

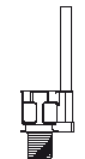
Step 12 : Base options, warranty, support and end of life disposal



WC01-002

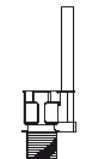
Flushvalve replacement body

*Drawings not to scale



WC01-012

Flushvalve with in-built overflow (base only)
- 1 1/2" base



WC01-013

Flushvalve with in-built overflow (base only)
- 2" base

Warranty

The battery operated Flushvalve Control System kit is guaranteed for 5 years from purchase against defective material and assembly.

Support

For technical support please visit our technical pages on our website at www.dartvalley.co.uk or contact us by e-mail at techsupport@dartvalley.co.uk Alternatively, you can telephone us direct on 01803 529021 and our customer service team will be pleased to help you.

Disposal of electrical and electronic equipment



The use of this crossed out wheeled bin logo indicates that this product needs to be disposed of separately to any other household waste.

Within each of the European Union member countries, provisions-

have been made for the collection and recycling of unwanted electrical and electronic equipment. Outside of the EU it will be necessary to dispose of this product at your local community waste collection or recycling centre. In order to help preserve our environment we ask that you dispose of this product correctly. Please contact your local council for collection centre details.

Disposal of waste batteries



The use of this crossed out wheeled bin logo indicates that the battery needs to be disposed of separately to any other household waste.

Within each of the European Union member countries, provisions have been made for the collection and recycling of waste batteries. Outside of the EU it will be necessary to dispose of this product at your local community waste collection or recycling centre.

In order to help preserve our environment we ask that you dispose of this battery correctly. Please contact your local council for collection centre details.

Head Office

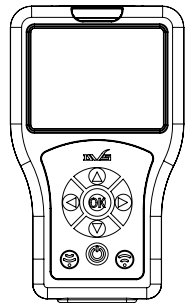
Dart Valley Systems Ltd
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Contact Details

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Handheld Programmer



AC01-010

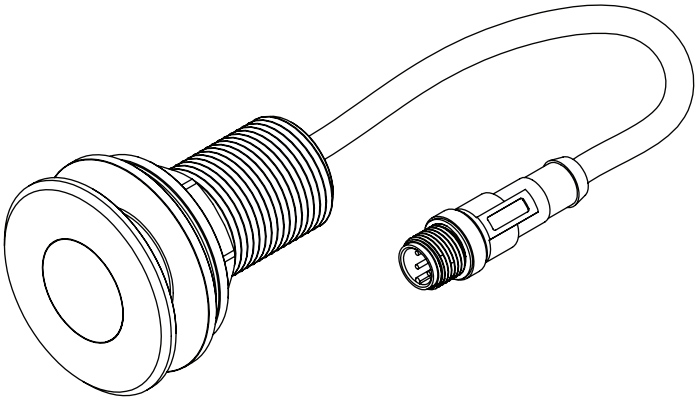
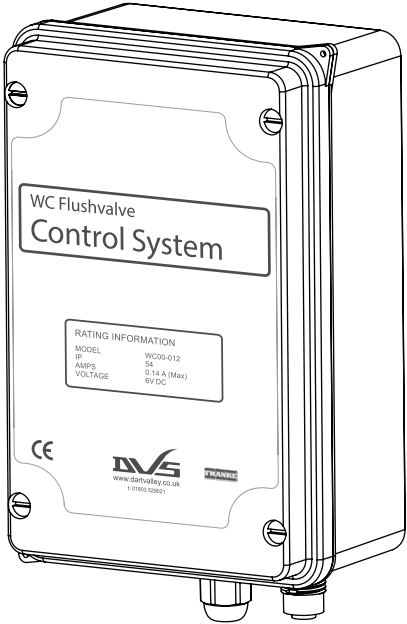
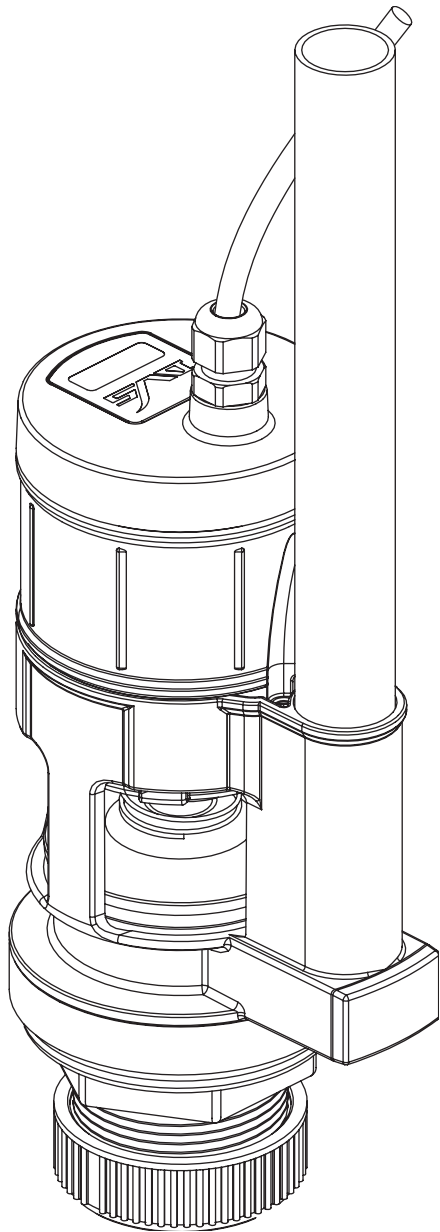
DVS Handheld Programmer with USB interface.

For use with programming DVS taps, showers, urinals, baths and WC flush systems.



Flushvalve WC Flushing System
(Low Voltage Mains)

Installation & Operating Instructions



Step 1 : Safety First

These instructions relate to the installation and setup of the DVS mains operated Flushvalve Control System only. Any external or ‘add-on’ parts will be supplied with separate instructions.

This installation should only be carried out by a competent person.

This is a sophisticated electronic device, which must be installed as per these instructions.

If the appliance is used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, they must be given adequate supervision or instruction concerning use of the appliance by a person responsible for their safety.

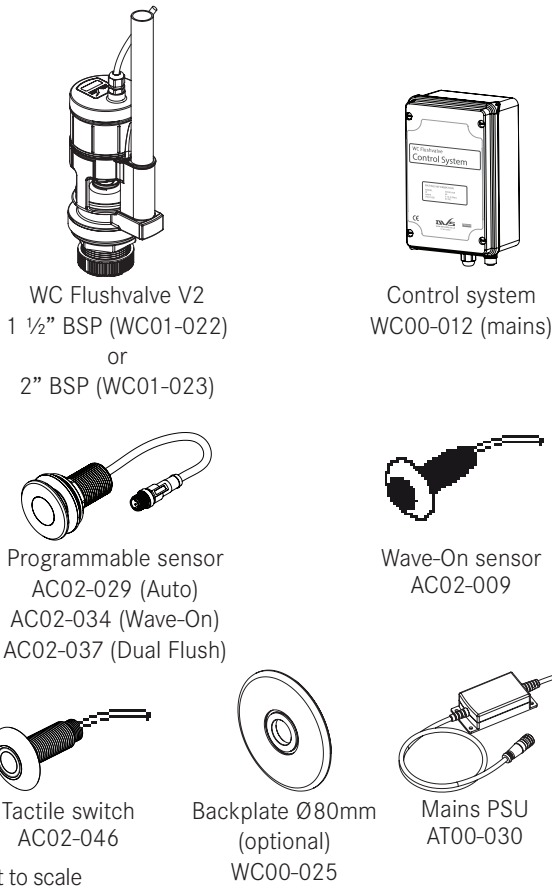
Children should be supervised to ensure that they do not play with the appliance.

IMPORTANT : Please read these instructions carefully and follow each stage in order!



Step 2 : Parts

A typical kit will comprise the following items*:

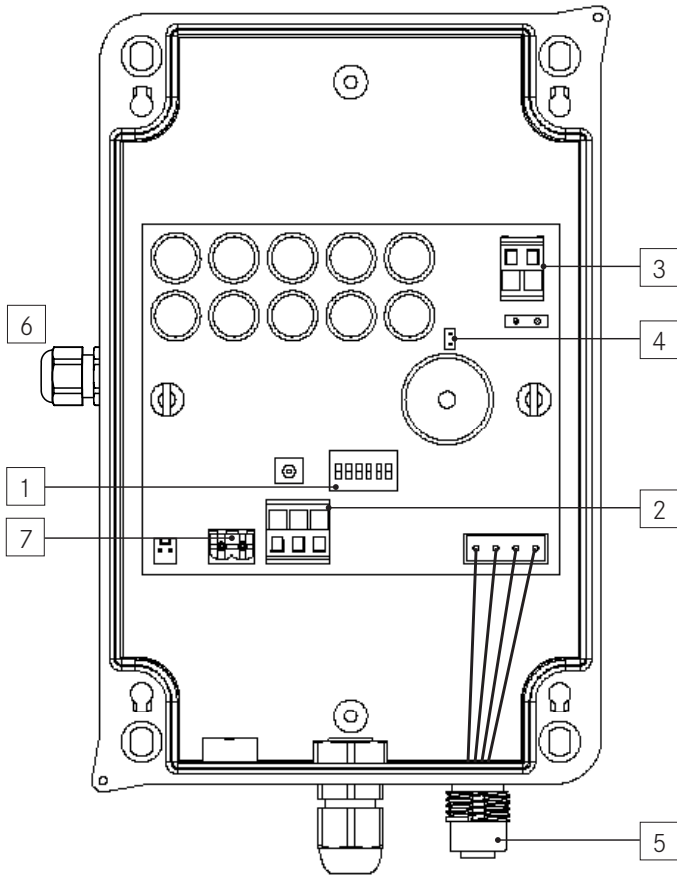
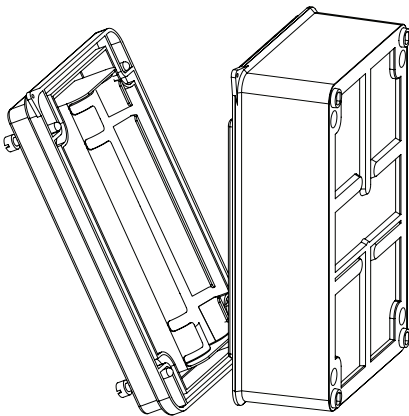


Step 3 : Board layout - Inside lid

Key (Right):

- 1. Time setting switches
- 2. Sensor input
- 3. Flushvalve output
- 4. Alarm jumper
- 5. Programmable sensor input only
- 6. Mains PSU power input
- 7. Mains PSU connection

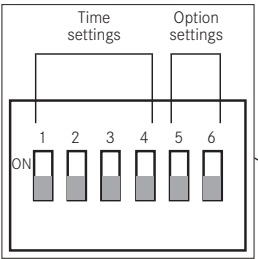
Mains control box lid comes standard with inner battery casing fitted, allowing the option of an alternative power source if required.



Step 10 : Time settings & basic operation (Programmable sensor)

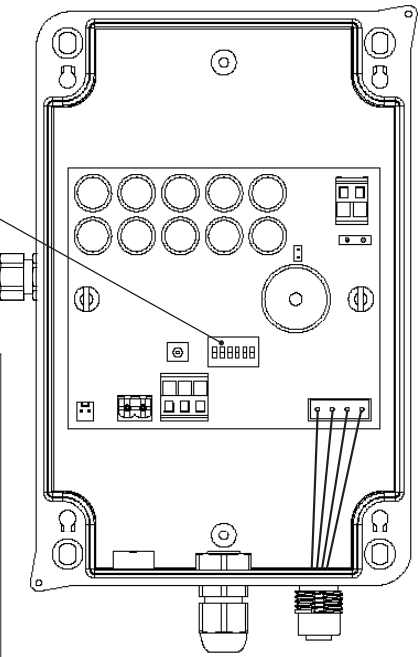
Time settings

IMPORTANT : Please ensure that all 6 of the dip switches are in the OFF / downward position (see right), prior to adjusting any settings via the handheld programmer.



Below details the full range of default and optional settings for both the Auto Flushvalve and Wave Flush modes, via the DVS Handheld Programmer:

	DEFAULT SETTINGS	OPTIONAL SETTINGS
AUTO FLUSH VALVE MENU		
Range	5	1-10
User Detect Time	5 Seconds	1-10 Seconds
Dual Detect Time	20 Seconds	10, 12, 14, 16, 18, 20, 22, 24, 26 & 28 Seconds
Flush Time(s)	4 Seconds	2, 2.5, 3, 3.5, 4, 3/4.5, 3/5, 3.5/5.5, 4/6 & 6.5 Secs
Walk Away Time	2 Seconds	1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5 & 5.5 Seconds
Automatic Purge	OFF	OFF, 3, 6, 12, 24, 36, 48 & 72 Hours
Purge Run Time	4 Seconds	2, 3, 3.5, 4, 4.5, 5, 5.5, 6 & 6.5 Seconds
Lock Outs	OFF	OFF, 2-10 Ops
WAVE FLUSH VALVE MENU		
Flush Type	Single	Single or Dual
Flush Time(s)	4 Seconds	2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6 & 6.5 Seconds
Range	2	1-3
Automatic Purge	OFF	OFF, 3, 6, 12, 24, 36, 48 & 72 Hours
Purge Run Time	4 Seconds	2, 3, 3.5, 4, 4.5, 5, 5.5, 6 & 6.5 Seconds
Lock Outs	OFF	OFF, 2-10 Ops



NOTE : For information on basic operation, data processing, charging and programmer layout please refer to the Handheld Programmer operating instructions.

Step 11 : Final step – setup routine

With the control box installed, and the appropriate dip switches selected in step.8 (for standard wave sensor) or settings selected via the Programmer in step.10 (for programmable sensor), there are slight variations to follow depending on whether the standard wave or programmable sensor is used- so please read carefully.

Connect the mains power supply. See step 3, Key 6 mains PSU power input & Key 7 mains PSU connection. The low voltage output has a red/white cable & a black/braid cable. This cable is connected via the mains PSU power input gland. The red/white cable should be connected to the + **(Positive)** terminal and the black/braid to the - **(Negative)** terminal.

The LED should flash twice, then after approximately 10 seconds it should flash again to indicate that the capacitors are charged- the board is now ready to go. This procedure is the same for both the standard wave and programmable sensor.

For the standard wave sensor (master) only - set the time parameters using the switches, and actuate the flushvalve to ensure that the times set via the switches, correspond with the actual live flushtime.

For the programmable sensor startup - all switches need to be switched to the OFF position. Using the handheld programmer, connect to the sensor and program the appropriate settings, (full list of menu settings are detailed in the Handheld Programmer instructions). Ensure that the times set correspond with the actual live flushtime.

Dual flush (using both sensors) - connect both sensors to the control box and set the appropriate flushtime for each, e.g. for the programmable sensor, set flushtime to 6 seconds, and for sensor 2 (half flush) will operate the flush for half the time of the master sensor, so in this case 3 seconds.

Once the flushtimes are set, the Flushvalve WC Flushing System is now ready to use.

PLEASE NOTE : A 30 second delay between cycles to allow for the cistern to refill.

Step 8 : Time settings & basic operation (Wave standard sensor)

Time settings

- Switch 1 = 0.5 seconds
- Switch 2 = 1 second
- Switch 3 = 2 seconds
- Switch 4 = 3 seconds
- Switch 5 = 24hr Purge ON/OFF
- Switch 6 = Lock out ON/OFF

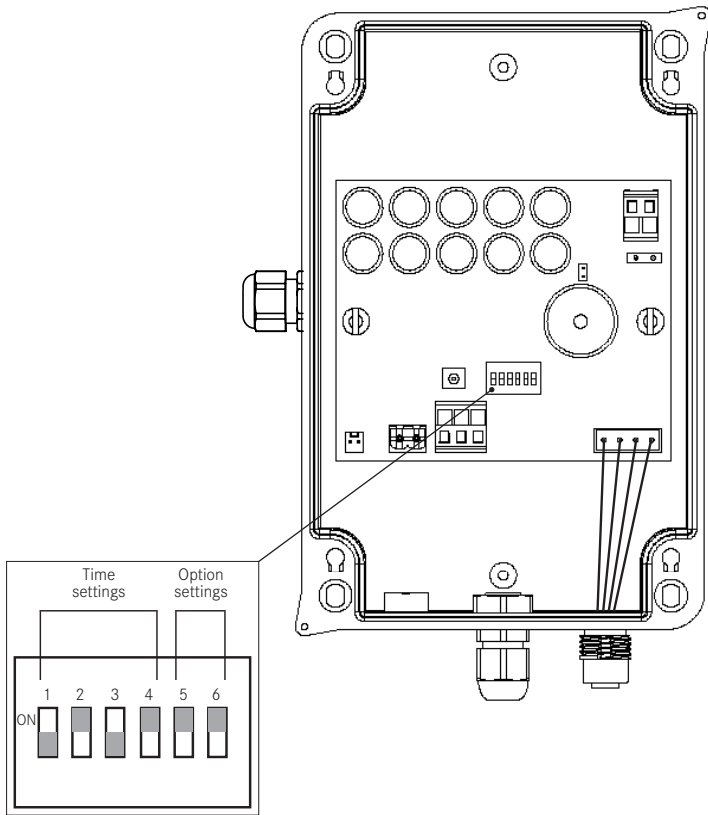
The flushtime is the time set by the switches in the ON position i.e. if switches 2 and 4 are set to ON the flushtime is set to 4 seconds. This is the default setting.

The flushtime time settings can be set from: 0.5 second to 6.5 seconds.

Operating the half sensor will result in a valve opening time of half the set time.

Option settings

- Switch 5 = Enables the purge function. When set to ON the system will purge if no operations have been carried out within the last 24 hours
- Switch 6 = Enables the lock out function. When set to ON the system will lock out if 3 operations are carried out within 15 minutes



Step 9 : Programmable sensor position & installation only

Care must be taken when positioning the sensor to ensure ease of use, and that general WC cubicle occupancy cannot accidentally trigger it.

The sensor needs to be fitted on a vertical surface less than 2 metres away from the control box through a 27mm pre-drilled hole, then secured with the nut, washer and bezel provided.

Various sensor back plates and extensions are available from DVS for deep wall installations.

Cable connection

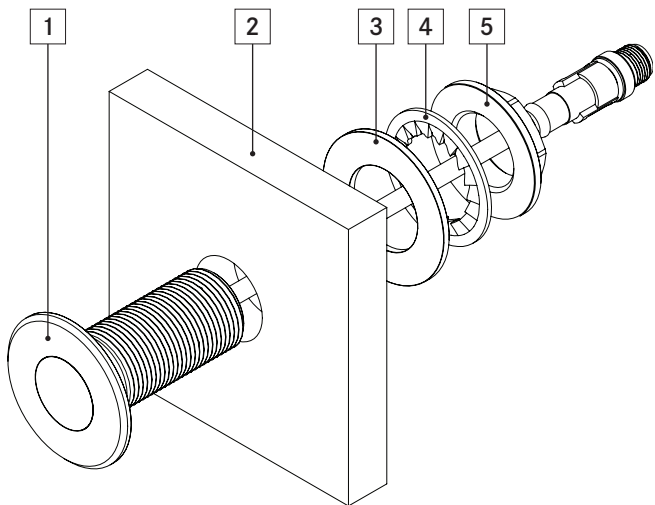
The control system has two connections for sensors, one for the standard and the other for the programmable sensor. If a second sensor is not ordered only one connector block is supplied.

Connect the sensor cable to the control box using the M12 connector. Please check the cable is clean and dry before connection onto the panel mounted socket.

NOTE: When positioning the sensor for full auto flush mode, ensure that the sensor is NOT covered by the toilet seat when lifted.

Key (Below):

1. Sensor
2. Mounting surface
3. Washer
4. Crinkle washer
5. Back nut



IMPORTANT : Do not attempt to modify or adjust the length of the sensor cable!

Step 4: Control box installation

Locating a suitable position

The control system should be located in a dry location, away from extremes of moisture and temperature and not exposed to dirt, dust or damp.

The unit should be accessible when required, but not within easy reach of unauthorised persons. Secure access areas and duct spaces are recommended. The control system is not designed for direct surface mounting into washroom areas.

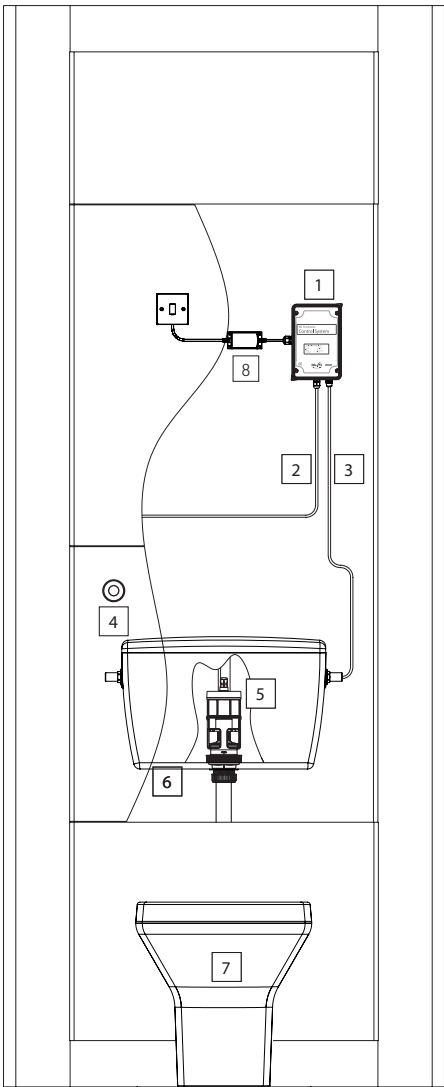
The routes that cables will take when connecting external equipment to the control system should also be planned at this stage.

Mounting the control system

Remove lid to expose four fixing locations around the back edge of the enclosure.

Drill through these marked areas away from the wall to avoid dust entering the enclosure, then hold control box in position against the wall and mark holes with a pencil. Remove box, drill and plug marked areas and fix the control unit with suitable fixings.

Sensor in wave operation position



Key (left):

1. Control system
2. Cable to sensor
3. Cable to Flushvalve
4. Sensor
5. Flushvalve
6. Standard cistern
7. WC pan
8. Mains PSU

Securely mount the control system in a vertical orientation (cables exiting bottom) in an accessible location, no more than 2 metres from the valve and sensor.

NOTE: The standard cable length to the flushvalve is 2 metres and sensor is 3 metres. Programmable sensor cable length is 800mm. Any other lengths are special order.

Connector plugs

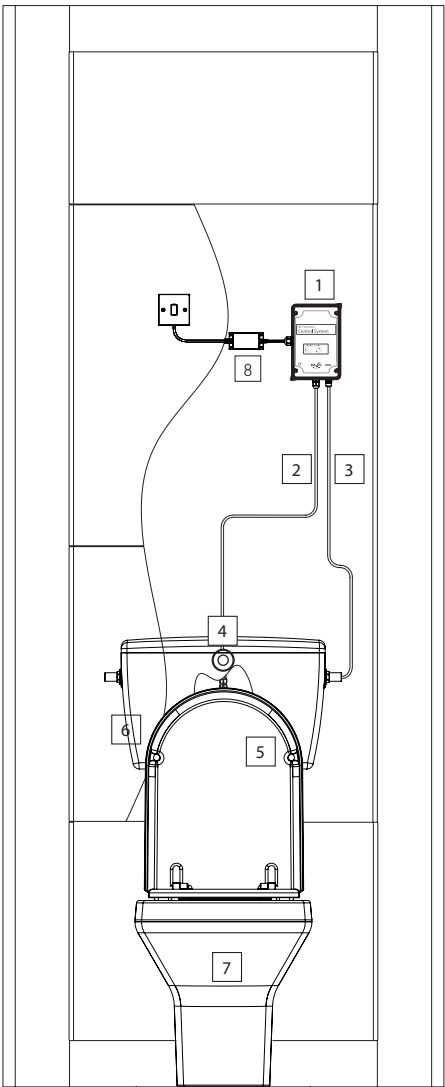
The connector plugs can be disconnected from the mating sockets when wiring external equipment, double check positions with the plug orientations as they only fit one way!

Cable glands

Always fit cables through the glands provided. Tighten until rubber touches the cable completely and then tighten with a further ½ turn (180°).

NOTE: When positioning the sensor for full auto flush mode, ensure that the sensor is NOT covered by the toilet seat when lifted (see below).

Sensor in auto flush operation position



Key (left):

1. Control system
2. Cable to sensor
3. Cable to Flushvalve
4. Sensor
5. Seat (lifted)
6. Standard cistern
7. WC pan
8. Mains PSU

Step 5 : Valve installation & water level

Installation

Make sure the inside of the cistern is clean- removing any debris and ensuring the area around the seals are clean. Put some joint tape around the threads of the flushvalve and then fit the rubber seal provided.

Install the flushvalve into the cistern and secure with the back nut provided and then reconnect the existing flush pipe. Trim the overflow pipe so it is at least 20mm below the cistern overflow outlet. Instal the inlet valve as per the manufacturers instructions.

The new valve may be separated into two parts by holding the base and twisting the upper body anti-clockwise for cleaning or de-scaling if required. However, ensure that the piston, spring and overflow pipe are replaced and secured correctly.

Route and secure the valve cable to a convenient position for the control box, i.e. within 2 metres.

Water level

Once the Flushvalve is installed re-connect the water supply and ensure that the cistern fills correctly and that there are no leaks.

Maximum water level

The maximum water level must be below the top of the overflow pipe. This is usually controlled by an inlet valve operated by a float.

It is recommended that the maximum water level is set up now at this stage.

NOTE : If you are fitting the flushvalve into an existing cistern you must ensure that the overflow is set to the correct level, adjust by trimming if necessary.

Minimum water level - **IMPORTANT**

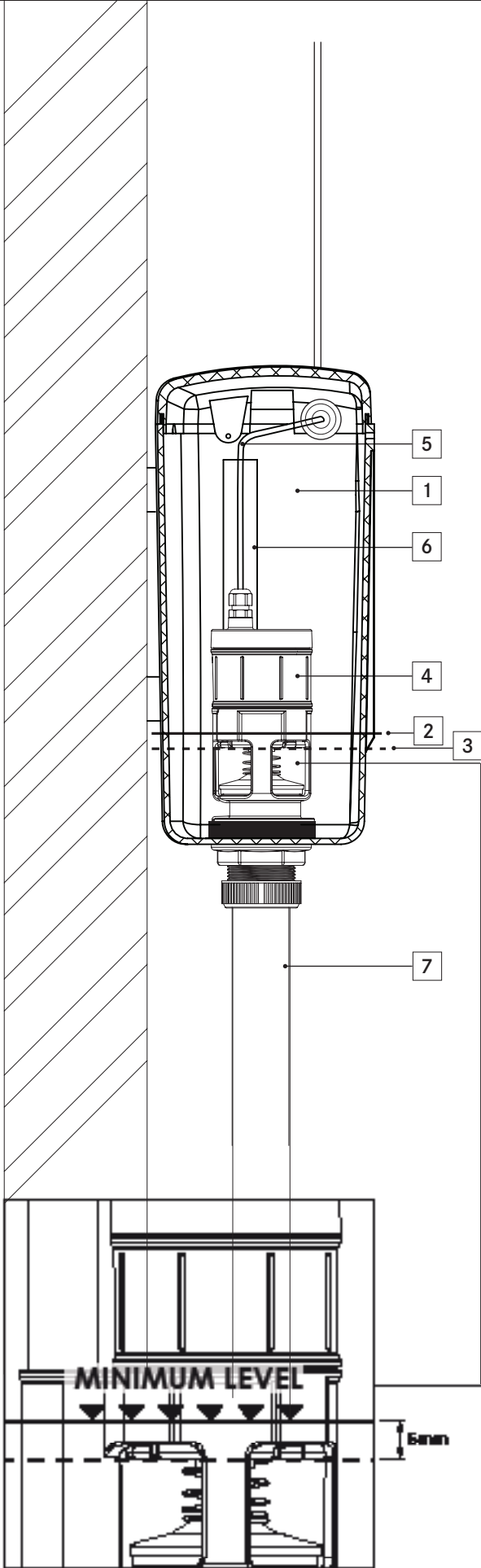
The minimum water level after flush cycle finishes must be 5mm above the Flushvalve window. It is very important that the minimum water level does not fall below this level.

If the level falls below this point the valve operation will be more audible and you also risk damaging the valve.

The minimum water level is controlled by the flush time on the control system- covered later in step.8 (for standard wave sensor) or step.10 (for programmable sensor).

Key (top right)

1. MAX Water level (controlled by inlet valve)
2. MIN Water level (controlled by flush time)
3. Top of Flushvalve window
4. Flushvalve
5. Cable to Control System
6. Overflow pipe (must be trimmed to correct level)
7. Flush pipe



Step 6 : Cable Connections

Connector plugs

The connector plugs can be disconnected from the mating sockets when wiring external equipment, double check positions with the plug orientations as they only fit one way!

Cable glands

Fit the Flushvalve cable through gland. Tighten until rubber touches the cable completely and then tighten with a further 1/2 turn (180°).

Cable connection

The Flushvalve cable should be trimmed to length and connected to the control box.

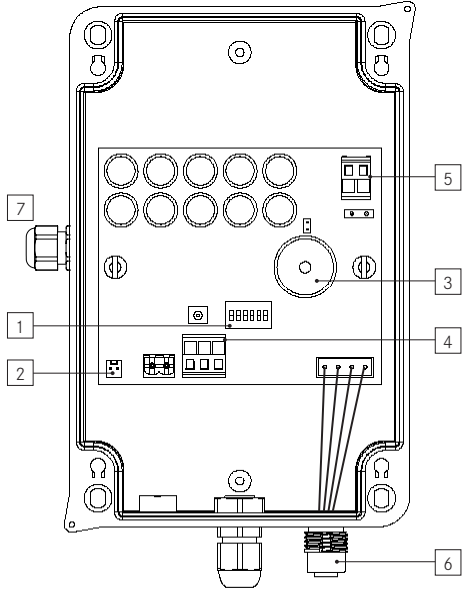
Connect the Blue wire to the Blue terminal, Brown wire to the Brown terminal. Please check the cable is clean and dry before connection onto the PCB.

When each plug has been wired the cables can be pulled back through the cable glands, and the plug re-connected to the corresponding socket. Cables should not be left tort or slack.

The programmable sensor has an M12 female connector for direct connection to the mating panel mount socket- mounted on the control box.

Key:

1. Time setting switch (for non-programmable sensor only)
2. Battery connector
3. Low battery alarm sounder
4. Non-programmable sensor and tactile sensor connection only
5. Flushvalve connection only (Do not connect sensors here)
6. Programmable sensor input only
7. Mains power input



Step 7 : Wave & tactile sensor position & installation only

Care must be taken when positioning the sensor to ensure ease of use, and that general WC cubicle occupancy cannot accidentally trigger it.

The sensor needs to be fitted on a vertical surface less than 2 metres away from the control box through a 27mm pre-drilled hole, then secured with the nut, washer and bezel provided.

Various sensor back plates and extensions are available from DVS for deep wall installations.

Cable connection

The control system has two connections for sensors, one for the standard and the other for the programmable sensor. If a second sensor is not ordered only one connector block is supplied.

Connect the sensor cable to the control box using the M12 connector. Please check the cable is clean and dry before connection onto the panel mounted socket.

IMPORTANT : Do not attempt to modify or adjust the length of the sensor cable!

Key (Below):

1. Sensor
2. Bezel
3. Backplate
4. Mounting surface
5. Washer
6. Back nut

