

# user manual

## Multi-Washer 6000 Series

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# 1.00 overview

## 1.01 Safety Precautions



**WARNING!** Please read precautions thoroughly before operation. Meet all applicable local codes and regulations.

### THANK YOU FOR YOUR INTEREST IN OUR PRODUCTS

Please use this equipment carefully and observe all warnings and cautions.

- Both the unit and its peripheral elements must be handled by qualified technical personnel.
- Make sure the installation is carried out according to the current regulations of the state, county and city.
- Do not mount the unit on an irregular or unstable surface.
- This unit is designed to work in a vertical position.
- The unit must be installed in an area with adequate clearance, far from possible impacts, electromagnetic noise sources and pipelines of gas, steam or water.
- The top of the cabinet is not a shelf! Do not leave objects on the unit.
- Warranty is voided if the user modifies, adds or suppresses any feature of the unit.
- All components involved in maintenance tasks must be the ones registered in the spare parts list supplied by the manufacturer. Otherwise the Warranty is void.
- The installation of the dosing system must be performed according to the instructions of this manual.
- Main electrical power supply must be 110-230VAC at 50 to 60 Hz.
- Always use wires in good condition.
- The water supply to the unit must conform to the specifications of this manual.
- The high pressure air supply to pneumatic pump units must conform to the specifications of this manual.
- The unit should be configured according to the programming manual.
- All chemical products must be stored in approved container, at a safe distance from the unit.
- The handling of chemical products requires the proper safety measures such as protective glasses, mask and gloves.

## 1.02 Overview

The Multi-Washer 6000 Series units are designed to dose chemical products to multiple washer extractors in large on-premise laundries. The maximum number of products that can be used with a single unit is eight (8). Regardless of the number of dosage channels the maximum number of washers the products can be distributed to by a single unit is six (6).

All the components of the system are consistent with general purpose industry standards, and the materials of construction are compatible with all normal laundry products.

The measurements made by the built-in flow meter ensure reliable, accurate and repeatable product dosage. The use of a flow meter also allows for additional safety measures and alarms to prevent mixing of chemicals.

The Multi-Washer 6000 units have five major components:

- 1) The **collection manifold** (Mounted on the main panel.)
- 2) The **dosing channel** (From the collection manifold on the main panel out to the distribution manifold.)
- 3) The **distribution manifold**, (Mounted separately.)
- 4) The **calibration vase**. (Mounted separately.)
- 5) The **communications boxes** (To capture and transmit the signals from each washer extractor to the controller.)

When a qualified signal is detected by the communication box, the unit will dose the appropriate products according to the settings of the formula and washing phase being executed.

# 1.00 overview

## 1.03 Package Contents

### The Multi-Washer 6000 Series (Pneumatic Pump)



#### North American Models

HYDSPD0083	PCB, 8P, <b>4WE</b> , 1CH, NEU, V, USA
HYDSPD0084	PCB, 8P, <b>6WE</b> , 1CH, NEU, V, USA

#### Metric Models

HYDSPD0083M	PCB, 8P, <b>4WE</b> , 1CH, NEU, V, MET
HYDSPD0084M	PCB, 8P, <b>6WE</b> , 1CH, NEU, V, MET

### The Multi-Washer 6000 Series (Electromagnetic Pump)



#### North American Models

HYDSPD0085	PCB, 8P, <b>4WE</b> , 1CH, EM, V, USA
HYDSPD0086	PCB, 8P, <b>6WE</b> , 1CH, EM, V, USA

#### Metric Models

HYDSPD0085M	PCB, 8P, <b>4WE</b> , 1CH, EM, V, MET
HYDSPD0086M	PCB, 8P, <b>6WE</b> , 1CH, EM, V, MET

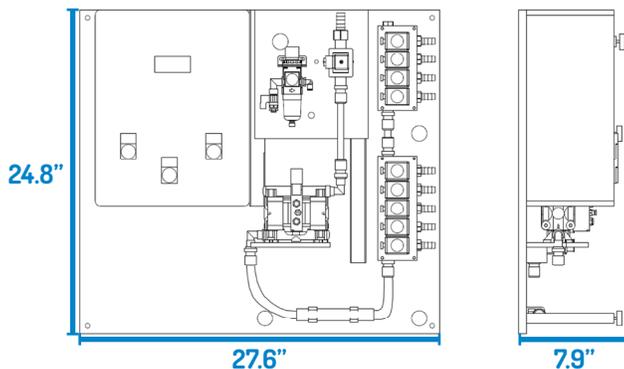
A key feature to these systems is delivering up to **8 chemicals** up to **6 washers** with a single, durable, electric or pneumatic diaphragm pump.

Aiding in the reliability and longevity of the system is a **water flush** that cleans the entire channel after every product delivery. The collection manifold, both sides of the pump, the flow meter, and all the way through the distribution manifold to the washer is flushed with water, to prevent the effects of long-term chemical exposure.

## 1.04 Panel Dimensions

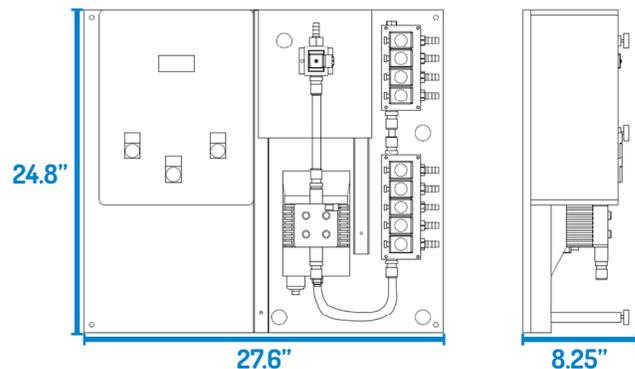
### Multi-Washer 6000 with Pneumatic Pump

Panel Height:	24.8 in (630 mm)
Panel Width:	27.6 in (700 mm)
Panel Depth:	7.9 in (200 mm)



### Multi-Washer 6000 with Electromagnetic Pump

Panel Height:	24.8 in (630 mm)
Panel Width:	27.6 in (700 mm)
Panel Depth:	8.25 in (210 mm)



# 2.00 installation

## 2.01 Preliminary Tasks

It is highly recommended to visit the site well before installation, to familiarize yourself with the physical layout of the laundry, the machines present and their characteristics, the laundry products in use, and how any current laundry dosing system is being employed.

Pay attention to the entire laundry system, its requirements and its schedules, to ensure a smooth transition to, and installation of, your Multi-Washer laundry dosing system.

Learn the operations of all the washers, as well as the products they use, and why. Determine the capacities of the machines and what is involved in programming their signals.

Measure the distance between where the main panel will be installed and the location of the Distribution Manifold(s).

Determine where the communication boxes will be installed for each washer, as well as the lengths of 4-conductor cable needed to daisy-chain them back to the main panel, and the lengths of 10-conductor cable from each communication box to each washer's signal terminals.

Identify the voltage each washer is using for it's signals. Determine how many conductors you need for connecting the main panel and the distribution manifold(s) and the distance for that connection.

Measure the lengths of chemical delivery hose that will be needed to run from the main panel to the distribution manifold(s), from the distribution manifold(s) to the washers, and back to the calibration vase.

Identify how the hoses will be routed, and what hardware will be required to accomplish that scheme.

Identify where the bulk chemicals will be placed and the lengths of hose needed to connect them to the collection manifold of the main panel.

Calculate how many hose clamps will be necessary to complete the installation.

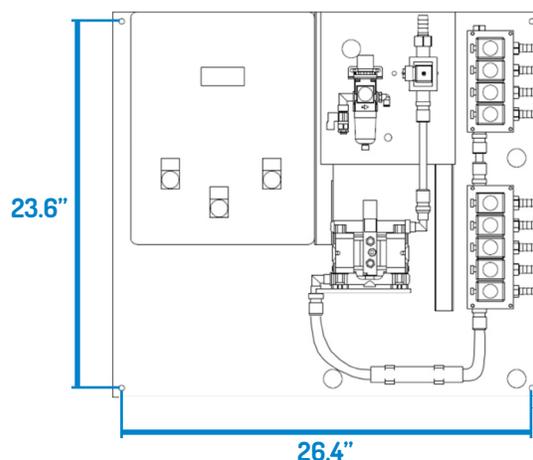
It is recommended to order the specific installation kit for the system being installed, which is available from Hydro Systems. If the mounting hardware is obtained from local providers, all items should be the same as the ones listed in the kit.

Schedule an orderly transition from any previous dosing system in use, and investigate if any portions of that system must be removed before the installation of the Multi-Washer system. In case a previous unit is already working in the site, all the existing elements must never interfere with the new installation.

## 2.02 Panel Mounting

- In order to make the unit work correctly, it must be placed on a clear and flat wall.
- The system must be placed at such a height that the screen can be easily manipulated.
- The unit is mounted with four corner brackets that are **approximately** 223.6 in by 26.4 in (600 mm by 670 mm) apart, but may vary slightly, so use the actual panel being installed as a template. For the supplied mounting hardware, drill four 5/16" (8 mm) holes at indicated locations.
- Insert the included fittings.
- Place the unit on the wall and use the included screws and mounting hardware to hang the system.

(Multi-Washer 6000 Pneumatic shown, but mounting measurements are the same.)



Approximate Dimensions for Mounting Brackets

# 2.00 installation (continued)

## 2.03 Peripheral Elements

After placing the unit, it is necessary to mount the rest of the elements:

**Distributor:** This element is responsible for diverting the products to the corresponding washer extractor. Only one machine is attended while the others are queued. It is recommended to set the distributor at a position equidistant from the washer extractors.

**Calibration Vase:** Since this vase is used for dosage calibration, it should be installed on the wall near the main panel. Please note the vase is connected by a hose to the distribution manifold. Make provision for draining the calibration vase and for overflow from the vent fitting.

**Communication Boxes** (machine signal interfaces): These elements are used to get the signals from the machines so they can be acquired by the unit. There must be one box per washer extractor. The recommended position is a clear place on the wall behind every machine.

## 2.04 Tubing

Once all elements are on the wall, their fittings must be connected with the tubes. We recommend to use 1/2 inch reinforced tubing.

**Water Inlet:** Make sure there is enough water supply for the unit: 20 PSI or 1.5 bar in dynamic range.

If this is not possible, it is mandatory to install a Pressure Control to achieve this condition.

**Chemical Pickup:** Decide the best distribution for the tanks / drums of product.

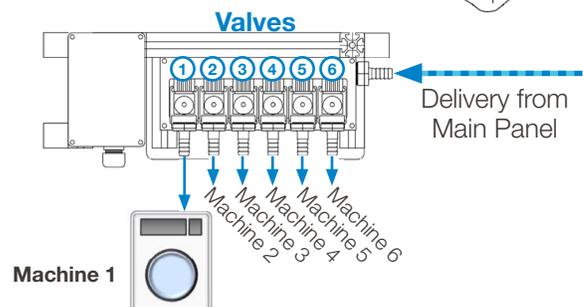
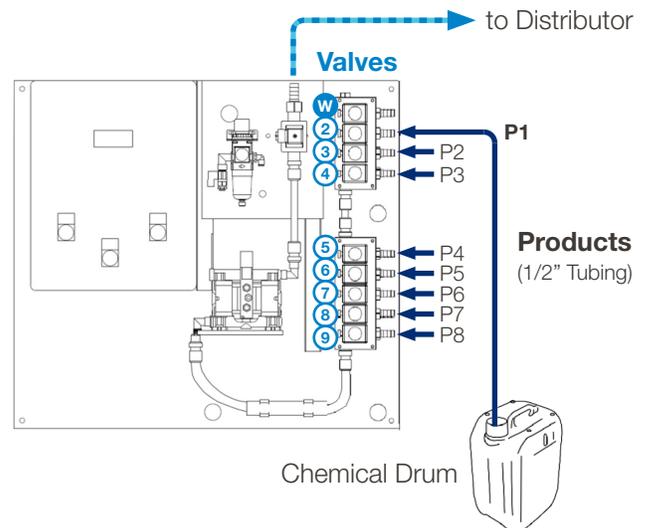
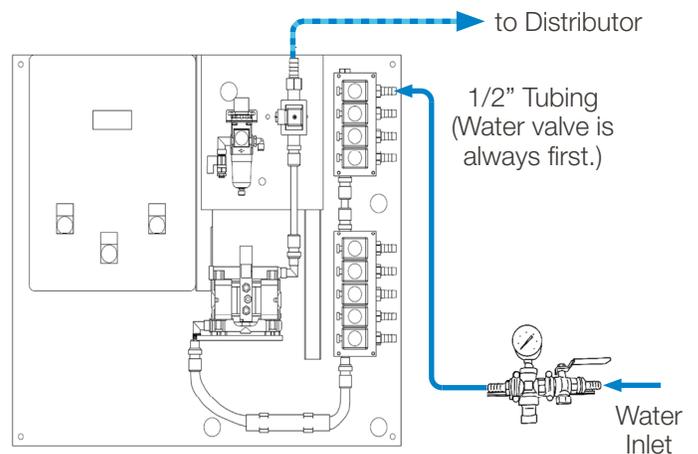
After that, connect all tubes from the inlets at the unit's manifold to the suction lances.

- Inlet Valve 1 = Water Inlet**
- Inlet Valve 2 = Product 1**
- Inlet Valve 3 = Product 2**
- Inlet Valve 4 = Product 3**
- Inlet Valve 5 = Product 4**
- Inlet Valve 6 = Product 5**
- Inlet Valve 7 = Product 6**
- Inlet Valve 8 = Product 7**
- Inlet Valve 9 = Product 8**

**Distributor Tubing:** Install the delivery tubing from the main panel to the distributor inlet and connect each distributor delivery tube to the appropriate washer, as shown to the right.

- Distributor Valve 1 = Machine 1**
- Distributor Valve 2 = Machine 2**
- Distributor Valve 3 = Machine 3**
- Distributor Valve 4 = Machine 4**
- Distributor Valve 5 = Machine 5**
- Distributor Valve 6 = Machine 6**

(Multi-Washer 6000 with Pneumatic Pump is shown for illustration.)



# 2.00 installation (continued)

## 2.04 Tubing (continued)

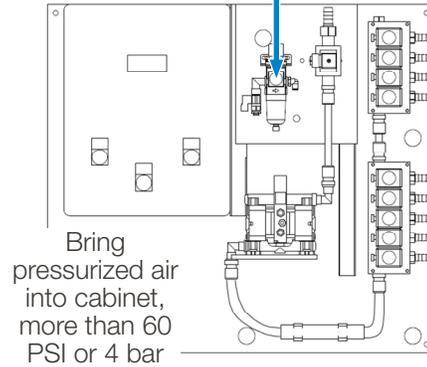
**Pressurized Air Connection:** (Pneumatic Pump Only)  
For units with a pneumatic pump, make sure their is sufficient air pressure (more than 60 PSI or 4 bar).

Remember the main air inlet tubing is 8 mm.

Once the main inlet is connected to the unit, set the regulator to 60 PSI or 4 bar.

(Multi-Washer 6000 with Pneumatic Pump is shown for illustration.)

Set air pressure regulator to 60 PSI or 4 bar



## 2.05 Electrical Connections

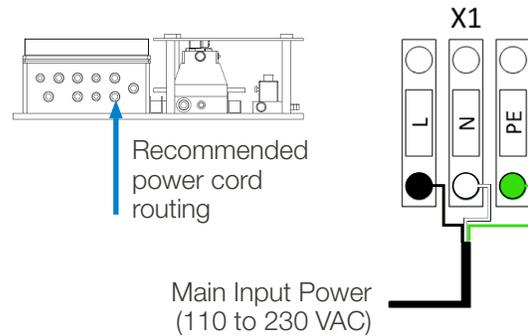
**Main Input Power:** Connect a 110 to 230 VAC source to the X1 connections in the cabinet.

Remember never to get the power from a washer extractor. An independent 10 amp breaker is recommended.

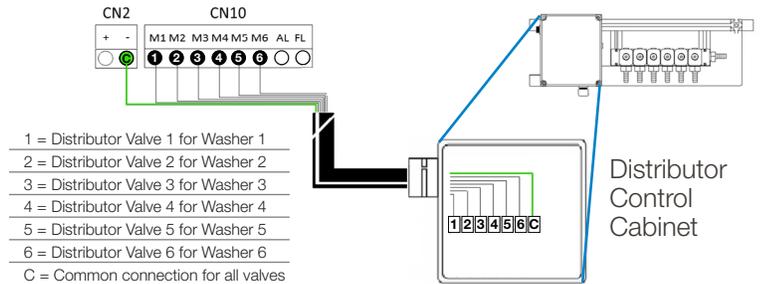
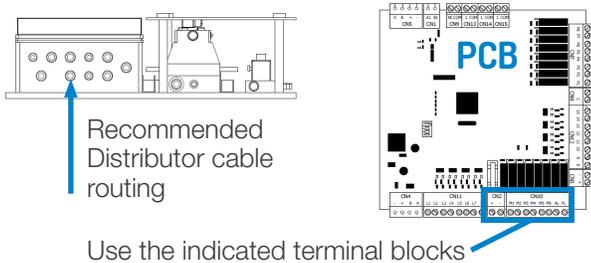
The power cable must be constructed of 3 wires with at least 1.5 mm cross-section.

- Line/Phase (black) goes to the 'L' connector.
- Neutral (white) goes to the 'N' connector.
- Ground (green) goes to the 'Ground' connector.

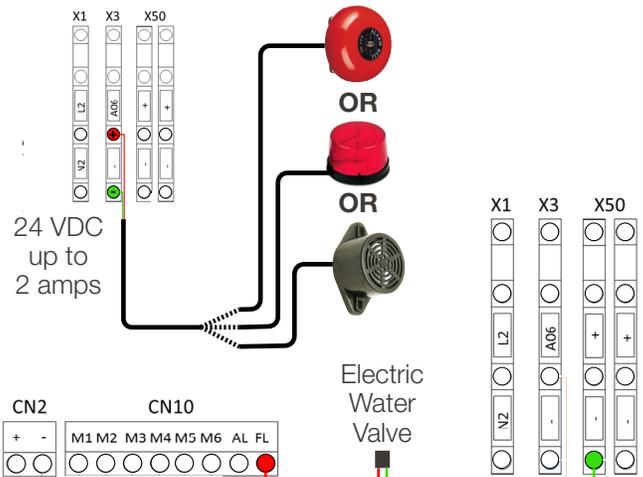
Once the power is supplied to the unit, all inputs, outputs and communications may be configured.



**Distributor Connections:** Follow the wiring diagrams to below, when making the electrical connections between the main panel and the distributor control cabinet



**External Alarm Annunciator Connection:** The contact at A06 provides 24 VDC at up to 2 amps, to power an external alarm signaling device, like a bell, strobe or buzzer. Make the positive DC connection to A06, and the negative DC connection to the contact M, as shown to the right.



**Electric Water Valve:** The positive connection gets power from the "FL" contact on terminal block CN10, and the negative connection is grounded at terminal block X50.

# 2.00 installation (continued)

## 2.05 Electrical Connections (continued)

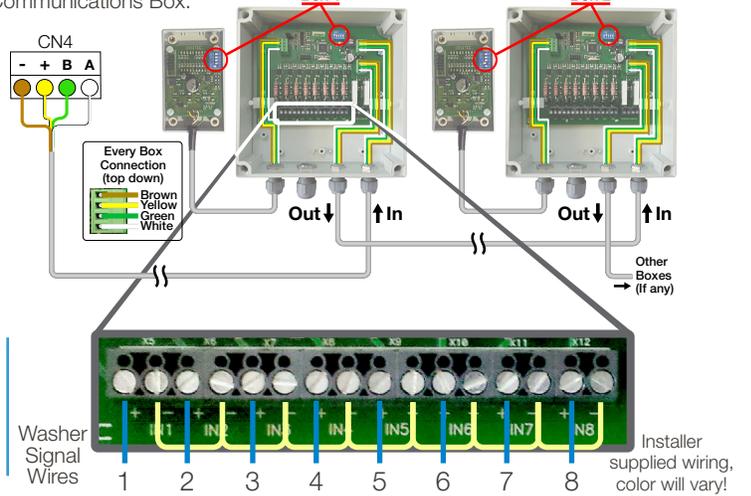
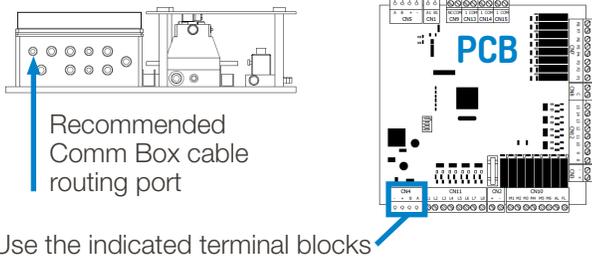
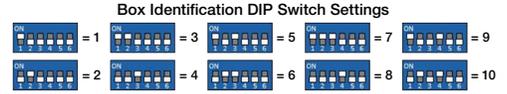


**Be sure the unit is turned off, unpowered, before connecting the communication boxes.**

**Communication Boxes:** Bring the four conductor cable from the first Comm Box into the Main Panel cabinet, and connect the four wires to the contacts at Terminal Block CN4, as shown below.

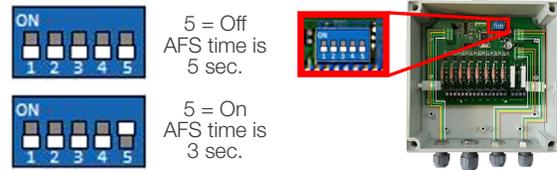
If there are Formula Selector boxes in use, their DIP Switch must be set to the same ID as the Comm Box.

Notice the Formula Select boxes have the same ID as their Communications Box.



**Machine Signals:** The signal wires from each washer connect to their Communications Box using the row of connectors at the lower edge of the circuit board, with the grounds jumpered to have a common connection, as shown to the right.

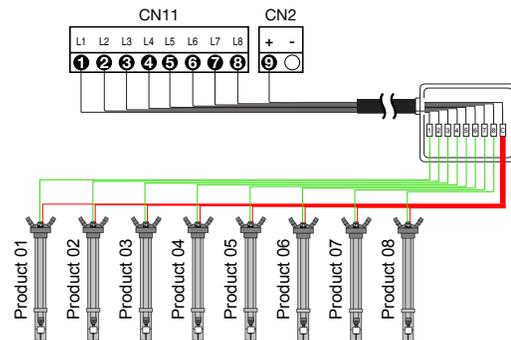
**DIP Switch 5 - Auto-Formula Select Time:** On the DIP switch that identifies the Communications Box (see above), the fifth DIP switch is used to adjust the time period for Auto-Formula Select (AFS). With switch 5 in the **Off position, 5 seconds** is the AFS time, so an AFS signal of 15 seconds would select Formula 3. With switch 5 in the **On position, 3 seconds** is the AFS time, so an AFS signal of 9 seconds would select Formula 3.



**Product Level Probes:** Use the connections “L1” through “L8” on Terminal Block CN11 to connect as many as eight (8) product level-sensor lances, so the controller can detect when a product level is getting low in the chemical drum.

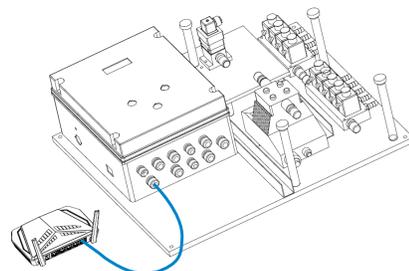
All the probes can use a common power wire connected to the positive contact of terminal block CN2.

The diagram to the right shows a junction box being employed to simplify the wiring and possible maintenance.



**Internet Connection:** The controller has an Ethernet port for communicating across networks and over the Internet.

- **Cell Modem Connection:** If a strong signal is available near the laundry room, you can connect the controller to a cellular modem, to create a connection to the Internet. A monthly data subscription is required.



# 3.00 programming

Programming the Multi-Washer 6000 Series laundry dispenser consists of “**Creating a Program Settings File**”. Follow the steps detailed below to create a program settings file that contains the settings you desire.

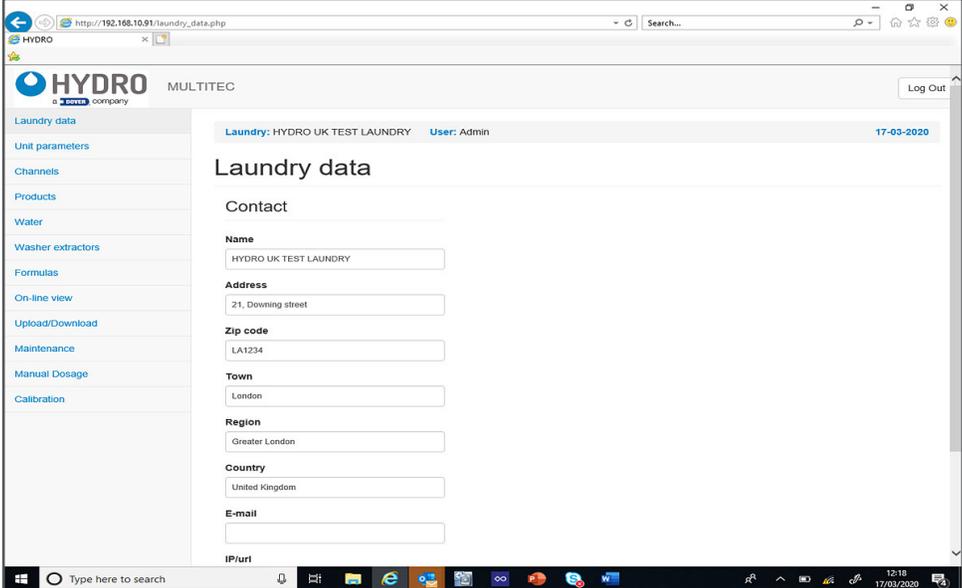
## 3.01 General

1) From a laptop or smartphone connect to the unit WIFI by connecting to multitec\_6\_ xxxx.

- Enter Password; dositecsistemas

2) Open up a web browser and insert IP 192.168.10.91 in the search bar and this will be diverted to the main page.

- Insert email admin@multitec.com
- Password 1111



The screenshot shows a web browser window with the URL `http://192.168.10.91/laundry_data.php`. The page title is "HYDRO MULTITEC" and it includes a "Log Out" button. The left sidebar contains a menu with items: Laundry data, Unit parameters, Channels, Products, Water, Washer extractors, Formulas, On-line view, Upload/Download, Maintenance, Manual Dosage, and Calibration. The main content area is titled "Laundry data" and shows "Laundry: HYDRO UK TEST LAUNDRY" and "User: Admin" with a date of "17-03-2020". Under the "Contact" section, there are input fields for Name (HYDRO UK TEST LAUNDRY), Address (21, Downing street), Zip code (LA1234), Town (London), Region (Greater London), Country (United Kingdom), E-mail, and IP/url.

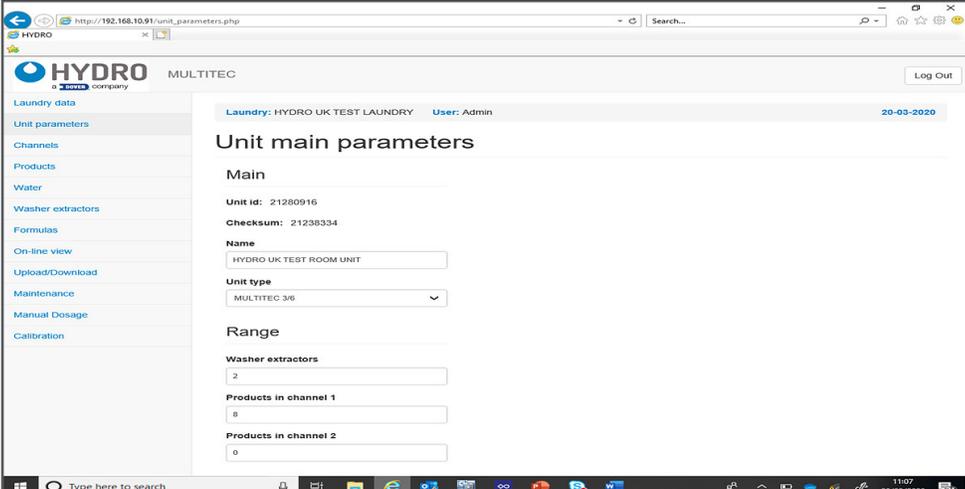
General Laundry Settings

3) Enter the laundry details, it is essential to add a contact name and email address.

4) When all details have been entered click Save at the bottom of the page.

## 3.02 Unit Parameters

1) Click on Unit parameters in the left-hand column, the below page will open.



The screenshot shows a web browser window with the URL `http://192.168.10.91/unit_parameters.php`. The page title is "HYDRO MULTITEC" and it includes a "Log Out" button. The left sidebar contains a menu with items: Laundry data, Unit parameters, Channels, Products, Water, Washer extractors, Formulas, On-line view, Upload/Download, Maintenance, Manual Dosage, and Calibration. The main content area is titled "Unit main parameters" and shows "Laundry: HYDRO UK TEST LAUNDRY" and "User: Admin" with a date of "20-03-2020". Under the "Main" section, there are fields for Unit id (21280916), Checksum (21238334), Name (HYDRO UK TEST ROOM UNIT), and Unit type (MULTITEC 3/6). Under the "Range" section, there are fields for Washer extractors (2), Products in channel 1 (8), and Products in channel 2 (0).

Unit Parameters

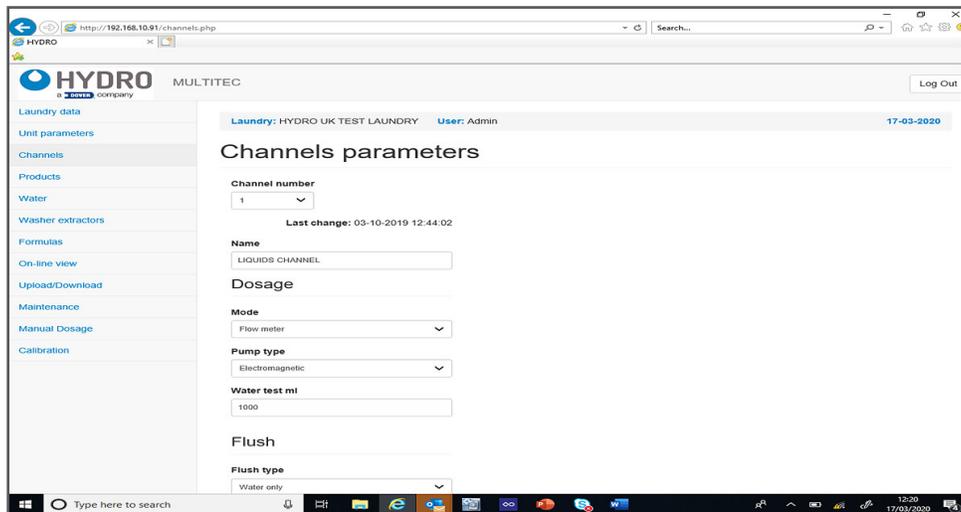
# 3.00 programming (continued)

## 3.02 Unit Parameters (continued)

- 2) Name – enter the name you wish to give the unit.
- 3) Enter machine type – Multitec 6.
- 4) Range
  - Washer extractors – the amount of washer extractors you are connecting the unit to.
  - Products in channel 1 – the number of chemical products you are connecting to the channel.
  - Products in channel 2 – the number of chemical products you are connecting to the channel.
- 5) When all values have been entered click on Save at the bottom of the page.

## 3.03 Channels Parameters

- 1) Click on Channels in the left-hand column, the below page will open.



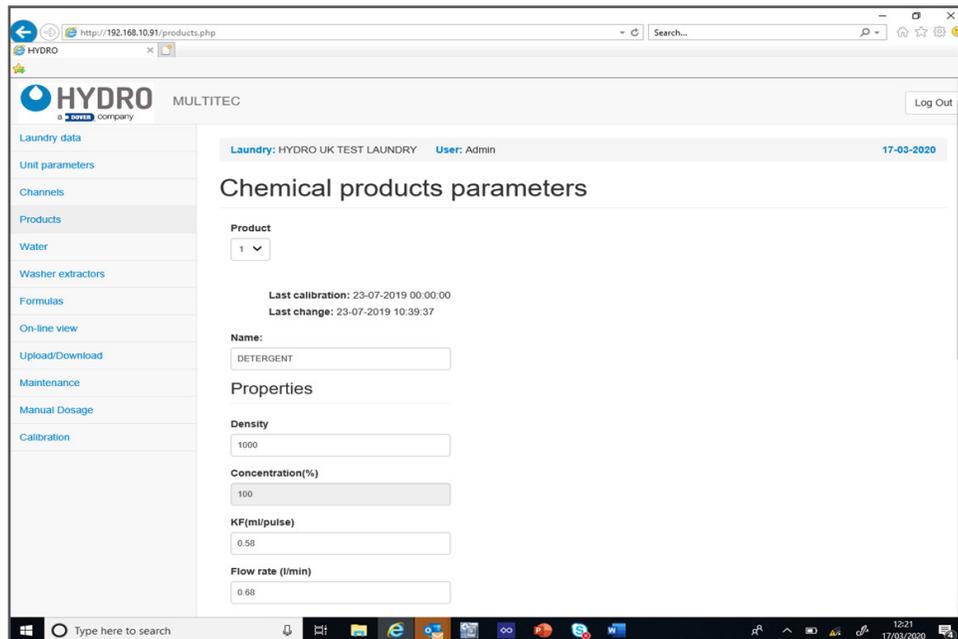
Unit Parameters

- 2) Channel number – choose the channel you wish to program 1 or 2.
- 3) Name – name the channel.
- 4) Mode – choose from the following; time, flow sensor or flow meter. Recommended; flow meter.
- 5) Pump type – Electromagnetic or pneumatic, dependent on which type is installed on the unit.
- 6) Water test – amount of water required to create the test within the channel in ml.
- 7) Flush
  - Flush type – None (direct) or water only (Air flush currently unavailable).
  - Water flush only; use this setting if all chemicals are being pushed to their destination by water only.
  - Direct flush; use this setting if no flush is required to take the products to the inlet and you are pumping them to their destination, this must always be used with very high viscous products i.e. Starch when only one product must be used in the channel. \* It is important to remark that direct flush can only be used when there is only one product in the channel (whatever the product is).
- 8) Alarms
  - Skipped alarms – the amount of alarms that the unit will accept before the alarm buzzer Initiates on the unit and stops dosages. Start at 1 and then change to 3 after initial commissioning.
  - Tolerance % - recommended 30%, allows extra theoretical time to obtain the correct amount of pulses given by the flow meter when delivering the flush.
- 9) Click on Save at the bottom of the page.

# 3.00 programming (continued)

## 3.04 Product Parameters

1) Click on Products in the left-hand column, the below page will open.



Product Parameters

2) Product – choose the valve number you want to program i.e. 1. Remember the product order starts with the valve next to the water one.

3) Name – enter the name of the product.

4) Properties:

- Density – enter the density of the product, this can be obtained from your chemist. (grams / litre).
- Concentration – enter the concentration of the product. (Always 100% unless the product is a stock solution or the dosages are referred to the raw material only).
- K/F (mls/pulse) – performing calibration will set this.
- Flow rate (L per min) – performing calibration will set this.

5) Dosage:

- Priority- this must be set for each chemical, if “0” the chemical will not dispense.
- Priority must be set higher for the products in the shortest stage of the wash program e.g.
- Softener should be set at 1-2.
- Priority determines the next machine in the queue to receive the dosage depending on the product it is asking for.
- Mode – time or flow meter, recommended flow meter. Time mode inhibits the product dosage alarms. It should only be used if the product is extremely viscous or the flow meter is damaged.
- Estate – Liquid or stock solution.

6) Alarms:

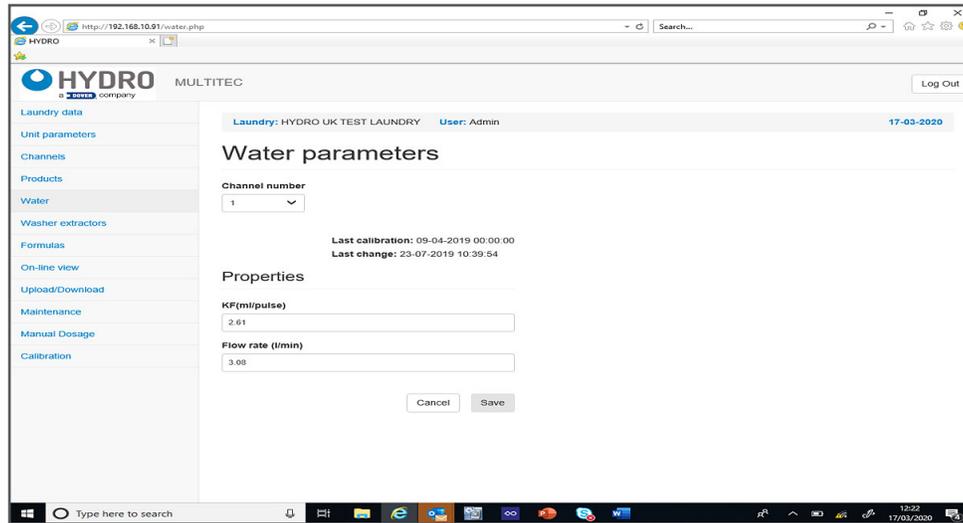
- Skipped alarms – start up at 1 and then change to 3 once start-up has been completed, this is the amount of times the unit can receive an error before it alarms. If an error is received and then the next dosage is correct the skipped alarm will default back to 0.
- Tolerance % - recommended 30% but may be higher, allows extra theoretical time to obtain the correct amount of pulses given by the flow meter when delivering the chemical. Note\* viscous products require a higher tolerance, more time must be added not ml.
- Level contact - depends on the suction lance, normally open/normally closed

7) Click on Save at the bottom of the page.

# 3.00 programming (continued)

## 3.05 Water Parameters

1) Click on Water in the left-hand column, the below page will open.



Water Parameters

2) Channel number – dependent on how many channels the unit has, if more than 1 select other numbers to check and save parameters.

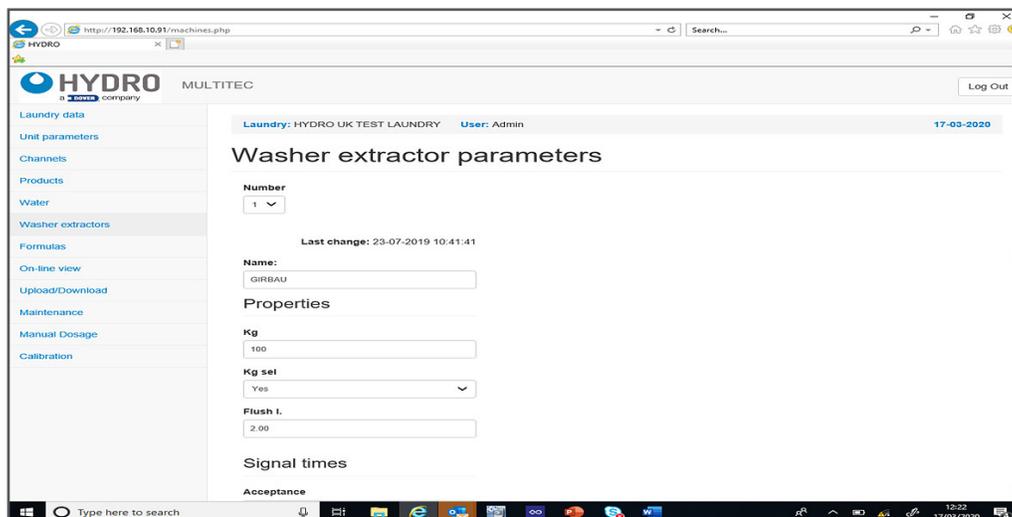
3) Properties:

- KF (ml/pulse) mls of water per pulse recorded by the flow meter when calibrated
- Flow rate – (l/min) litres per min of water passing through the flow meter, recorded when water is calibrated.

4) Click on Save at the bottom of the page.

## 3.06 Washer Extractor Parameters

1) Click on Washer Extractors in the left-hand column, the below page will open.



Washer Extractor Parameters

2) Number - the number assigned to the washer extractor.

3) Name – name of the washer extractor i.e. Girbau

(continued)

# 3.00 programming (continued)

## 3.06 Washer Extractor Parameters (continued)

### 4) Properties:

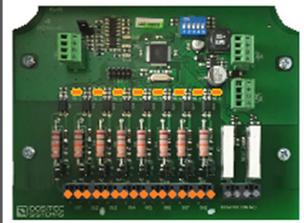
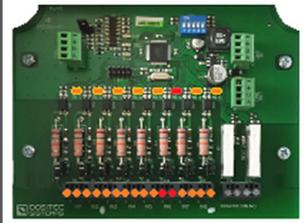
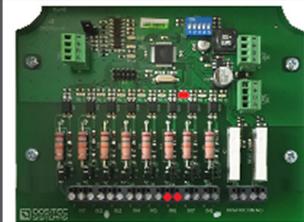
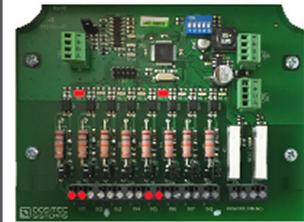
- Kg – Enter the wash capacity of the machine in Kg.
- Kg sel – yes or no, this is dependent on whether you have installed a selector to manually change the % wash weight on the unit.
- Flush L – the amount of water in litres required to deliver the chemicals to the washer extractor inlet by means of water flush.

### 5) Signal times:

- Acceptance – Length of time in seconds required for the machine to accept a signals.
- Non repetition – time in seconds that the unit will not accept a further signal after the prior signal within that particular wash stage.
- Lock after end – only on formula selector mode. Time duration after whole dosing process that the unit will accept no further signals.

### 6) Washing process:

- Formula ID – mode in which the identification of a new washing process is determined, how the machine triggers the unit to auto select a formula, see below:

	<p><b>Pairs of signals</b></p> <p>Whenever a couple of signals is detected simultaneously, a new process begins. The formula number is determined by the combination of the signals:</p> <table border="0"> <tr> <td>Fr.1 = S1 + S2</td> <td>Fr.6 = S2 + S3</td> <td>Fr.11 = S3 + S5</td> </tr> <tr> <td>Fr.2 = S1 + S3</td> <td>Fr.7 = S2 + S4</td> <td>Fr.12 = S3 + S6</td> </tr> <tr> <td>Fr.3 = S1 + S4</td> <td>Fr.8 = S2 + S5</td> <td>Fr.13 = S4 + S5</td> </tr> <tr> <td>Fr.4 = S1 + S5</td> <td>Fr.9 = S2 + S6</td> <td>Fr.14 = S4 + S6</td> </tr> <tr> <td>Fr.5 = S1 + S6</td> <td>Fr.10 = S3 + S4</td> <td>Fr.15 = S5 + S6</td> </tr> </table> <p><i>See manual for more combinations</i></p>	Fr.1 = S1 + S2	Fr.6 = S2 + S3	Fr.11 = S3 + S5	Fr.2 = S1 + S3	Fr.7 = S2 + S4	Fr.12 = S3 + S6	Fr.3 = S1 + S4	Fr.8 = S2 + S5	Fr.13 = S4 + S5	Fr.4 = S1 + S5	Fr.9 = S2 + S6	Fr.14 = S4 + S6	Fr.5 = S1 + S6	Fr.10 = S3 + S4	Fr.15 = S5 + S6			
Fr.1 = S1 + S2	Fr.6 = S2 + S3	Fr.11 = S3 + S5																	
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Fr.4 = S1 + S5	Fr.9 = S2 + S6	Fr.14 = S4 + S6																	
Fr.5 = S1 + S6	Fr.10 = S3 + S4	Fr.15 = S5 + S6																	
	<p><b>Signal = Formula</b></p> <p>Whenever signal 6 is detected a new process begins. The following signal to be received will determine the formula number (as long as it is different from 6). When one of these signals arrives for the second time, the unit will proceed with the corresponding dosage. In case all the signals are available in the machine, the maximum number of formulas is 7.</p>																		
	<p><b>Time signal 6</b></p> <p>Every time signal 6 is detected, a new cycle will begin. The formula number corresponds to the time that signal 6 remains enabled in multiples of 5:</p> <table border="0"> <tr> <td>Form. 1 = 5 s</td> <td>Form. 6 = 30 s</td> <td>Form. 11 = 55 s</td> </tr> <tr> <td>Form. 2 = 10 s</td> <td>Form. 7 = 35 s</td> <td>Form. 12 = 60 s</td> </tr> <tr> <td>Form. 3 = 15 s</td> <td>Form. 8 = 40 s</td> <td>Form. 13 = 65 s</td> </tr> <tr> <td>Form. 4 = 20 s</td> <td>Form. 9 = 45 s</td> <td>Form. 14 = 70 s</td> </tr> <tr> <td>Form. 5 = 25 s</td> <td>Form. 10 = 50 s</td> <td>Etc...</td> </tr> </table>	Form. 1 = 5 s	Form. 6 = 30 s	Form. 11 = 55 s	Form. 2 = 10 s	Form. 7 = 35 s	Form. 12 = 60 s	Form. 3 = 15 s	Form. 8 = 40 s	Form. 13 = 65 s	Form. 4 = 20 s	Form. 9 = 45 s	Form. 14 = 70 s	Form. 5 = 25 s	Form. 10 = 50 s	Etc...			
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Form. 5 = 25 s	Form. 10 = 50 s	Etc...																	
	<p><b>Time signals 1+5</b></p> <p>Every time signals 1 and 5 are detected simultaneously, a new cycle will begin. The formula number is obtained according to the time that signals 1 and 5 remain ON:</p> <table border="0"> <thead> <tr> <th>Formulas 1 to 9</th> <th>Formulas 11 to 19</th> <th>Formulas 21 to 29</th> </tr> </thead> <tbody> <tr> <td>Fr.1 = 10s + 5s</td> <td>Fr.11 = 15s + 5s</td> <td>Fr. 21 = 20s + 5s</td> </tr> <tr> <td>Fr.2 = 10s + 10s</td> <td>Fr.12 = 15s + 10s</td> <td>Fr. 22 = 20s + 10s</td> </tr> <tr> <td>Fr.3 = 10s + 15s</td> <td>Fr.13 = 15s + 15s</td> <td>Fr. 23 = 20s + 15s</td> </tr> <tr> <td>Fr.4 = 10s + 20s</td> <td>Fr.14 = 15s + 20s</td> <td>Fr. 24 = 20s + 20s</td> </tr> <tr> <td>Fr.9 = 10s + 45s</td> <td>Fr.19 = 15s + 45s</td> <td>Etc...</td> </tr> </tbody> </table> <p><i>Formulas 10,20,30... are forbidden</i></p>	Formulas 1 to 9	Formulas 11 to 19	Formulas 21 to 29	Fr.1 = 10s + 5s	Fr.11 = 15s + 5s	Fr. 21 = 20s + 5s	Fr.2 = 10s + 10s	Fr.12 = 15s + 10s	Fr. 22 = 20s + 10s	Fr.3 = 10s + 15s	Fr.13 = 15s + 15s	Fr. 23 = 20s + 15s	Fr.4 = 10s + 20s	Fr.14 = 15s + 20s	Fr. 24 = 20s + 20s	Fr.9 = 10s + 45s	Fr.19 = 15s + 45s	Etc...
Formulas 1 to 9	Formulas 11 to 19	Formulas 21 to 29																	
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Fr.4 = 10s + 20s	Fr.14 = 15s + 20s	Fr. 24 = 20s + 20s																	
Fr.9 = 10s + 45s	Fr.19 = 15s + 45s	Etc...																	

(continued)

# 3.00 programming (continued)

## 3.06 Washer Extractor Parameters (continued)

6) Washing process: (continued)



**Binary**

Every time signal 6 is detected along with any combination of the others, the unit will begin a new cycle. The Formula number is determined by the binary value of the combination of signals:

Fr.1 = S6 + S1	Fr.6 = S6 + S3 + S2
Fr.2 = S6 + S2	Fr.7 = S6 + S3 + S2 + S1
Fr.3 = S6 + S2 + S1	Fr.8 = S6 + S4
Fr.4 = S6 + S3	Fr.9 = S6 + S4 + S1
Fr.5 = S6 + S3 + S1	Fr.10 = S6 + S4 + S2

*See manual for more combinations*

**Formula selector**

The selection of the formula is done manually by using a selector. Use this option when the machine does not allow to control its signals. Remember to identify the selector with the same machine number as the board where it is connected



7) Trigger mode – Sequential, Signal + 1st Phase, sequential + 1st phase or signal + repetition.

8) Finish mode – signal or pump. Choose whether you want the unit to end the program via a pump or signal (signal number, i.e. final rinse, door lock etc).

9) Default formula after finish – choose a formula number for the unit to reset to after finish (0 will create the unit to not select a formula).

10) Hold machine

- Activation – choose from Not used if no machine hold is present, while queued (whilst waiting for dosage) or while queued/ during dosage.
- Delay – the Time the unit waits before activating the hold order. Commonly used to let the washer extractor gain some level of water.
- Timeout – max amount of time before the delay times out.

11) Click on Save at the bottom of the page.

## 3.07 Formulas

1) Click on Formulas in the left-hand column, the page shown at the top of the next page will open.

2) Formulas

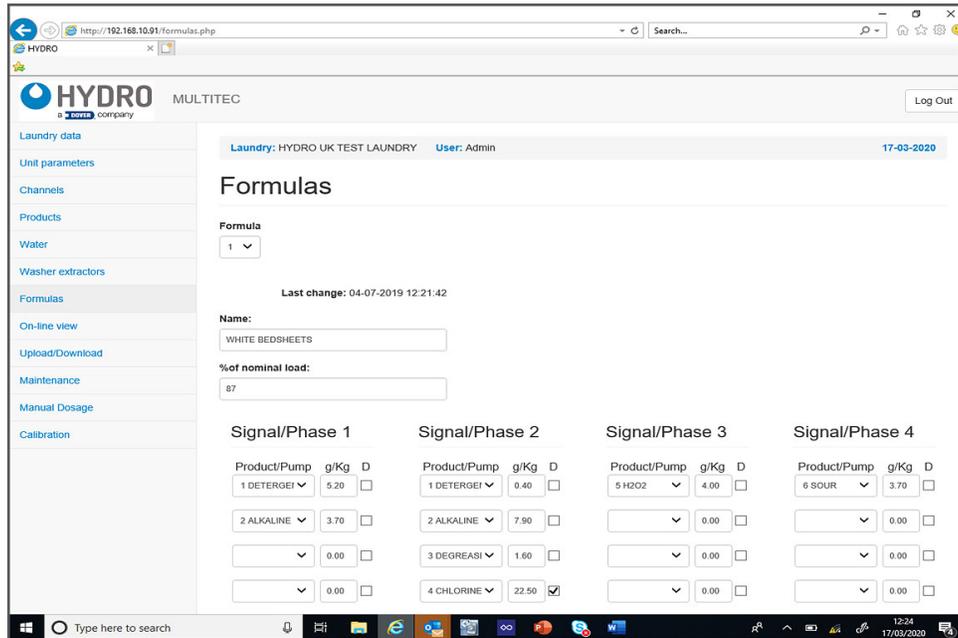
- Formula – the number of the formula you want to program.
- Last change – this shows the date the formula was last edited.
- Name – the name of formula i.e. white bedsheets.
- % of nominal load - % of load the unit will dispense chemical for.

3) Signal/phase

- Product/pump - enter the product i.e. detergent.
- g/kg – enter the amount you wish you dispense in grams per kilogram.
- D – tick this box to add a delay.
- Delay 1 – the time in which the whole phase is on hold before dosing any products (commonly used to allow the machine to achieve a water level in the drum when the signal is activated from a fill valve).
- Delay 2 – takes place after delay 1 has expired and will only be applied to products that have been activated with a tick. The full sequence of leak test, water test, etc, will be applied before any dosing is achieved, even if a 1 second delay is set.

# 3.00 programming (continued)

## 3.07 Formulas (continued)

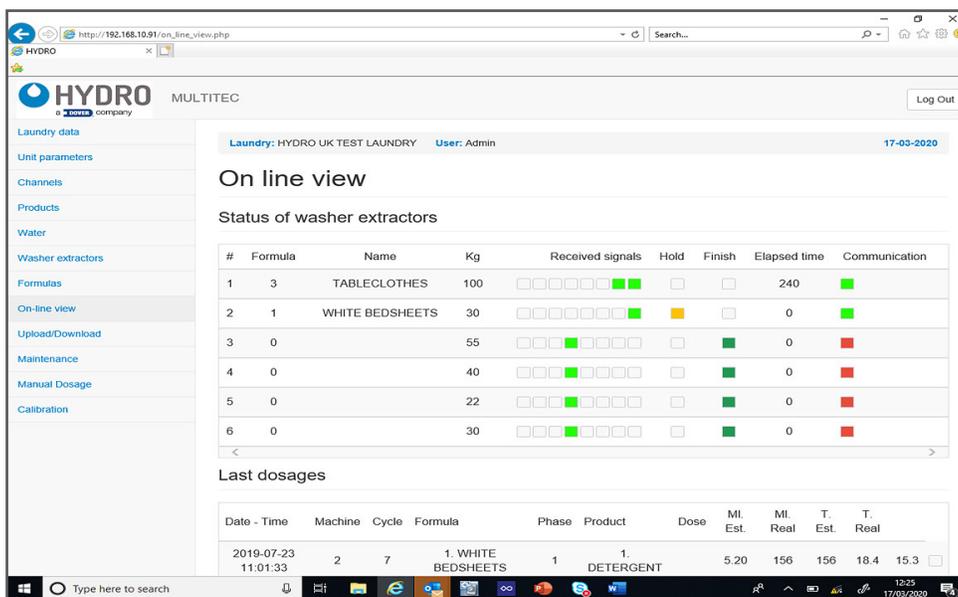


Formula Settings

- 4) Repeat the above steps for each signal/phase that chemical is to be added.
- 5) Click on Save at the bottom of the page.

## 3.08 On-line View

- 1) Click on On-line View in the left-hand column, the page shown below will open.



On-line View

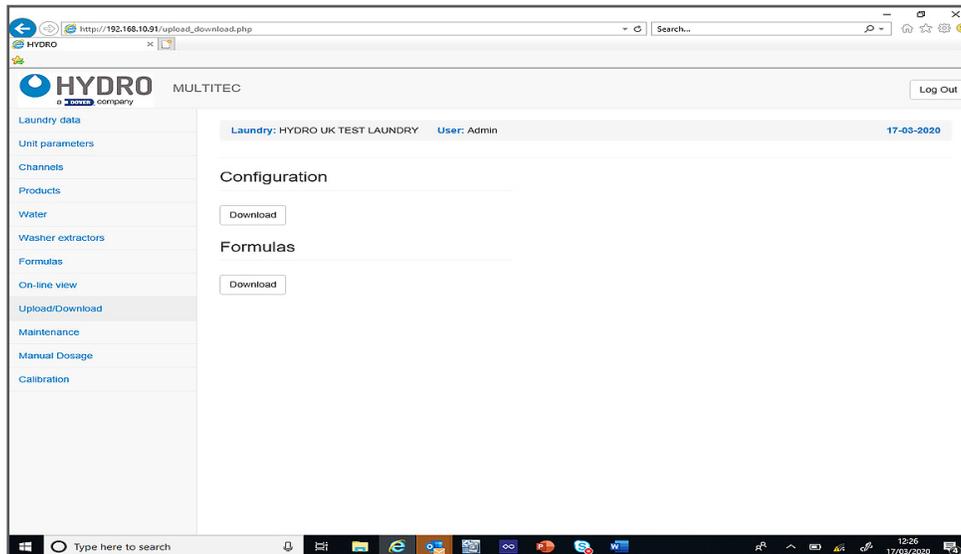
- 2) From the windows displayed in the on-line view you will be able to see the status of the machines, which programs are running and what signals have been received.

You will also be able to see if the machines are on hold, the amount of chemical dosed, downtime and if alarms have been received.

# 3.00 programming (continued)

## 3.09 Upload/Download

1) Click on Upload/Download in the left-hand column, the below page will open.



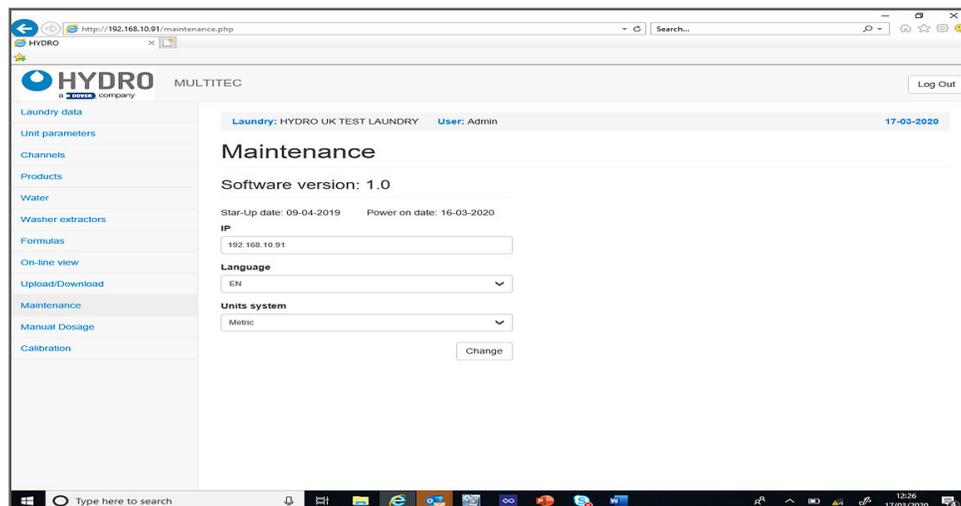
Upload/Download

2) From this screen you can upload the settings you have entered within the MT6 program on your computer/tablet etc or download from the unit.

3) Click on Save at the bottom of the page.

## 3.10 Maintenance

1) Click on Maintenance in the left-hand column, the below page will open.



Maintenance Settings

2) IP – Not used (This setting is only used with the Hydro Connect Real-Time Modules [aka RTMs].)

3) Language – the language you require the unit to display.

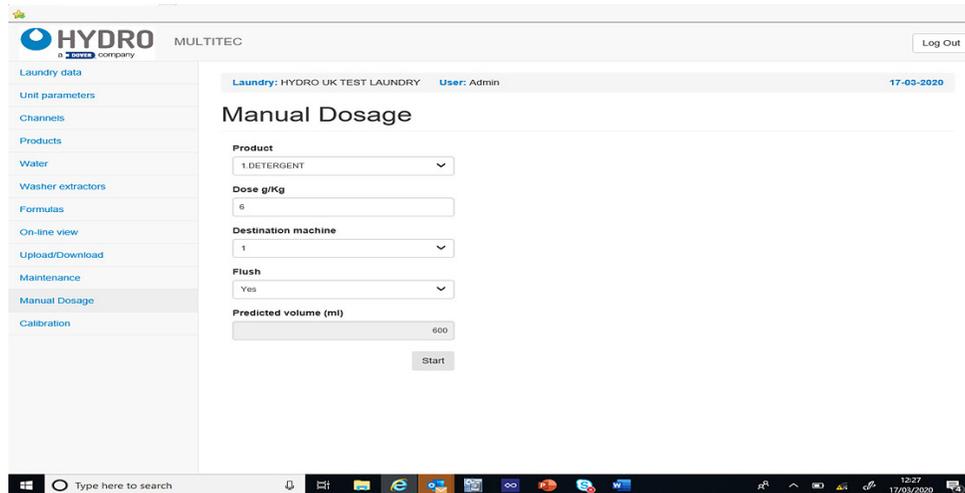
4) Units system – choose between Metric (EMEA) or US (Americas)

5) Click on Save at the bottom of the page.

# 3.00 programming (continued)

## 3.11 Manual Dosage

1) Click on Manual Dosage in the left-hand column, the below page will open.



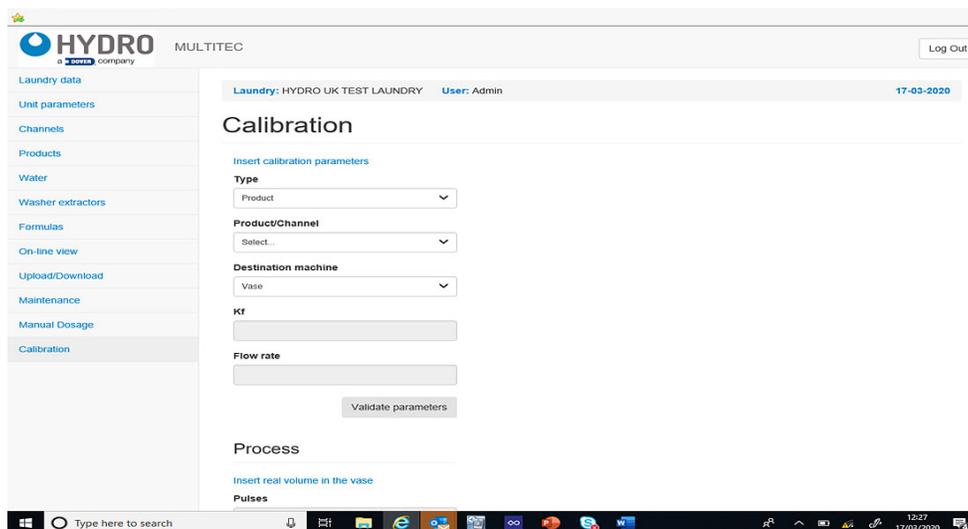
Manual Dosage Settings

2) From this page you can enter the desired product, dosage, machine and whether you want flush to create a manual dosage.

3) Clicking on Start will begin the dosage.

## 3.12 Calibration

1) Click on Calibration in the left-hand column, the below page will open.



Calibration Settings

2) Type – choose whether you want to calibrate a product or water.

3) Product/channel – select the product you want to calibrate or the channel for water.

4) Destination machine – choose which machine you want to calibrate to at the point of inlet. Although currently you must choose a washer extractor, a 3-way valve can be installed to make the physical calibration easier. (Note: Calibration Vase is an option to be available in the future.)

5) Click on validate parameters to obtain Kf value and Flow rate. (**CAUTION!** ALWAYS press “Validate Parameters” before pressing the calibration button, even if you want to re-calibrate after having cleaned the channel, without entered a real volume.)

6) Insert real obtained volume and save.

# 4.00 operation

## 4.01 Start-Up

After having installed the unit, carry out the start-up by following the steps below.

### Previous requirement and unit configuration

Make sure that the laundry is created in Hydro Connect and the equipment is registered in it. In this way the obtaining of statistical data will be enabled. Start the equipment through the side switch. The service pilot lamp should light up.

### Equipment without Internet connection

It will be necessary to have downloaded Hydro Connect users, configuration and formulas files. Connect to the Wi-Fi network of the device identified as MULTITEC\_3\_xxxxx. You will find it on the side label of the team. Access the Web Server and transfer the files. (See Web Server manual for more details.)

### Equipment with Internet connection

In this case, the previous transfer of files is not necessary. After about 5 minutes from power-up, the equipment will download the necessary information for its configuration. Connect to the Wi-Fi network of the device identified as MULTITEC\_3\_xxxxx. You will find it on the side label of the team. Access the Web Server. See Web Server manual for more details.)

## 4.02 Prime Product Delivery Tubes

All the outlet pipes must be filled with water. To do this you can access the calibration screen and select 'Water' at the calibration mode. After checking that there are no leaks, you can continue with the start-up.

### Prime the suction tubes of each product

You have to fill each tube that goes from the suction rod to the pumps using the calibration screen as in the previous step. In this case, you will select 'Product' as the calibration mode. After priming each tube, the channel must be cleaned. It is important to take into account the chemical incompatibilities when choosing the order of the products to be primed.

## 4.03 Calibrate the products

You must keep 'Product' on the calibration screen. As in the previous step, you will select each product and press the calibration button sending the dosage to a washing machine. After the acquisition of the sample, you have to insert the volume dispensed in milliliters on the screen.

## 4.04 Calibrate the water.

The water must be calibrated to the furthest washing machine.

## 4.05 Check the dosage

To be sure that the meter works correctly, you can perform manual dosages and take a sample. The amount obtained must be the same as the estimated amount that appears on the screen.

The manual dosages have to be done without the flush, which involves doing a channel cleaning.

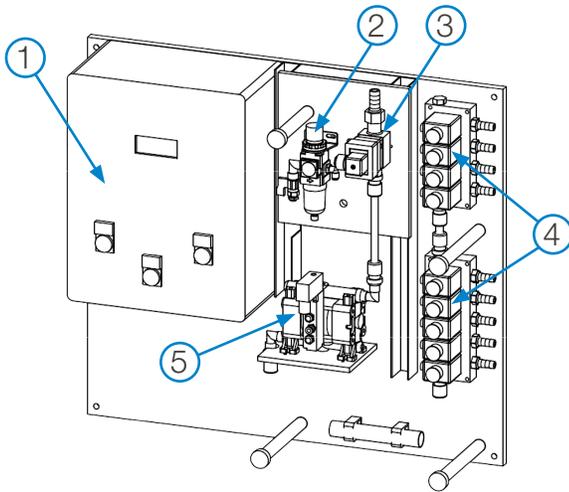
## 4.06 Adjust the flush of each washing machine

The user has to execute manual dosages to each washing machine. It is advisable to choose a product with a visible color. Looking at the entrance of the washing machine, you can know if the configured flush is enough to send the product inside. If you want to modify the water flush, you can go to the washing machine configuration screen to do it.

## 4.07 Start each washing machine and check signals

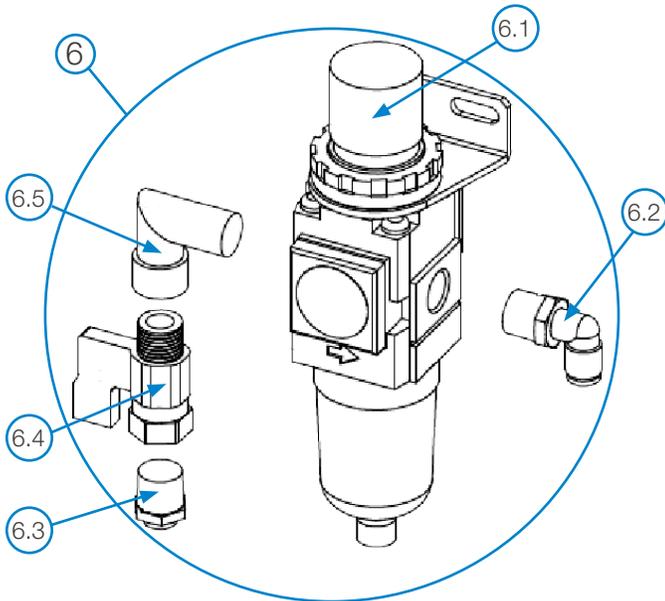
If the signals of the washing machines are connected correctly, you will activate them one by one to verify the signal reception. The formula number and the corresponding phases must be seen on the 'View washing machines' screen.

# 5.00 service parts



## General Orientation

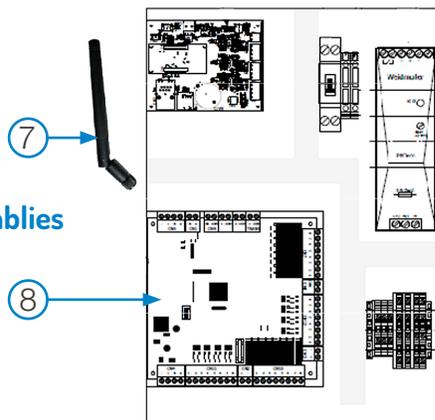
Key	Description
1	PCB Control Cabinet
2	Air Pressure Regulator (Pneumatic Pump Units Only)
3	Flow Meter
4	Electronic Valves
5	Pneumatic or Electromagnetic Pump



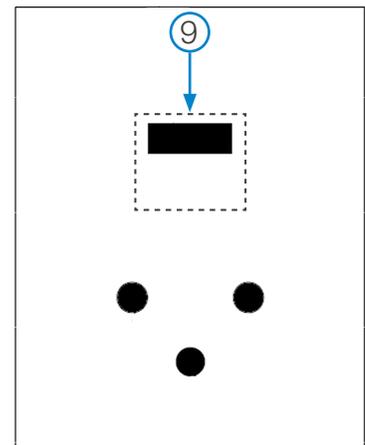
## Air Pressure Regulator (Pneumatic Pump Units Only)

Key	Part No.	Description
6	HYD4810ACQ2W063	Assembly, Air Pressure Regulator
6.1	HYD48101662722	Regulator/Filter/Gauge, 1/4", manual purge
6.2	HYD48101120622	Elbow Air Fitting 1/4 "T6
6.3	HYD4810KQ2H0602AS	Straight connector for air 1/4"-T6
6.4	HYD2953216559	Ball valve 3097 MH 1/4"
6.5	HYD4810221414U	Conic brass elbow M/F 1/4"

## Cabinet Assemblies



## Inside



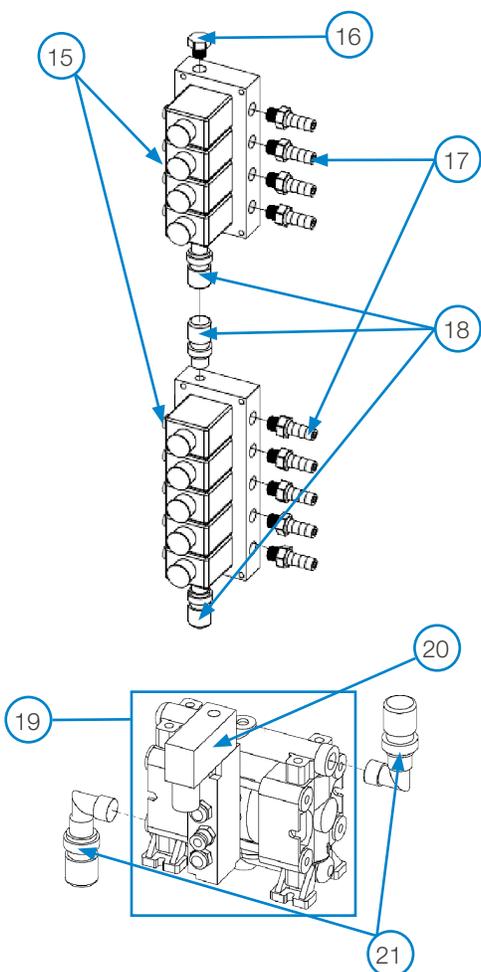
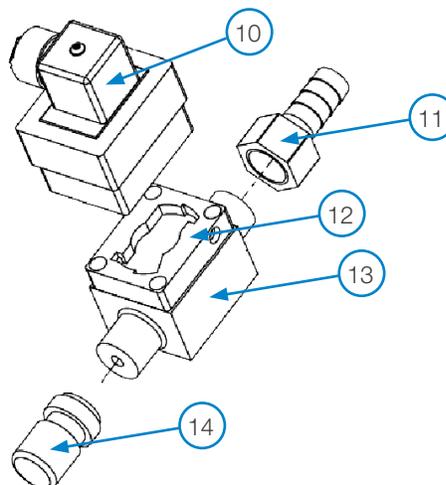
## Outside

Key	Part No.	Description
7	HYD2721ANT001	Wi-Fi external antenna 2.4 GHz with cable, SMA RP Female B/H
8	HYD1161M6P1EV	I/O Board for Laundrytec Micro Controller
9	HYD1161M6P1DV	Display Board for Laundrytec Micro Controller (inside cabinet door)

# 5.00 service parts (continued)

## Flow Meter

Key	Part No.	Description
10	HYD021713020002	Flow meter 8030, 24VDC, PNP
11	HYD54808400299	PVDF, Output Hose Barb, 1/2"
12	HYD02171432300	PP Turbine + FPM joints for S030 flux sensor
13	HYD0217297301490	Flow Meter Fitting PP + Turbine
14	HYD1318100FG4812PP	Straight connector, S1A PP, T10/12 G1/2" H



## Electronic Valve Blocks

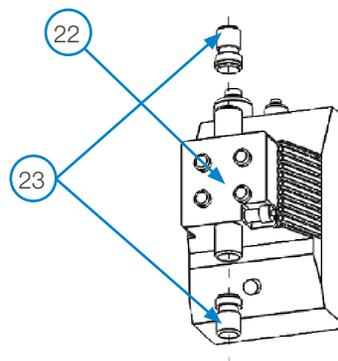
Key	Part No.	Description
15	HYD0217297301140	3-Valve Block, Ev Type 124, PP (not shown)
	HYD0217297301141	4-Valve Block, Ev Type 124, PP
	HYD0217297301142	5-Valve Block, Ev Type 124, PP
16	HYD54818400238	PVDF cap, 3/8" with VITON O-Ring
17	HYD54818400298	PVDF Barb Fitting 3/8"xT13 w/ O-Ring
18	HYD1318MG4838PP	Straight connector, S1A PP, T10/12 G3/8" M

## Pneumatic Pump

Key	Part No.	Description
19	HYD111310P7	Duotek Pneumatic pump AF 0007, 1/4"G
20	HYD4810SS5Y5Q2W514	5-way air control valve for Duotek pump
21	HYD1318G4814PP	Elbow fitting, PP, G1/4 M, 10x12

## Electromagnetic Pump

Key	Part No.	Description
22	HYD60121ATBX4RJ	BX ATHENA 4 Electromagnetic Pump, Red, 0.25 GPM
23	HYD1318FG4834PP	Straight connector PP G3/4 F T10/12



## 6.00 warranty

### 6.01 Limited Warranty

**Seller** warrants solely to **Buyer** the Products will be free from defects in material and workmanship under normal use and service for a period of one year from the date of completion of manufacture. This limited warranty does not apply to (a) hoses; (b) and products that have a normal life shorter than one year; or (c) failure in performance or damage caused by chemicals, abrasive materials, corrosion, lightning, improper voltage supply, physical abuse, mishandling or misapplication. In the event the Products are altered or repaired by **Buyer** without **Seller's** prior written approval, all warranties will be void.

**No other warranty, oral, express or implied, including any warranty of merchantability or fitness for any particular purpose, is made for these products, and all other warranties are hereby expressly excluded.**

**Seller's** sole obligation under this warranty will be, at **Seller's** option, to repair or replace F.O.B. **Seller's** facility in Cincinnati, Ohio any Products found to be other than as warranted.

### 6.02 Limitation of Liability

**Seller's** warranty obligations and **Buyer's** remedies are solely and exclusively as stated herein. **Seller** shall have no other liability, direct or indirect, of any kind, including liability for special, incidental, or consequential damages or for any other claims for damage or loss resulting from any cause whatsoever, whether based on negligence, strict liability, breach of contract or breach of warranty.



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