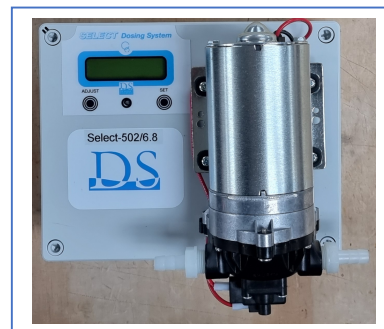


SELECT Dosing System

Select-502 / 6.8



Instructions for Use

Ref: 44 IFU 502 6.8 Jan 22
180/1040

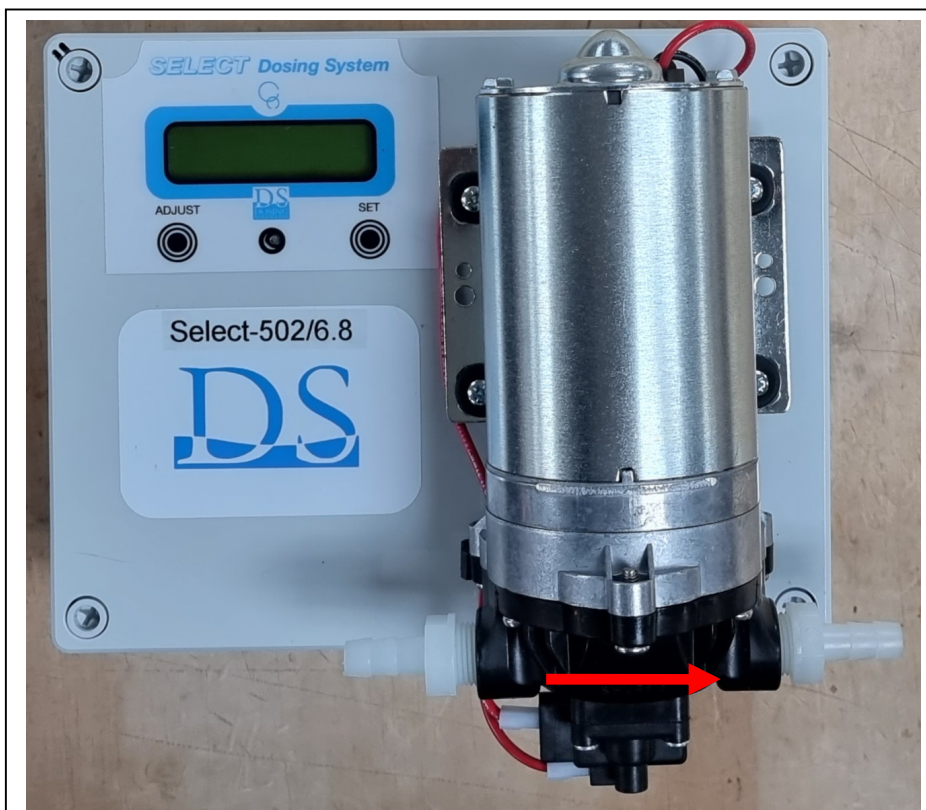
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The Select-502 / 6.8 doser

 Direction of flow of pumped product



Two 12V power supplies need to be connected as shown

Description

The Select-502 / 6.8 dosing system is a proportional additive pump designed to incorporate medications, vaccines, nutritional products, acidifiers, and sanitizers into a flow of water. This doser is suitable for use with line pressures up to 7 bar and for product flow rates up to 400 l/hr. The components are: the main pump unit, a water flow sensor, and connections to the drinking lines. All parts inside the Select-502 / 6.8 doser can be repaired or replaced.

Installation

Connect the plug from the flow sensor or water meter into the Select-502 / 6.8 doser unit. If a water meter is being used, ensure that you use the "Water Meter Connect" assembly supplied by Dosing Solutions. Connect the Select-502 / 6.8 doser to the two power supplies as shown in the picture above. Choose program options from the control screen. Ensure the inlet and outlet delivery tubes are connected onto the hose barbs on either side of the black pump head, noting the direction of flow as shown in the picture above. It is advisable to use a length of rigid plastic pipe inserted into the product container. The flexible delivery tube on the inlet side can be fed into the rigid pipe to ensure that the delivery tube remains towards the bottom of the product container. Connect delivery outlet tube into quick-fit connector supplied which is fitted into a T-piece. Commence proportional dosing.

Position the dosing point on the water lines so as to be convenient for a power source if power is to be taken via a transformer from the mains. Ensure that the Select-502 / 6.8 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 female injection connector is valved. The valve is opened once the male end on the delivery tube is pushed on.

Note: The pump will self-prime up to 2m. Avoid running the pump dry as damage may result.

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> <div>Select</div> <div>StartOptions</div> </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.</p> <p>Press "Set" with the correct Y or N shown.</p>	<div> <div>Doser options</div> <div>Cont at Hi Flo Y</div> </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> <div>Doser options</div> <div>Tube Burst En. Y</div> </div>

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<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> Doser options Lang. English </div>
<p>The Welcome screen</p> <p>Press “Adjust” (Start)</p>	<div> Select Start Options </div>
<p>IF ONLY WATER METERING (NO DOSING) IS DESIRED</p> <p>Press “Adjust” (Meter)</p>	<div> Select Meter Dose </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>Then press “Set”.</p>	<div> Sensor Type 3 </div>
<p>The Select-502 / 6.8 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> Zero water tot? No Yes </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.</p> <p>By pressing the “Adjust” button, you will return to the Welcome screen.</p>	<div> Meter only 4740H 00000108T S3 </div>
<p>This is the Welcome screen.</p> <p>Press Start (“Adjust”)</p>	<div> Select Start Options </div>
<p>TO DOSE PRODUCT USING THE SELECT-502 / 6.8 DOSER</p> <p>Press “Set” (Dose) to start the dosing process.</p>	<div> Select Meter Dose </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>Then press "Set".</p>	<div>Sensor Type?</div> <div>3</div>
<p>By pressing "Adjust" repeatedly the available ratios are shown. When the desired ratio is shown, press "Set".</p>	<div>Ratio 1:?</div> <div>1K</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>Ratio 1:?</div> <div>12K5</div>
<p>This doser does not use pump tubes. Ignore this screen and press Set.</p>	<div>1:50</div> <div>Use tube:</div>
<p>You may wish to slightly adjust the output of the doser (to trim pH levels for example). An Adjust value of +5% will lead to the pump dosing 5% more product.. Press "Adjust" to scroll from – 20% to +20% until the correct tube "Adjust" is shown. Then press "Set".</p>	<div>"Adjust" %</div> <div>-5%</div>
<p>The Select-502 / 6.8 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>Zero water tot?</div> <div>No Yes</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>Prime pump?</div> <div>No Yes</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>Priming...</div> <div>Stop</div>
<p>For the first few seconds, this screen will be shown. The doser is collecting water flow information before dosing commences.</p>	<div>1K -5 0H</div> <div>Dosing... S3</div>
<p>This is the normal dosing screen. A ratio of 1:1000 has been selected, 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>1K -5 420H</div> <div>00000106T S3</div>

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.

1K	-5	1420H
High Flow!		S3

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.

Safety

The Select-502 / 6.8 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 within the pump and flow sensor in normal working. Do not immerse the Select-502 / 6.8 doser in water.

Take precautions to ensure the Select-502 / 6.8 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-502 / 6.8 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-502 / 6.8 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-502 / 6.8 doser uses two 12V DC power supplies. A 10 Amp and a 1 Amp. Connect these as indicated on the pump enclosure.

The Water Flow Sensor

The standard water flow sensor (VTY10) records water flow from 20 litres/hour to 1500 litres/hour. Over 500 electrical pulses are sent from the sensor to the Select-502 / 6.8 doser per litre of water flow. The standard VTY10 sensor will withstand pressures up to 6 Bar. Ensure that the flow sensor is installed in the water line up-stream of the point at which the Select-502 / 6.8 doser injects the additive into the drinking line. Water flow should be in the direction of the arrow on the sensor.

Several flow sensors can be pre-installed in different drinking lines along with connection points for the additive delivery tube. Lines can then be individually medicated.

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.

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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:

VTY 10 (Sensor 2)	1,500 l/hr
VTH 25 (Sensor 3)	10,000 l/hr
VTH 40 (Sensor 5)	25,000 l/hr

Proportional Dosing

The dosing ratios in each Select-502 / 6.8 doser are specified by the code 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.

During proportional dosing, the Select-502 / 6.8 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. Ensure that the product injection point is placed sufficiently far upstream of the point of use to ensure mixing can happen.

Maximum Water Flows for Each Dosing Ratio

The maximum water flow for any ratio is: Pump output x dosing ratio

For example, the maximum output of the pump in this case is 400 l/hr. If dosing at 1:200, the maximum water flow rate that can be accurately dosed is $400 \times 200 = 80,000$ l/hr.

If the Select-502 / 6.8 doser is turning for almost the full 5 seconds of each 5 second dosing period, this is the maximum output of the pump. If the water flow is exceeded then "High Flow" will be shown on-screen.

Note: The actual maximum water flow allowable will be the lower value of the calculation above, or the sensor flow capacity shown above (Flow Sensor Capacities).

Alarms and Warnings

If a high water flow situation is detected where the doser is unable to keep pace, the doser will either continue to dose and display "High Water Flow" on-screen (If the "Cont.at Hi. Flo? Option is answered Yes under Options) or a warning will be shown on-screen and the doser will stop operation (If the "Cont.at Hi. Flo? Option is answered No under Options).

If, for some reason the rotor becomes jammed or there is a mechanical fault within the pump drive system a warning – "Pump Error" may appear on-screen. If the fault is not immediately apparent and rectifiable, PLEASE CONTACT YOUR DISTRIBUTOR.

Water Line Pressure

The Select-502 / 6.8 doser will operate against a water pressure in the drinking line of up to 7 bar. (7 bar = 100 psi = 70m H₂O). Fit a pressure reduction device if necessary. The flow sensor is rated to 6 bar.

Pumping Problems / Errors

If the Select-502 / 6.8 doser fails to operate correctly, check the following: (If the problem cannot be resolved contact your Distributor)

Problem	Solution
Error message "High Water" 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. 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. 3. Is correct dosing ratio selected? 4. Water pressure in the drinking water line should not

	<p>exceed 7 bar. Fit pressure reduction device if necessary.</p> <p>5. Incorrect Tube "Adjust" Factor entered on the control screen. Check and re-enter.</p>
Product not being pumped from stock container	<p>1. Check all tube connections are firmly in place.</p> <p>2. Inlet tube could be blocked. Clear as necessary.</p> <p>3. If a knife has been used to free a tube connector on the inlet side of the pump, the connector could be damaged and letting air into the suction line.</p>
Error message "pump error"	<p>1. A failure of the motor or data encoder is indicated. Check that connections to circuit board from motor are in place. Consult Distributor.</p>
Proportional dosing does not commence	<p>1. Check flow sensor connected</p> <p>2. Check there is water flow</p> <p>3. Is power supply sufficient?</p>

Maintenance

Weekly

Flush out filters protecting the flow sensor.

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

Each 6 Months

After disconnecting from electric supply, remove cover from Select-502 / 6.8 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
The 502 / 6.8 doser	unit	502CA00
Flow sensor (VTY10)	unit	160CA03
Flow sensor (VTH25)	unit	160CA05
Flow sensor (VTH40)	unit	160CA08
Pump unit	unit	502/68
Quick-fit male/female connector	unit	153CA02
Power supply 12V-DC 1A	unit	169CA00
Power supply 12V-DC 10A	unit	019CA10