a small hole may need to be drilled to allow for the solenoid cable (and power pack if applicable).
- vi. Open the blind lids on the housing cover and secure to ceiling (or wall) using appropriate fixing for substrate. Take particular note of the sensor slot orientation (Fig. 5 and Fig. 6).

NOTES:

- If mounting on wall, fix to side wall (90° from urinals) and ensure sensor slot is orientated North/South (Fig. 6). It can also be tilted to capture a greater range of heights.
- Avoid locating sensor near heat sources (hot pipes, radiators, heat emitting lights or where direct sunlight encroaches on sensor lens).
- Additional flex (cable between sensor and solenoid) can be supplied upon request. DO NOT cut and join as polarity is critical to operation.

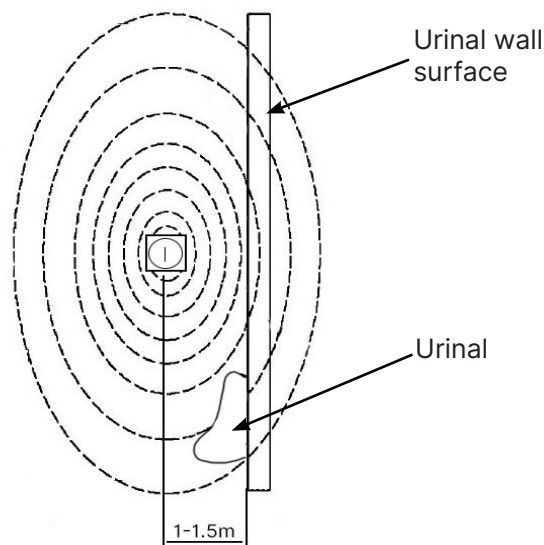


Fig. 6 Wall Mounted - note sensor slot (North/South) parallel to urinal

3. Connect Solenoid Valve to Sensor

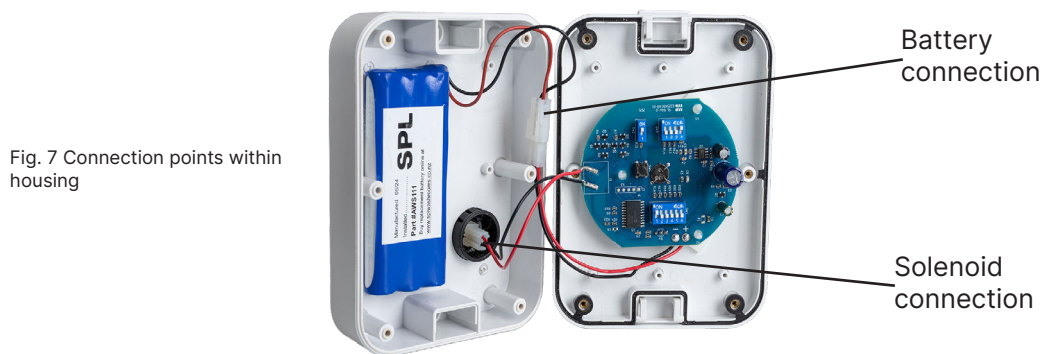
- i. Run the latching valve cable to the sensor. Ideally, this will be within the wall, ceiling cavity or in conduit.

Note: Ensure the solenoid connection plug from the PCB and the corresponding solenoid cable plug remain outside the housing. Failure to do so may make it difficult to close the housing correctly.

- ii. Do not extend the cable as this will affect correct operation (we can provide more flex if required).
- iii. Once the power is connected, the system operates in default factory settings.

4. Connect Mains Power Supply (optional)

- i. Locate battery supplied with the system. If connected, remove the battery.
- ii. Carefully align the power pack outlet cable plug to power inlet plug attached to the printed circuit board (PCB).
- iii. Connect power pack to 100-240V 50/60Hz AC power supply (do not turn on).



Set Up

1. Turn water on and inspect all connections. Start with isolating valve half-open.
2. Separate the sensor housing by removing the 6 x screws on the rear.
3. Affix battery pack (or power pack if mains) to the back cover (using velcro incl.) and pass solenoid lead through grommet hole.
4. Connect the solenoid lead and battery to the corresponding connectors (Fig. 7).

Note: The LED will flash green and red when power is connected, for approximately 60 seconds, during the boot up process.

5. Program flush cycle. See page 11/12 for further details.
6. Reassemble the housing.
7. Attach to ceiling via appropriate fixing, through 2 x blind lids on the front of the housing.

Note: During standby mode (when no movement has been detected), the LED will flash green once every 10 seconds.

Programming Flush Cycles

IMPORTANT:

- THE DIP SWITCH SWITCHES DO NOT ADD TO ONE ANOTHER, ONLY ONE PER SWITCH CAN BE IN THE OPPOSITE DIRECTION TO THE REST.
- The default settings of the Master Flush is a 2 second pre-flush, 1 minute delay, 10 second flush with a 24 hour sanitary flush.
- To alter these settings, take apart the housing to expose the dip switches (Fig. 8).
- After reconfiguring the Master Flush and reconnecting the power, wait approximately 60 seconds before checking detection and operation.

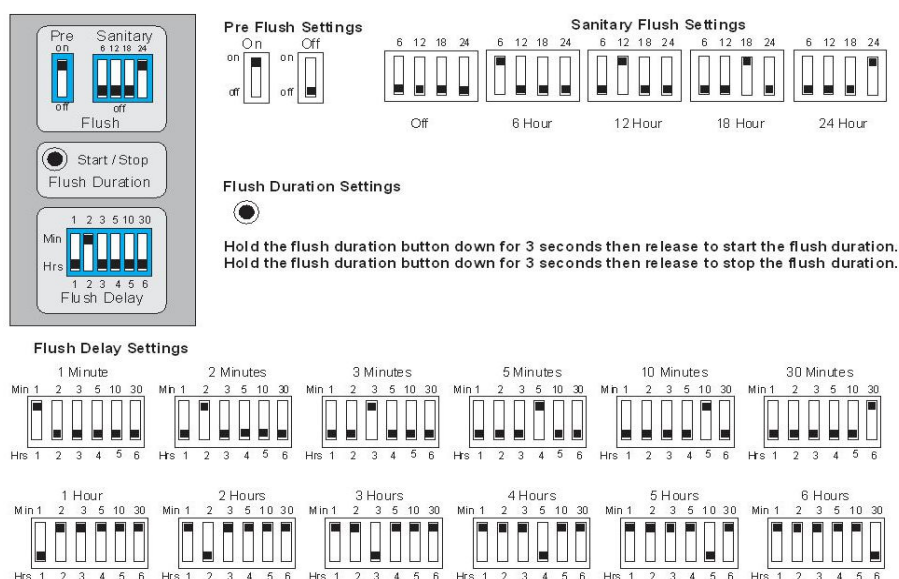


Fig. 8 Switch board

PRE-FLUSH

If pre-flush is selected as "On", the solenoid valve will open for 2 seconds immediately upon motion detection. The pre-flush duration is not adjustable, it can only be "On" or "Off".

SANITARY FLUSH

A sanitary flush will occur regardless if motion is detected or not, it will countdown the time selected and flush for the flush duration. The sanitary flush duration is not independently adjustable to the flush duration. The programmed time for the flush duration will also be the duration of the sanitary flush.

FLUSH DURATION

Flush duration is the time that the solenoid valve will remain open for once the delay timer has timed out. On completion of flush duration the LED will flash green for 1 minute (during this time sensing is disabled) before re-entering standby mode. This prevents the sensor from being triggered by the water that has been flushed.

The duration is customisable between 3 seconds and 5 minutes and the sensor must have power to modify the flush duration setting. Carrying out this process resets the previous setting.

FLUSH DELAY

Flush delay is the countdown until it flushes (valve opening) after motion has been detected, the LED will flash green once every 2 seconds for the duration of time selected on the dip switch setting.

Direct Feed Urinals

1. Set the pre-flush to either "On" or "Off" (Fig. 8).
2. Select a time delay before flush. Options range from 1 - 30 minutes OR 1 - 6 hours.
3. Select sanitary flush time. Options are "Off", 6, 12, 18 and 24 hours.
4. Set flush duration. Hold down the flush duration button for 3 seconds and once the LED flashes, release the button to start the flow of water.
5. When sufficient water has flowed to clear the urinal, hold down the flush duration button for 3 seconds and once the LED flashes, release the button to stop the flow of water.

Note: The time that the valve was open for will be stored as the flush duration.

6. Your flush cycle is now set.

IMPORTANT: The flushing volume of water should not exceed the volume the urinal can flush to avoid flooding during fault and/or blockages.

Cistern Feed Urinals

It has been assumed that the cistern will be fitted with an auto syphon.

1. Set the pre-flush to "Off" (Fig. 8).
2. Select a time delay before flush. Options range from 1 - 30 minutes OR 1 - 6 hours.
3. Select sanitary flush time. Options are "Off", 6, 12, 18 and 24 hours.
4. Set flush duration. With the cistern empty, hold down the flush duration button for 3 seconds and once the LED flashes, release the button to start the flow of water.
5. Continue filling until the auto syphon system starts to flush. Count 1001, 1002, then hold down the flush duration button for 3 seconds and once the LED flashes, release the button to stop the flow of water. The fill cycle should over-run the flush by a few seconds to allow for pressure fluctuations.

Note: The time that the valve was open for will be stored as the flush duration.

6. Your flush cycle is now set.

IMPORTANT: You should not have a volume of water entering the cistern greater than the sparge pipe (and urinal) can flush. This is to safeguard against a possible overflow of the cistern under fault conditions.

Troubleshooting

There are 4 generation models of Supreme Master Flush. If spare parts are required visit splwashrooms.co.nz/product/flush-parts

Symptom	Possible Issue / Fix	Remedy
Solenoid valve not opening	a. No power b. Faulty sensor unit c. Faulty solenoid valve d. No water e. Obstructed sensor f. Incorrect valve direction g. Water pressure h. Valve cable not connected	a. Replace battery/check power supply b. Replace sensor c. Replace solenoid d. Check that water supply is on e. Clean sensor slot/ remove obstruction f. Correct the valve direction of flow g. Make sure water supply is 100-500kPa h. Connect valve cable to sensor
Solenoid valve not closing	a. No power b. Faulty solenoid valve c. Flush time set too long	a. Replace battery/check power supply b. Replace solenoid valve c. Set flush time shorter
Red LED flashing continuously	a. Low power battery b. Valve polarity is incorrect c. Faulty sensor unit	a. Replace battery/check power supply b. Swap valve wire positions on connector (if applicable) c. Replace sensor unit

Condition	LED Status
Standby	Green LED flashes once every 10 seconds
Delay countdown	Green LED flashes once every 2 seconds
Sensor Inhibited	Green LED flashes green once every 1 second
Fault/Low power	Red LED flashing continuously
Flush duration button pressed down	Green LED flashes rapidly
Valve open during flush time programming	Red LED flashes rapidly

Maintenance, Care and Cleaning

- The sensor assembly must be kept clean. The slot must always remain free from dirt or anything else that can hinder the product from operating correctly.
- Use a damp cloth ONLY to wipe away any dirt from the product. Never use abrasive cleaners. Never hose or spray.
- To avoid premature failure it is recommended that any filter or valve and solenoid are inspected and cleaned annually.

Supreme Comprehensive Warranty

Your Supreme Master Flush is fully guaranteed against defective materials and faulty workmanship commencing from the date of sale (according to SPL's records), subject to it being installed and maintained in accordance with the manufacturer's instructions.

SPL (2021) Limited warrants that should any part of the unit fail within the given warranty period (12 months), it will be remedied by SPL.

Due to the significant variation in tradesmen's knowledge, experience, and productivity, labour charges will NOT be accepted unconditionally. We strongly recommend contacting our office for advice before proceeding with any warranty repairs.

This warranty excludes:

- Incorrect installation, or installation that does not specifically follow the installation guidelines supplied
- Defects arising from improper installation, or incorrect electrical supply where applicable
- Failure to follow manufacturer's maintenance instructions
- Damage/Failure resulting from:
 - the use of non-authorised parts
 - authorised parts not installed in accordance with the manufacturer's instructions
 - accidental damage, negligent use, misuse, vandalism, neglect
 - damage caused either directly or indirectly by external sources (power outages, power surges, incorrect power supply, natural disaster, or insect infestation)
- Water ingress caused by property maintenance or flooding
- Failure due to contamination (pipe work should be flushed before installing the solenoid assembly.)

The above includes consequential damage to any other goods, furnishings, or property.

- Normal wear and tear and consumable parts (batteries etc)
- This warranty does not displace any statutory warranty in relation to the unit but any liability of SPL (2021) Limited under any statutory warranty will be limited to a replacement or repair of the unit or payment of the cost of such replacement or repair at the sole discretion of SPL (2021) Limited

Note:

- Warranty only extends to products purchased and installed in New Zealand.
- Contamination or poor water quality is not covered by product warranty.
- Damage to solenoid caused by inadequate flushing or excess water pressure is not covered by the product warranty.

SPL (2021) Limited
Cambridge 3434
New Zealand

p. +64 7 823 5790
e. office@splwashrooms.co.nz