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TEL: 0044 (0)117 977 4647 FAX: 0044 (0)117 477 5582
WWW.HEATTRACING.CO.UK
WWW.THORNEANDDERRICK.CO.UK
e-mail: northernsales@thorneandderrick.co.uk

IRC urinal flush control valve

installation guide

1 Introduction

the infrared urinal flush control (IRC) valve automatically manages the supply of water to a urinal cistern.

On detection of movement in the washroom the IRC activates a 30 minute cycle allowing water to flow into the cistern. During the last 5 minutes of the 30 minute cycle the sensor 'looks' for movement. If no movement is detected during these 5 minutes the valve will close. If however, the sensor does detect movement a new 30 minute cycle is activated. If no movement is detected for 12 hours the IRC will activate a hygiene cycle.

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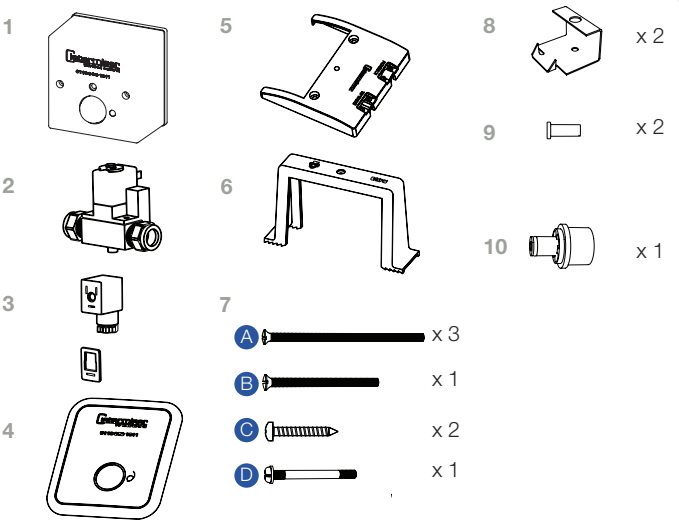
supplied parts

1. Sensor unit
2. Valve unit
3. Remote valve plug and gasket
4. Flush mount plate
5. Terminal cover
6. Mounting bracket
7. Screws
8. Clip nuts
9. White blanking plug
10. 3mm selectable valve seat



not supplied

- Two core low voltage cable for remotely installed applications.
- Pattress box for surface / wall mounted applications.

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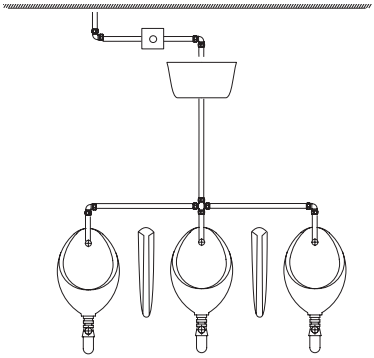
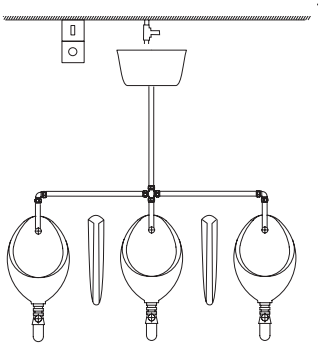
2 Positioning

NOTE: One IRC is required for every cistern.

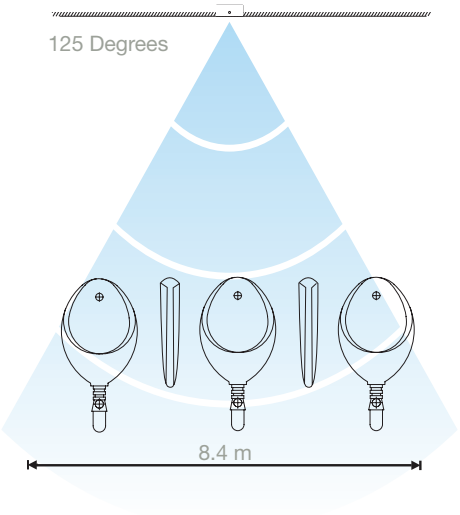
A pipe mounted, on the solenoid
(Battery powered only)

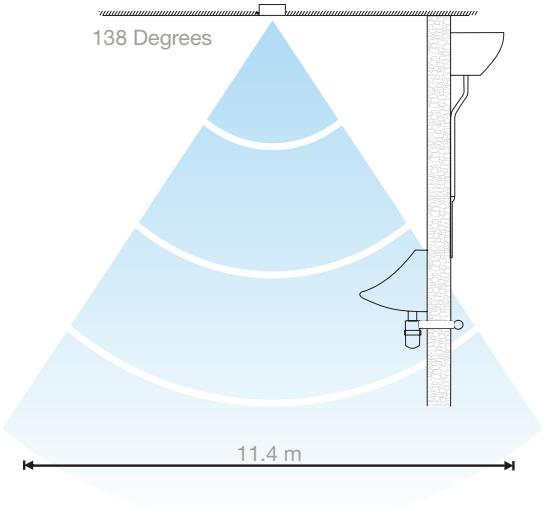


B wall mounted, remote from the solenoid
(Battery or mains electricity)



C ceiling mounted, remote from solenoid (Battery or mains electricity)





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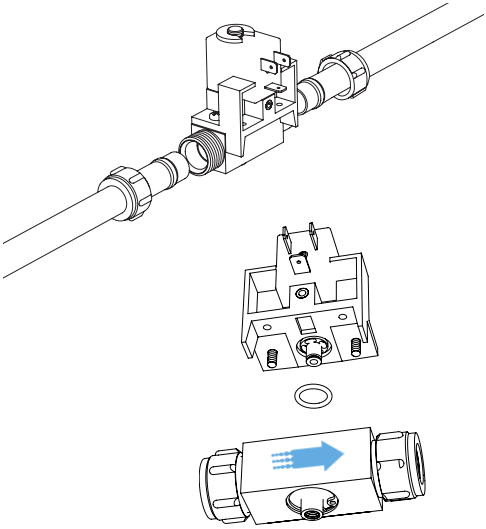
3 Valve installation

Install the valve on the 15mm pipe feeding the cistern.

NOTE: The valve should be positioned with the directional arrow pointing in the same direction as the flow of the water and the solenoid on top.

NOTE: There should be no restriction, such as a petcock or bibtap, after the valve.

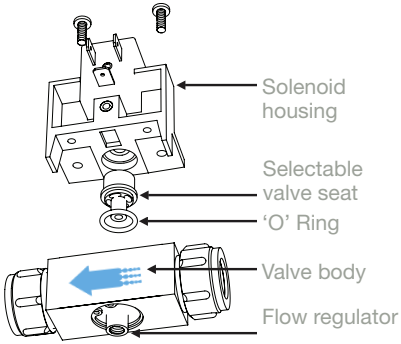
To change the direction of the valve remove the screws from the black valve body, turn the valve around and screw the valve back in.



changing the selectable valve seat

NB 3.0mm orifice should only be fitted when fed from a tank below 5 metres head.

1. To change the valve seat, remove the screws from the solenoid housing; this will access the selectable valve seat.
2. Remove the selectable valve seat from the valve body.
3. When fitting back, place the selectable valve seat into the solenoid housing and fit the solenoid housing back onto the valve body.



Valve seat	Pressure	Max Flow lpm	Min Flow lpm
1.5mm orifice insert	6 bar	2.7	0.03
1.5mm orifice insert	2 bar	1.6	0.01
3.0mm orifice insert	2 bar	3.0	0.05
3.0mm orifice insert	0.1 bar	0.9	No flow

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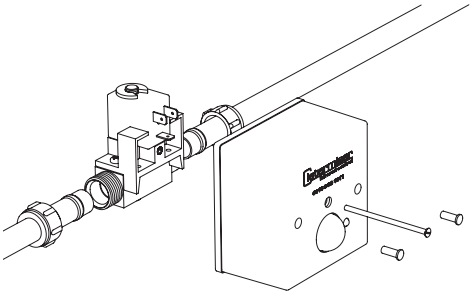
4 Sensor installation

A pipe mounted – battery powered only

Insert the batteries into the battery compartment of the sensor unit. Fit the sensor onto the solenoid and secure using screw A. Use the white blanking plugs to fill in the unused holes.



B wall mounted, remote from solenoid – mains or battery powered

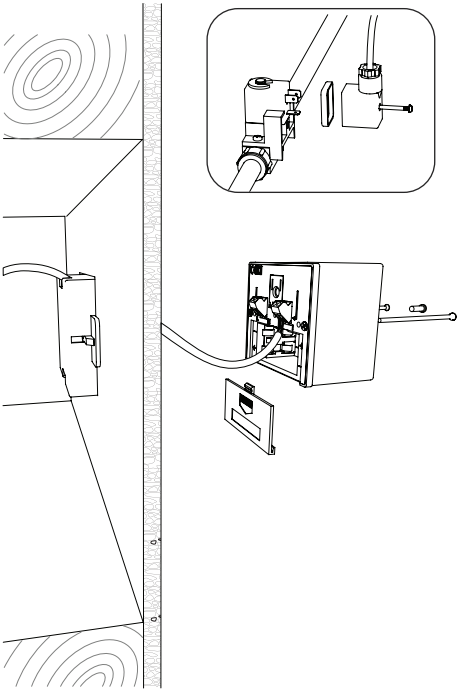
Using a pattress box, wire the sensor unit to the solenoid ensuring that the '1' on the sensor is connected to the '1' on the remote valve plug and likewise the '2' should be connected to '2'.
(See E on page 7)

NOTE: Do not use batteries & mains power simultaneously. This will damage the sensor unit beyond repair.

For battery powered installations, insert the batteries into the battery compartment: for mains powered installations, wire the sensor unit using the appropriate mains voltage cable.

Insert the sensor unit and using two screws A secure it to the pattress box.

NOTE: If the wiring is not connected 1:1 and 2:2 the polarity will be reversed and the valve will not function as intended.



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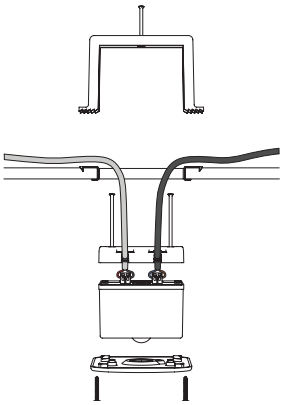
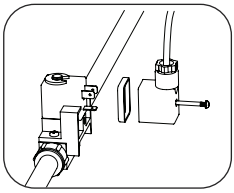
C flush mounted, remote from solenoid – mains or battery powered

1. Using the template supplied cut a hole for the sensor in the ceiling.
2. Wire the valve as indicated in E.
3. Position the flush mount plate and screw the terminal cover onto the back of the sensor unit. (This will secure the flush mount plate).
4. Place the mounting bracket over the back of the sensor unit and secure using screw B.

NOTE: Allow space for the self test button as indicated by supplied template.

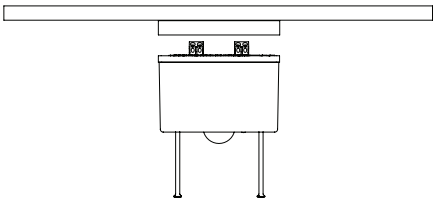
If the ceiling tile is thicker than 25mm the spare screw A can be used in place of screw B.

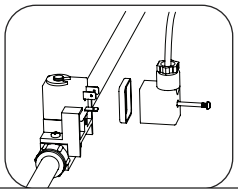




D solid ceiling OR solid wall installation

Install as indicated in section B.





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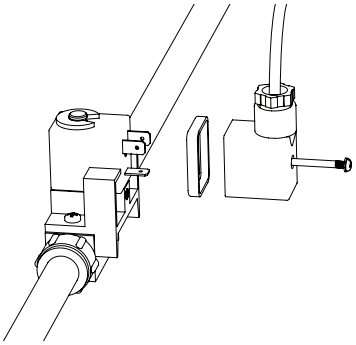
E wiring the valve for remote sensor installation

Using low voltage 2 core cable, wire the remote valve plug and gasket taking note of the '1' and '2' number markings. You will need to match these numbers when wiring the sensor i.e.1:1 and 2:2.

Place the plug on the solenoid and secure in place with screw D.

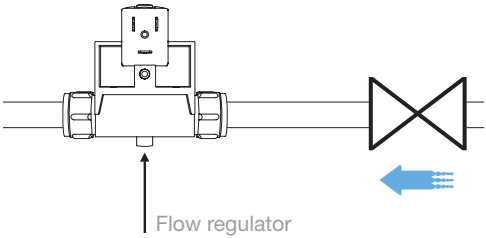


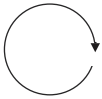
5 Commissioning

Once all is installed, the flow rate will need to be adjusted to suit the particular installation.

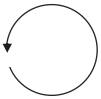
Using the flow regulator on the bottom of the solenoid you can either increase or decrease the flow of water. The cistern should not flush more than once in a period of 30 minutes.

Adjust the valve by turning the screw at the base of the brass valve body clockwise to reduce the flow and anti-clockwise to increase the flow.





Clockwise: reduces the flow-rate



Anti-clockwise: increases the flow-rate

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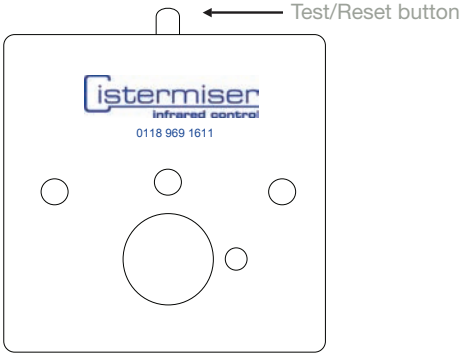
6 Self test mode



1 Reset button pushed (or power switched on or batteries inserted).

2 Test cycle

Valve Test Mode

Valve opens and closes five times – water flow should be heard.

Sensor Test Mode

Valve closed for 1 minute. Body movement causes the red (battery low) LED to flash. Check this by walking around the room to confirm the light is flashing.

3 Normal operation

Valve remains open for a period of 30 minutes after which it will shut down. If however presence is detected within the last 5 minutes of the 30 minute cycle the valve will re-activate a new cycle.

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7 Power connection

Cistermiser IRC can be powered by either battery or mains electricity.

8 Usage advice and specification

power

Voltage:	6V DC. Current: Nominal 54µA, Peak 750mA for 50ms.
Mains Supply:	Nominal 230V 50Hz 20mA.
Battery Supply:	4 x 1.5V Alkaline Type AA (LR6).
Batteries (recommended):	Duracell Plus (Gold Top) MN1500 Capacity 2700mAh.
Operating Life:	Up to 3 years with recommended batteries depending on washroom usage.

solenoid valve

6V Latching Valve:	UK WRAS approved. One valve per sensor unit.

pressure range

0.1 - 6.0 bar. (Covered by selectable valve seat). Integral slow fill flow regulator.
If supply pressure is above 6.0 bar, fit a pressure reducing valve.

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9 Frequently asked questions

test mode does not function

No power	Ensure unit is powered. Change batteries if battery powered; ensure mains electrical power is functioning if mains powered.
Incorrect power supply. The valve is powered by either battery or mains electricity. If both have been fitted simultaneously the sensor may be damaged beyond repair.	Disconnect one source of power and check by pushing the test/retest button. When the sensor is mounted directly on the valve it should be battery powered ONLY. Also check remote wiring if sensor is remote from valve.

no water passing the valve

Water supply	Ensure water supply is turned on and reaching the valve. The valve comes with a factory fitted 1.5mm insert fitted for water pressures of 2 - 6 bar. If your water pressure is within this range and the optional 3mm insert has been fitted then revert back to the 1.5mm insert. The 3mm insert is for use with water pressures of 0.1 - 2 bar.
Blockage on the outlet pipe	If a petcock or bibtap has been fitted ensure it is removed or fully open. Instructions state there should be no restriction after the valve.
Mesh filter blocked on inlet	Remove valve; check to ensure filter on the inlet side of the valve is clear.
Flow regulator	Ensure the flow regulator is fully opened; when the valve is letting water run, turn down to the required flow rate.
High water pressure (above 6 bar)	Fit pressure reducing valve.
No power	The power has failed while the valve is in the ‘closed’ position. Ensure unit is powered. Change batteries if battery powered; ensure mains electrical power is functioning if mains powered. Press reset button.

water is continously flowing through the valve

User perception	Once activated the valve remains open for a period of 30 minutes and will reactivate if someone comes within the range of the sensor in the last 5 minutes of the 30 minute period. The valve appears to work continuously as long as someone is in the washroom. To test the valve cover the sensor to prevent further detection and check again after 30 minutes when there should be no water running.
No power	The power has failed while the valve is in the 'open' position. Ensure the unit is powered. Change batteries if battery powered; ensure mains electrical power is functioning if mains powered. Press reset button.
Valve incorrectly fitted	Ensure the arrow on the brass body is pointing in the direction of water flow.

the valve remains shut when the room is occupied but opens at other times

Incorrect remote wiring	If the valve and sensor have been set up remotely, ensure the remote wiring is wired as follows: '1' to '1' and '2' to '2'. If you find the wiring is connected '1' to '2' and '2' to '1' then the valve is working in reverse.

water flow rate through the valve seems to be very slow

Flow regulation	Increase the flow rate by turning the flow regulator anti-clockwise until you reach your desired flow rate; ideally it should fill the cistern once per activation and then flush.
Mesh filter blocked	Remove valve; check to ensure filter on the inlet side of the valve is clear.
Flow restrictor/insert	The valves comes with a factory fitted 1.5mm diameter insert fitted for water pressures of 2 - 6 bar; this should be changed over to the 3mm insert (for water pressures of 0.1 - 2 bar) to allow more water through.

water flow rate through the valve is fast and the cistern is flushing too frequently

Flow regulator	Decrease the flow rate by turning the flow regulator clockwise until you reach your desired flow rate. Ideally it should fill the cistern once per activation (i.e. every 30 minutes) and then flush.

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9 Frequently asked questions

the LED does not flash

User perception	The LED only flashes during the self-test/reset cycle or when there is low battery power.

there is a leak around the solenoid

If the black bracket/solenoid has been removed from the block and rotated for flow orientation the 'O' ring seal at the join may be dislodged or lost.	If dislodged, re-position. If lost, call Cistermiser.

I have just changed the batteries and there is no power to the unit

Battery orientation	Check battery orientation; ensure there is not excessive corrosion on battery terminals. Ensure batteries are a reputable brand. Press reset button.

the unit has been working fine then stopped working. I have changed the batteries and ensured there is no blockage upstream or downstream

Seized valve	If the valve has not been powered for some time, there is a possibility that the valve has seized. Should this be the case a spare solenoid can be purchased from Cistermiser or a local plumbers' merchant.

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