

SELECT Dosing System

Select-388



Instructions for Use

Ref: 35.1 May '17

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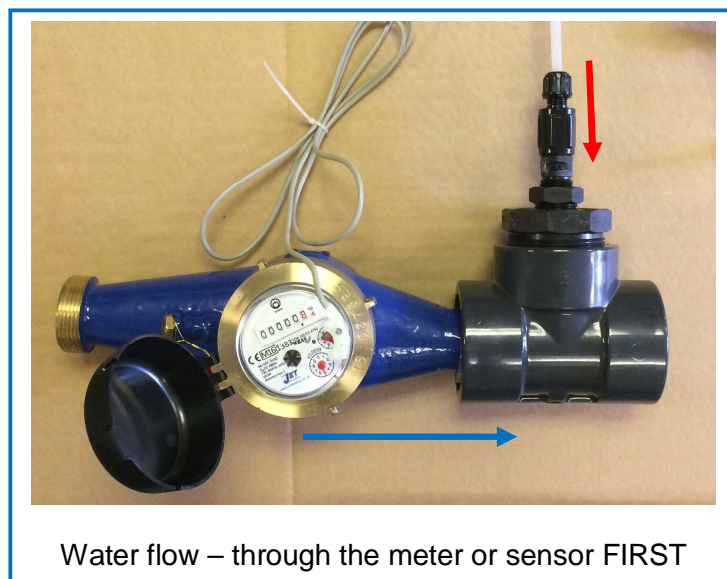
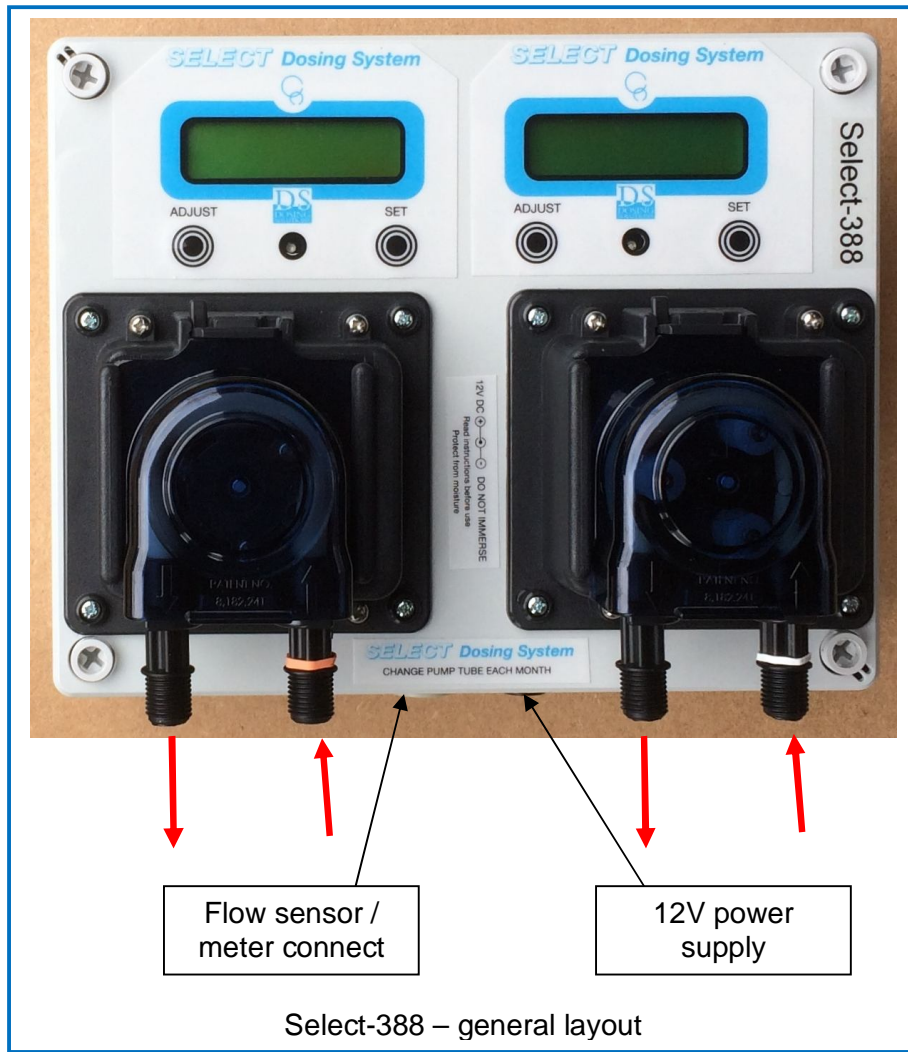
High pressure dosing
Multiple languages
Water treatment speciality



Cambridge
Agricultural


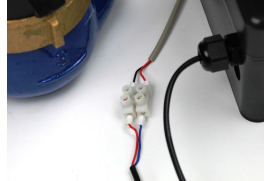
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Quick-fit Instructions

			<p>If a flow sensor is being used, install this in water line. Ensure arrow marked on sensor corresponds to direction of flow.</p>	<p>Assemble the T-piece and reducer.</p>	<p>Install T-piece after the flow sensor.</p>	<p>If a water meter is being used – see below</p>	
				<p>Wall-mount the pump</p>	<p>Remove cover lock screw (if present)</p>	<p>To change tube, rotate cover lock</p>	<p>Push up cover & remove tube</p>
				<p>Pull off and replace roller assembly</p>	<p>Hold tube in clipped position</p>	<p>Slide cover over tube</p>	<p>Rotate cover lock COMPLETELY</p>
<p>If cover is partly open PRODUCT WILL NOT PUMP</p>				<p>Cut delivery tube to desired lengths</p>	<p>Slide on nuts</p>	<p>Slide on ferrules, note orientation</p>	
				<p>Attach delivery tube to pump tube BY HAND ONLY</p>	<p>Note pumping direction arrows</p>	<p>Push on suction end weight</p>	<p>Use sealant to install T-piece, reducer & injection valve DOWNSTREAM OF THE WATER METER*</p>

 <p>Slide on nut and ferrule to delivery tube....</p>	<p>.... and attach to injection valve</p>	 <p>If a water meter is being used, connect signal wires from doser to pulse wires from water meter</p>	<p>The connection order of the wires is not important, however, you must use the "Water meter connect" assembly to make the connection otherwise incorrect dosing may occur.</p>
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Description

The Select-388 is a high pressure peristaltic pump designed to be used mainly for water treatment products, but can also have other uses for doing vaccines, medications, vitamins and acidifiers.

It is particularly useful where water cleaning products and acidification products are being used.

The components are: the main pump unit, a water flow sensor or water meter, and connections to the drinking lines. All parts inside the Select-388 doser can be replaced, but are not user serviceable.

Important

DOSE WATER ONLY FOR THE FIRST 24 HOURS WITH A NEW PUMP. USE THIS TIME TO FAMILIARISE YOURSELF WITH THE CONTROLS AND ENSURE THE PUMP PERFORMS AS EXPECTED.

Installation

If a flow sensor is being used (VTY10, VTH25 etc.) connect the plug from the flow sensor into the Select-388 doser unit. If a water meter is being used, attach the "water meter connect" adaptor (Item Code 166CA01) to the doser and attach the wires (in any order) to the wires coming from the adaptor. Connect the Select-388 doser to the 24V power supply provided with the doser. Choose program options from the control screen on each side of the pump. Ensure pump tubes are fitted and connected to inlet and outlet delivery tubes. Place inlet tube weight into additive liquid. Connect delivery outlet tube into the injection assembly. Commence proportional dosing.

Either one or both sides of the pump can be used.

It is possible to power the Select-388 doser from a 12V car battery. Normally the doser is powered from a 12V power supply delivered with the doser attached to the mains electricity supply (240 or 110V AC). Position the dosing point on the drinking lines so as to be convenient for a power source if power is to be taken via the power supply from the mains. Ensure that the Select-388 doser is properly secured to prevent it becoming immersed in water or stock additive solution.

The flow sensor is fitted with standard fittings which will need to be adapted to fit into existing pipe work. Use PTFE tape as necessary to ensure leak-free fitting. Avoid undue strain on the flow sensor during fitting as damage to the sensor may result. The use of a water filter immediately upstream of the flow sensor is recommended. Ensure flow is in the direction as indicated on the flow sensor.

The injection assembly is valved. There is a duckbill valve inside the assembly that can be replaced as required by unscrewing the two halves of the assembly.

Note: The pump will self prime. The pump can also be run dry without damaging any parts although it is not recommended to run the pump dry for extended periods.

Pump Tubes



In order to achieve a full range of dosing options, there are two main pump tube sizes used by the Select-388. These are the Orange tube (largest) and the White tube. Where very small dosing ratios are required into small water flows there is also the option of a very small pump tube (Yellow).

The Select-388 will display the correct tube to use once you have selected the flow sensor (or meter) being used and the dosing ratio required. Select the same flow sensor for both pumps. Each of the pumps can be programmed individually to suit the dosed products being used.

PUMP TUBES SHOULD BE REPLACED REGULARLY. During normal use, the pump tube is the wearing part of the pump. It is a false economy to wait until a tube bursts before replacing it. Much damage can be done to the pump by corrosive dosing products. If the tube is showing signs of wear or is starting to split – it is time to change the tube. Replacement tubes are available from your local Distributor of Dosing Solutions products.

NOTE – The Orange pump tube has to have the BLACK roller assembly installed. The White and Yellow pump tubes have to have the WHITE roller assembly installed.

Operation

When the electric supply is first connected, the version of the programming will be shown.

<p>This is the Welcome Screen To see the options available press “Set” (Options) To start dosing immediately, press “Adjust” (Start)</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Select</p> <p>Start Options</p> </div>
<p>If the Options button is pressed, the first option is to choose if the doser will continue to dose in a situation when the water flow is out of range (too high). Press “Adjust” until Y (yes) or N (No) is shown. With Y the doser will run constantly at high water flow. With N the doser will stop dosing and return to the welcome screen at high water flow. Press “Set” with the correct Y or N shown.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Doser options</p> <p>Cont at Hi Flo Y</p> </div>
<p>Where tube fracture alarm option is fitted, press “Adjust” to Select either Y to enable (activate) the tube burst function, or N to cancel it</p> <p>Then press “Set”.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Doser options</p> <p>Tube Burst En. Y</p> </div>
<p>The third option is the selection of operating language. Press “Adjust” repeatedly until the desired language is shown. Then press “Set” to return to the Welcome Screen.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Doser options</p> <p>Lang. English</p> </div>

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<p>The Welcome screen</p> <p>Press "Adjust" (Start)</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Select</p> <p>Start Options</p> </div>
<p>IF ONLY WATER METERING (NO DOSING) IS DESIRED</p> <p>Press "Adjust" (Meter)</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Select</p> <p>Meter Dose</p> </div>
<p>Press "Adjust" repeatedly until the correct flow sensor number (the one to be connected to the doser) is shown. Not all flow sensors will be offered. You will know which to select from the tag that is on the flow sensor plug.</p> <p>Six sensor choices are possible. These will be shown on the Sensor Chart supplied with the doser. Where Water Meter K = 1 is shown, this is for water meters that send out 1 pulse per litre. K = 10 is for when 10 litres per pulse are sent out from the meter (larger meters). Then press "Set".</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Sensor Type</p> <p>3</p> </div>
<p>The Select-388 doser is also a water meter. If you wish to reduce the water total to zero, press "Set". If you wish to keep the water total already recorded, press "Adjust".</p> <p>The water total is updated each 5 minutes. Short recording times may lose a small amount of water data.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Zero water tot?</p> <p>No Yes</p> </div>
<p>This is the metering screen. The water flow rate is 4,740 litres per hour, Sensor 3 has been selected, and the total on the water meter is 108 litres. The water total will be shown as the same on both sides of the Select-388, assuming both totals were zeroed at the same time.</p> <p>By pressing the "Adjust" button, you will return to the Welcome screen.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Meter only 4740H</p> <p>00000108T S3</p> </div>
<p>This is the Welcome screen.</p> <p>Press Start ("Adjust")</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Select</p> <p>Start Options</p> </div>
<p>TO DOSE PRODUCT USING THE SELECT-388 DOSER</p> <p>Press "Set" (Dose) to start the dosing process. Each side of the pump is configured separately.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Select</p> <p>Meter Dose</p> </div>
<p>First choose the flow sensor that is to be connected to the doser (it will be written on a tag attached to the sensor plug).</p> <p>Six sensor choices are possible. These will be shown on the Sensor Chart supplied with the doser. Where Water Meter K = 1 is shown, this is for water meters that send out 1 pulse per litre. K = 10 is for when 10 litres per pulse are sent out from the meter (larger meters). Then press "Set".</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Sensor Type?</p> <p>3</p> </div>

<p>By pressing "Adjust" repeatedly the available ratios are shown. When the desired ratio is shown, press "Set".</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Ratio 1:?</p> <p>1K</p> </div>
<p>Ratio of 1:1000 will be shown as on this screen where K is the abbreviation for thousand. 12K5 is 1:12,500, 20K is 1:20,000.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Ratio 1:?</p> <p>12K5</p> </div>
<p>Once the desired ratio has been selected, the correct tube to fit is displayed. Fit the correct colour pump tube as described in the Quick-fit Instructions on Page 3.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>1:50</p> <p>Use tube: Orange</p> </div>
<p>Pump tubes may be slightly too large or too small after manufacture. The correction for this is shown as % "Adjust" on the packet that the tube was supplied in. Press "Adjust" to scroll from -20% to +20% until the correct tube "Adjust" is shown. Then press "Set".</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>"Adjust" %</p> <p>-5%</p> </div>
<p>The Select-388 doser is also a water meter. If you wish to reduce the water total to zero, press "Set". If you wish to keep the water total already recorded, press "Adjust".</p> <p>The water total is updated each 5 minutes. Short recording times may lose a small amount of water data.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Zero water tot?</p> <p>No Yes</p> </div>
<p>In order to fill up the delivery tube with the product to be dosed, press "Set" (Yes). The pump will run constantly to fill the delivery tube. Press No if tube filling is not required.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Prime pump?</p> <p>No Yes</p> </div>
<p>This screen will be shown while the pump is running to fill the delivery tube. Press Stop once the tube is full up to the injection assembly.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>Priming...</p> <p>Stop</p> </div>
<p>For the first few seconds, this screen will be shown. The doser is collecting water flow information before dosing commences.</p>	
<p>This is the normal dosing screen. A ratio of 1:1000 has been selected, the Orange pump tube should be fitted, the water flow rate is 420 litres per hour, the water meter is showing a total of 106 litres, and Sensor 3 has been chosen.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>1K Omg -5 420H</p> <p>00000106T S3</p> </div>

<p>If the water flow is too high for the doser to be able to dose correctly, this screen is shown each 5 seconds alternating with the normal dosing screen to show the water total. If “Cont at Hi Flo?” is “Set” at Yes (in Options), the doser will run continuously, but will return to normal dosing when the water flow reduces to a manageable level. Press “Adjust” for a short time to return to the Welcome Screen and clear the “High Flow!” message.</p> <p>The High Flow message will be displayed at the start of a 5 second dosing period.</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>1K Ong -5 1420H</p> <p>High Flow! S3</p> </div>
<p>In situations where good practice demands that water meter readings are taken daily, after taking the meter reading press and hold the Set button. The water meter reading will be reduced to zero without having to scroll through other doser settings.</p>	

To make any adjustments to settings, return to the Welcome Screen and progress through the options. To return to the Welcome Screen, press and hold “**Adjust**” from the Operational Screen.

On the Operational Screen, the following colour abbreviations are used for pump tubes:

Orange	ONG
White	WHT
Yellow	YEL

Changing Pump Tubes

ENSURE EITHER THE POWER SUPPLY OR FLOW SENSOR LINE IS DISCONNECTED BEFORE
CHANGING THE PUMP TUBE.
OTHERWISE ROTOR TURNING IS POSSIBLE

To install or change pump tubes – see the Quick-Fit instructions above.

Ensure that all connectors between the pump tube and delivery tubes are secure.

Pump Tube Life

The life of the pump tube will depend on many factors including the product being dosed, the back pressures under which the pump is working, and the amount of time the pump needs to run to perform correctly. It is suggested that, in order to maintain dosing accuracy, the pump tube is replaced on a MONTHLY BASIS or sooner if wear or disfiguration of the tube is apparent. Spare tubes are available from your pump supplier. Note: Only tubes supplied by Dosing Solutions Ltd are recommended for use in the Select-388 dosing system to ensure accuracy of operation.

Safety

The Select-388 doser is an extremely safe unit. However, the following points should be observed:

Normal electrical safety precautions apply. Avoid water contact with any pump parts apart from the pump tube in normal working. Do not immerse the Select-388 doser in water.

Take precautions to ensure the Select-388 doser can not fall into the stock solution. Consider extra fastening if necessary. Cover stock solution at all times. If immersion does happen accidentally, isolate the Select-388 Doser from the electrical supply immediately.

The use of safety circuit breakers is recommended. If in doubt seek advice from a qualified electrician.

Accuracy

The Select-388 doser is factory set to give accurate dosing. If, during normal operation, the output needs to be increased or decreased slightly, this can be achieved via the screen command ““Adjust” %”.

Electrical Supply

The Select-388 doser uses a 12V DC power supply. A 5A maximum current power supply is recommended and is normally supplied with the doser. A car battery can also be used using battery leads and clips supplied by Dosing Solutions.

The Water Flow Sensor

Any of the standard Dosing Solutions flow sensors can be used with the Select-388. The Sensor Chart supplied with the doser will list the sensors programmed into your doser. Flow sensors can be plugged directly into the DIN socket on the doser. Water meters need to be connected to the doser using the "Water Meter Connect" adaptor plug that is supplied with the doser. This is important as there are electronic components inside the plug of the "Water Meter Connect" assembly that modify the signal from water meters to make them acceptable to the Select-388.

Water Meter Total and Zero

Note: the maximum quantity of water that is shown on the water total quantity is 100,000,000 litres. After this the meter will return to zero, and water metering will re-commence as normal.

The water total can be returned to zero at any time from the dosing screen by pressing ""Set"" and holding for 3 seconds.

Flow Sensor Capacities

There is a maximum limit on the flow of water permissible through each flow sensor. The maximum flows are:

TBR 10 (Sensor 1)	400 l/hr
VTY 10 (Sensor 2)	1,500 l/hr
VTH 25 (Sensor 3)	10,000 l/hr
VTH 40 (Sensor 5)	25,000 l/hr
Water Meters	See manufacturers' specifications

Proportional Dosing

The dosing ratios on each side of the Select-388 doser are specified by the data-set number either on the smaller of the two computer chips on the PCB inside the doser, or on the label on the side of the doser. There are 15 ratios installed for each of the 6 flow sensors. If the ratio you need to use is not already programmed, please contact your Distributor. All ratios are possible - the most frequently used ones are programmed as standard.

During proportional dosing, the Select-388 doser constantly monitors the water flow in the drinking line. Each 5 seconds the doser injects exactly the right amount of additive into the drinking line or tank according to the ratio of administration selected.

When water flows are low, it is possible that the rotor may not turn in one or more of the 5 second periods. In this state, the doser will store accumulated flow information until it is possible to make a minimum turn of the pump rollers.

Complete mixing of additive into the drinking water is achieved by turbulent flow in pipe work.

Pumping Problems / Errors

If the Select-388 doser fails to operate correctly, check the following: (If the problem cannot be resolved contact your Distributor)

Problem	Solution
Error message "High Flow" showing on screen	<ol style="list-style-type: none"> 1. Problem may have passed, check if max. water flow is still being exceeded 2. Consider using more concentrated stock solution at a lower inclusion ratio. 3. Possible pump fault. Contact your Distributor.
Incorrect dosing	<ol style="list-style-type: none"> 1. Check for low battery power (if external battery is in use). 2. Pump tube should be replaced regularly. Replace if necessary. 3. Flow sensor could be entangled with debris. Check and clean if necessary. NOTE: clear carefully – delicate mechanism. Fit filter up-stream of sensor and clean regularly. 4. Is correct dosing ratio selected? 5. Water pressure in the drinking water line should not exceed 5 bar. Fit pressure reduction device if necessary. 6. Incorrect Tube "Adjust" Factor entered on the control screen. Check and re-enter. 7. Incorrect pump tube fitted. Are screen details correct? 8. Is the correct coloured roller assembly being used for the pump tube being used?
Medication not being pumped from stock container	<ol style="list-style-type: none"> 1. Check all tube connections are firmly in place. 2. Inlet tube could be blocked. Clear as necessary. 3. The end weight that is supplied with the doser should be used. This will ensure the suction tube is submerged in the dosed product. 4. Is the product container empty?
Sudden loss of pumping pressure (with possible return of fluid into stock container)	<ol style="list-style-type: none"> 1. Check that non-return valve is fitted correctly (arrow facing down or by blowing in it) and that the delivery line is not being blocked. 2. Check blue ferrules are fitted correctly. Replace if damaged
Error message "pump error"	<ol style="list-style-type: none"> 1. A failure of the motor is indicated. Check that connections to circuit board from motor are in place. Consult Distributor.
Tubes wearing down quickly	<ol style="list-style-type: none"> 1. Check that the rotors are free of debris, corrosion and able to turn freely. Check and clean / replace if necessary.
Proportional dosing does not commence	<ol style="list-style-type: none"> 1. Check flow sensor connected 2. Check there is water flow 3. Is power supply sufficient?

Maintenance

Weekly

Flush out filters protecting the flow sensor.

Inspect the pump tube for signs of wear.

Check doser output. Adjust as necessary via the control screen.

Monthly

Replace pump tube monthly or sooner if any of the following occur:

- Sharply increased rate of dosing
- Split tube
- Make sure rotor is free of debris and running freely

Each 6 Months

After disconnecting from electric supply, remove cover from Select-388 doser and inspect interior of pump enclosure. Ensure that there is no moisture or other contaminant. In case of difficulty, contact your supplier.

Spare Parts and Accessories

Item		Code
Select-388 doser unit	Unit	388CA00
Flow sensor (VTY10)	unit	160CA03
Flow sensor (VTH25)	unit	160CA05
Flow sensor (VTH40)	unit	160CA08
Replacement pump tube	Orange	330CA20
Replacement pump tube	White	330CA10
Replacement pump tube	Yellow	330CA05
Duckbill non-return valve	unit	385CA25
Delivery tube (3m) plus end weight	unit	340CA10
Injection assembly	unit	385CA24
Power supply 12V-DC 5A	unit	019CA05