

## Technical Support

If you have any further technical queries, please contact technical support on 01924-420029.

**PLEASE DO NOT RETURN ANY ITEM WITHOUT AUTHORISATION**

**PLEASE LEAVE THESE INSTRUCTIONS WITH CUSTOMER**

### Guarantee

This product is guaranteed from date of purchase to be free from manufacturing defects for a period of 1 year (Extended warranty available) with the following conditions :

- 1) The product has been properly installed as per instructions.
- 2) Damage due to water ingress to controller, debris from water supply, vandalism or misuse are not included. Statutory rights are not affected.

Service : Woodroyd Electronic Services Ltd, 52 Ashbourne Drive, Cleckheaton BD19 2HZ

### Environmental information

This product may contain substances that can be hazardous to the environment if not disposed of properly. Electrical and electronic equipment should not be dumped with general household waste but must be separately collected for proper treatment and recovery. The crossed-out bin symbol is a reminder of the need to dispose of the product properly at end of life; in this way you will assist in the recovery, recycling and re-use of many of the materials in this product and help to reduce the amount of electrical and electronic waste ending up in landfill and to improve quality of life by preventing the release of potentially hazardous substances into the environment. Please contact us for information on disposal arrangements. Where possible please recycle your packaging.

Producer registration number WEE/DB0002ZR

Carefully designed and distributed by:

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The manufacturer reserves the right due to continuous development to change specifications without notice

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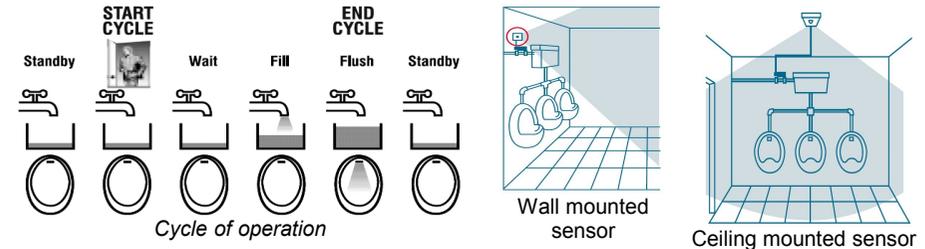
## SMARTFLUSH SF103M FITTING INSTRUCTIONS

Smartflush ensures good hygiene while minimising water usage in Gents' urinals.

Pack contains: sensing/control unit with 230V power terminals; low-voltage latching valve, cable with gland and connector; cable clips, screws and wallplugs.

### How Smartflush works

Smartflush stands by until movement is detected, then waits before filling and flushing the cistern



### Installation

**THIS UNIT MUST BE FITTED ONLY BY A COMPETENT ELECTRICIAN**

- 1) **Fit back box** of control unit on the wall or ceiling where it can be seen.
- 2) Turn off water supply. Fully open (or remove) any existing trickle cock. Ensure that there is an isolating valve in the feed to the new valve (to comply with water byelaws). Flush pipe of any debris. Cut out 30mm of pipe feeding cistern and **fit valve**.  
NB! It is very important to fit valve the right way round, the Asco valve is marked 'IN' for inlet.
- 3) **Fit valve cable** and gland to box. (If too short, use a longer 1mm<sup>2</sup> cable, **polarity important**).
- 4) **Set internal switches** 1 and 2 which adjust the cycle time, i.e. the time from detection to end of flush. (see diagram above) and ensure switch 3 is on.

#### Switch settings

1 Off & 2 off	= 20 minute cycle	The cycle time should be set taking into account customer requirements and water byelaws on the amount of water used. A 30 minute cycle caters for most users.
1 On & 2 off	= 30 minute cycle	
1 Off & 2 on	= 40 minute cycle	
1 On & 2 on	= 60 minute cycle	
3 Off	= disable manual flush button	<b>manual flush button</b> is hidden in the middle of the dolphin's body on the front of the unit. (see diagram overleaf)
3 On	= enable manual flush button	
4 (if fitted)	= not used	

5) Use 3-core flex to **connect to a 1A fused spur**. Connections are marked N (neutral), E (earth) and L (live). Entry to the back box should be made with an appropriate gland to ensure that the unit remains watertight. **Plug in valve connector. Switch on;** the red light on the power board should light. Press manual flush button a few times to confirm operation of the valve, sharp click with red flash in the domed lens for "on", dull click with no flash for "off". **Leave valve switched off.** N.B. As supplied, the valve might be latched open or closed, this is normal.

6) **Turn on water** supply, isolating valve/stopcock fully open. Smartflush is factory pre-set to a **maintenance flush** at 12 hour intervals if no-one is seen. **Go to step 7 if this setting is okay.**

Hold down internal "SET" button, press and release the external hidden "MANUAL FLUSH" button, then release "SET" button. The red light flashes every 2 seconds; the number of flashes shows the current maintenance flush setting. Each press of "SET" button changes the setting, as follows :-

- 1 flash = No maintenance flush
- 2 flashes = 8 hour interval
- 3 flashes = 12 hour interval, (factory setting)
- 4 flashes = 24 hour interval

When desired setting is shown, press "MANUAL FLUSH" button to save it and close the valve.

7) **Start a cistern fill** - hold down internal "SET" button, press and release the external hidden "MANUAL FLUSH" button, then release "SET" button. Ignore flashing light. Check for a reasonable flow of water and adjust with trickle cock on pipe end if required. If flow noise is a problem, e.g. next to sleeping quarters or classrooms, reduce the flow by means of a trickle cock. As soon as the flush starts, press and release the "MANUAL FLUSH" button to switch off the valve.

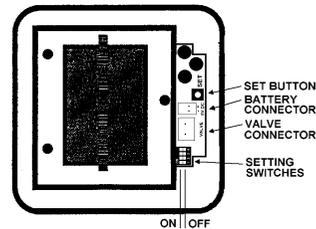
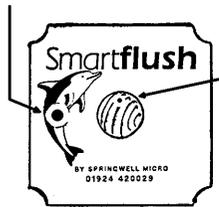
8) When the cistern has emptied, again hold the "SET" button, press/ release "MANUAL FLUSH" to start fill, release the set button. The light in the domed lens flashes every 2 seconds to show setting in progress. Wait until cistern is part way through flushing then press and release the "MANUAL FLUSH" button to switch off the valve. The cistern fill time is now memorised and will be used every time a flush is started whether automatically or via manual flush. Maximum fill time is 31 minutes.

9) Set switch 3 as required (see 4 overleaf). Inspect to ensure box is water-tight and final check all screws, gland and connections for security. Screw controller unit lid onto box.

10) Fill in your part of warranty sheet and leave it with this leaflet with the owner/manager. Explain section 4 (switch settings) to the person in charge of building maintenance.

### SWITCHES/CONNECTIONS/INDICATOR

Manual flush      Test/set indicator



### Multiple cisterns

2 or 3 cisterns with a common feed may be controlled from a single controller and valve. In this case, adjust outlet cocks feeding each cistern so that they have roughly equal fill times (during step 6), then set up the fill time using whichever cistern takes longest to fill (step 7). Contact technical support if further advice required.

### Regular Maintenance

Every 2 or 3 years depending on water quality, dismantle and if necessary clean the valve and internal strainer, then reassemble and operate manual flush to confirm correct operation. Ensure that the view from the controller is not obstructed and that the domed lens has not been damaged or painted. Test PIR detector as below.

## Smartflush Installation Troubleshooting Guide

All units are fully tested prior to despatch. If there is an apparent fault please check the following :-

### PROBLEM - UNIT WORKS ON MANUAL FLUSH BUT DOES NOT APPEAR TO SEE ANYONE

**Test the infra-red detector (PIR)** as follows :-

- 1) Ensure valve is turned off. (If necessary, use manual flush button with switch 3 on).
- 2) **Press and hold SET button**, watching the red light built into the domed lens. The light should flash once to confirm that the power is good, then flash 1 second later to show that test mode has been entered. Release button.
- 3) Watch the light, which flashes when slow movement is detected. (Can take up to 1 second).
- 4) Exit test mode by a short press of the SET button or the manual flush button if enabled. (If left in test mode, unit automatically reverts to normal operation after 16 minutes to avoid call-backs).
- 5) At end of test return switch 3 to desired position.

N.B. If the above test works and manual flush also works and fills for the correct time, then the unit will work correctly in normal use. The controller **normally gives no indication** that it has seen anyone, except that the red light flashes just once at the start of each timing cycle. The unit can be made ready for a new cycle by opening and closing the valve using manual flush, then waiting for 10 seconds.

### PROBLEM - VALVE WILL NOT TURN OFF

N.B. Valve has a magnetic latch so may be left in open or shut state while disconnected.

a) **Test power** by a short press of the SET button. Dome light should flash once. If no response, check wires or connector are correctly connected and have not been damaged, ensuring both pins on the white plug are connected and that red wire goes to "+". Power board light should always be on.

b) **Press the manual flush** button (see facing page). It opens or closes the valve on each press. Ensure that switch 3 is switched ON (Away from edge of box) otherwise manual flush is disabled. The red light flashes each time the unit tries to open the valve using manual flush, to test for reversed wires.

c) **Is the valve fitted the correct way round ?** On the Asco valve, the inlet end is stamped with the word 'IN'. A reversed valve will usually allow water to flow all the time mains pressure is applied.

d) Remove coil retaining clip. **Slide off coil assembly**. If valve stays open, the problem is inside the valve body. Dismantle and inspect as per (e) below.

e) If the valve was previously working or it appears to be trying to close, **debris inside the valve** is the most likely cause. Dismantle the valve, taking careful note of order of assembly and direction of spring. Clean moving parts and strainer. The plunger should move freely against the spring pressure. Inspect orifice and seal for dirt/damage.

f) **Wiring fault ?** Check valve connector and controller connector for loose or shorting wires. Check connector polarity :- Brown +2 goes to pin 2 on the Asco valve. Check white connector on both pins.

g) **Controller or valve faulty ?** Most problems are related to installation; controller and valve faults are rare. The valve can be tested with a 4.5 volt battery (as used in some pedal cycle lights) or a PP3. Touch the valve wires BRIEFLY onto the battery; brown positive for on, blue positive to turn off. The valve state is held magnetically so no power is consumed while the valve is in either state.

### PROBLEM - VALVE WILL NOT TURN ON

a) **Slacken compression nuts** on each side of the valve to ensure that there is water pressure on the Inlet side and that there is no blockage after the valve (e.g. a stuck washer on a cistern cock.)

b) See a,b,e,f and g of previous problem.

### PROBLEM - CISTERN ALWAYS SEEMS TO BE EMPTY / UNIT NOT WORKING

The cistern should be empty between flushes. When a fill cycle occurs, the cistern should fill and flush and the valve should turn off during the flush, hence the cistern will usually remain empty. With a typical fill time of 3 minutes and a cycle time of 30 minutes the unit will appear to be 'not working' for 27 out of every 30 minutes even at busy times, so the chance of seeing any activity on a spot check is remote. If in doubt see first problem (facing page).

### PROBLEM - FILLING TIME TOO SHORT / LONG

**Set filling time again**, carefully following the fitting instructions. Remember to start the self-timed fill with the cistern empty, i.e. having just flushed. The fill time is always accurate to 1 second or so due to the quartz crystal used. Any fill time up to 30 minutes may be set. If fill time is set longer than cycle time, the valve will open immediately on detection and stay open for the set fill time. If a longer fill time is needed, then either there is a restriction to the flow or the water pressure is too low. As supplied Smartflush can work with a 4 gallon cistern fed with as little as a 1 metre head. A low pressure valve is available for more extreme conditions, or it may be possible to switch to a mains pressure rather than tank feed. (Before doing so check local regulations). Fluctuations in mains pressure may cause the fill time to be too short or too long, but this will only result in a missed or double flush occasionally. Minor fluctuations are compensated for by the fact that the unit will remain "in step" as long as the valve turns off sometime during the emptying of the cistern, because the cistern always empties to the same level.