



Footbath User Manual v61.3

Contents

Section 1: Introduction	2
Section 2: Control Box	3
Section 3: Display Controls	4
Section 4: Display Setup	5
Section 5: Calibration of the Chemical Pumps	9
Section 6: Dry Mode	10
Section 7: Temperature Purging (Optional)	11
Section 8: Service & Maintenance	12

Safety

Moving Parts



The Footbath has automated moving parts.

Please take care when working around the door section of the Footbath.

Chemicals

	Warning Dangerous chemicals in use
	Use personal protective equipment when using these chemicals
	Clean skin properly should contact occur

Most chemicals used alongside the Footbath are hazardous and corrosive. Follow safe working procedures and use necessary PPE equipment when handling chemicals or working with the Chemical Pumps on the Hoofcount Control Box.

The chemical and chemical rates used within the footbath are to be used at the users own risk.

Frequent overuse of chemical can cause burning to cows feet. Formaldehyde is a regularly used product but can cause burns and sores with overuse.

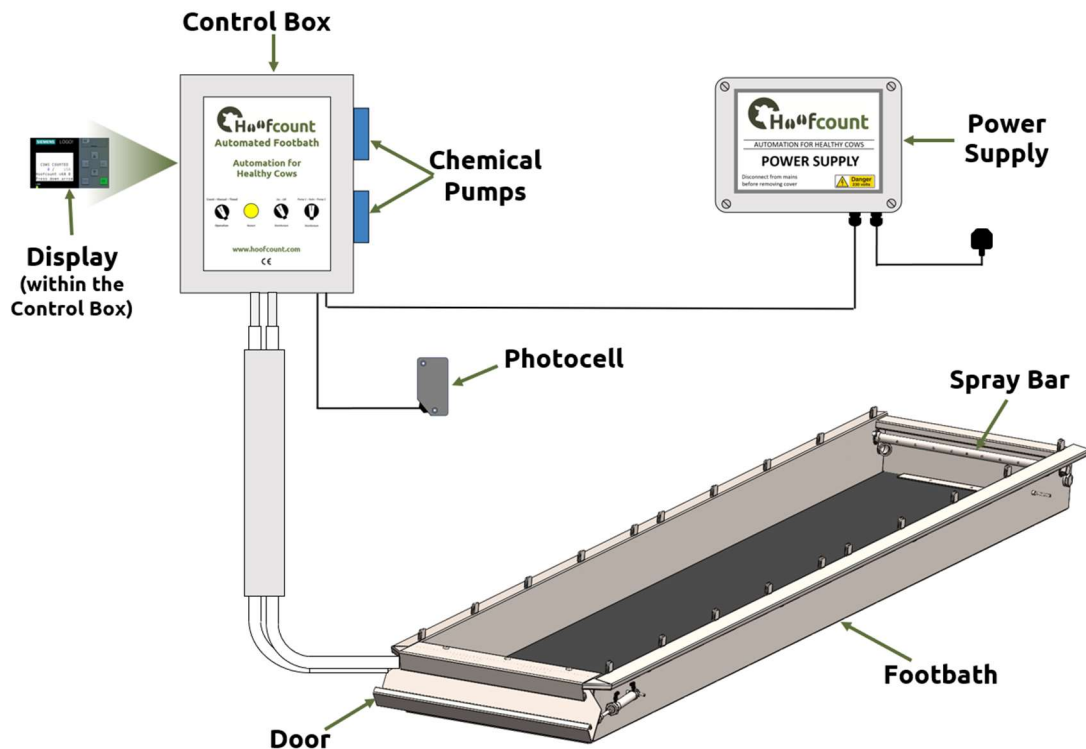
NEVER USE FORMALDEHYDE AT GREATER THAN 3% without veterinary advice on frequent footbathing.

Electrical

The Control Box is low voltage (24V DC) so is safe to work on when switched on. Switch off power and remove plug when removing the cover on the Power Supply.

Section 1: Introduction

The Hoofcount automatic Footbath is an aid in the control of lameness issues within dairy herds. For a Footbath to be effective it must be used regularly and alongside routine foot trimming and regular mobility scoring. The Footbath ensures EVERY cow receives the BEST preventative care.



The Footbath achieves this using the following reset cycle which is initiated after either:

- the preset number of cows pass (counted by the Photocell)
- the yellow reset button has been pressed
- at preset times in the day

Reset Cycle

1. **Door opens** – to drain the Footbath of soiled solution.
2. **Footbath washes** – water from the rotating Spray Bar washes the Footbath out. The Spray Bar's rotational speed can be adjusted by the two restrictors in the Control Box.
3. **Door closes** – time adjustable.
4. **Footbath fills** – the Footbath starts to fill with water, then disinfectant is pumped into the Footbath. If the disinfectant continues to fill after the water stops, water flushes the disinfectant line out for a preset boost time.
5. **Disinfect cows feet** - as cows pass through the Footbath they are counted by the Photocell.
6. **Cycle repeats** - after either the preset number of cows pass, pressing the yellow reset button, or at set times in the day.

Section 2: Control Box

Side Panel

Switch

ON - Turns the power to the Control Box on for normal operation.

OFF - Turns power off to the Control Box.

Door open – Opens Door without power to the rest of the Control Box.

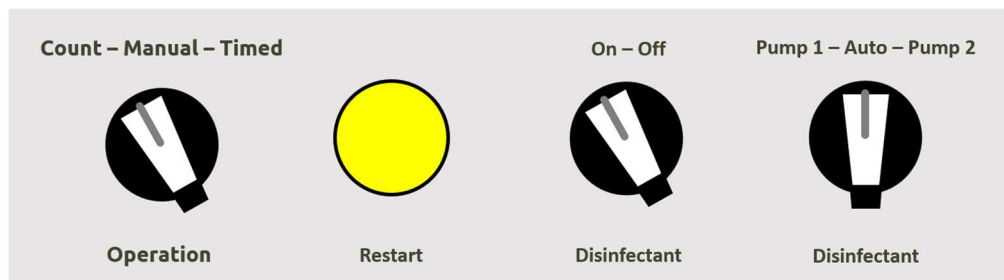
Blue button

When the temperature is likely to drop below 0°C, turn off the water and press the blue button to drain the system.

Turn the Switch OFF to prevent chemical from being pumped.



Front Panel



Operation Switch

Count – The Footbath will reset after the preset number of cows pass, counted by the Photocell. The Photocell should have a green light on all the time and a red light should be seen when a cow passes. A cow will only be counted after the red light is on for a constant 0.8 seconds.

Manual – The Footbath will not reset itself unless the yellow reset is pressed.

Timed – The Footbath will reset at set times in the day (see Section 4: Display Controls).

Restart Button

Press - Perform the reset cycle. If Dry Mode is active it will not refill.

Press and hold for 5 seconds - The Footbath will empty, rinse and not refill.

*The Footbath will not reset within 10 minutes of the last restart.

*Turns Red if there is a warning e.g. Service Due, Sensor Blocked.

Disinfectant Switch 1

On - The chemical used during the cycle is determined by Disinfectant Switch 2.

Off - No chemical is used, Disinfectant Switch 2 is ignored.

Disinfectant Switch 2

Pump 1 / Pump 2 - the Chemical Pump can be selected from Pump 1 (top), Pump 2 (bottom).

Auto – a Chemical Pump will be selected from the settings on the Display.

Section 3: Display Controls

Navigation

Press   to navigate through the setting pages.

Changing Settings

Press   to navigate through the setting pages.

Hold  for 3 seconds to change a setting on that page.

Use     to navigate to values that need changing.

Once on the value press .

Use     to edit values as required.

Once the desired setting is reached press .

To cancel at any time press .



Converting Units

Navigate to the Clock page (hold ) and press .

Use  to navigate to 'Program' and select by pressing .

Select 'Parameter' by pressing .

Use  to navigate to 'Imperial?' and select by pressing .

Press  and then  to change Off to On.

To confirm, press .

Now lengths will be in inches, volumes in fl/oz and gallons, and temperatures in °F.

The metric values will remain and will need to be updated, the defaults convert to:

	Metric	Imperial
Length	360cm	144in
Width	61cm	24in
Fill Level	10cm	4in
Calibration	800ml	27fl/oz

Section 4: Display Setup

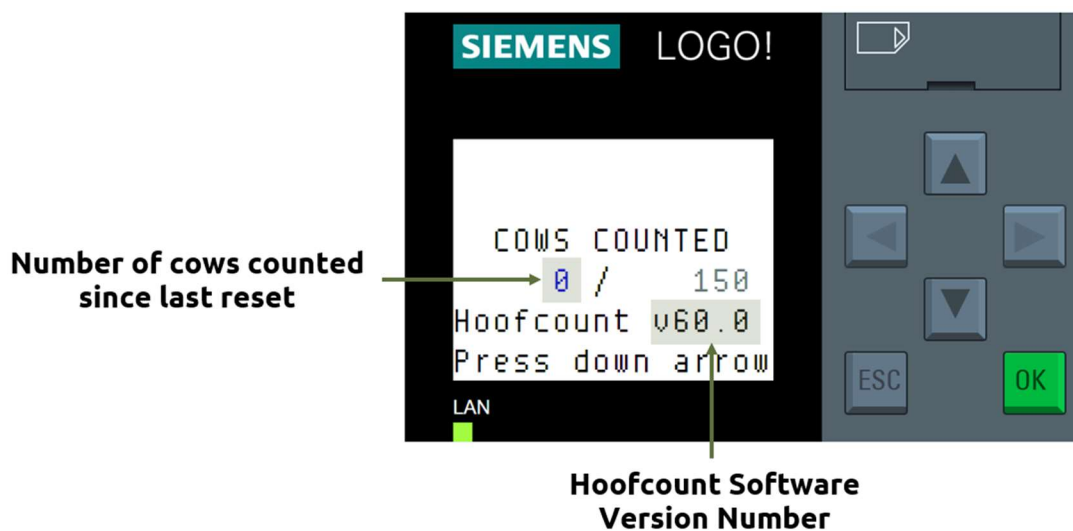
Initial Setup

Set the correct time and date, otherwise the Footbath will not operate and the menus will not be shown.



Note: The time and date are lost if the power is switched off for longer than two weeks. They will need to be set again before the footbath operates again. We recommend the power is maintained to keep the controller warm and avoid moisture causing early failure.

Home Page



Settings

	Settings	Default	Description	Set to
1	Cow Count	150	The number of cows through the Footbath before it resets.	
	Flap open	65	The length of time the Door remains open in the reset cycle (seconds).	
	Flush time	60	The duration the Spray Bar washes the Footbath out for (seconds).	
	Fill time	110	The length of time the Footbath fills for (seconds).	
	Boost time	5	The time the post chemical flush operates for (seconds).	
2	Wave Time	6 ON 6 OFF	The time the Spray Bar rotates up (ON) and down (OFF) for, during the reset cycle (seconds).	
	Purge Time	20	Time air purge is active when the blue button is pressed (seconds) (with optional air purge kit).	
	Dry Mode	Off	If a chemical is not set at the time and day when the Footbath resets, it will not fill.	
	Dry Count	300	The number of cows through the Footbath before it resets when in Dry Mode.	
	Auto Purge	Off	Auto air purge at the end of cycle for duration of Purge Time.	
3	Length	360	Internal length of the Footbath.	
	Width	61	Internal width of the Footbath.	
	Fill Level	10	Depth of the water halfway down the Footbath.	
4	Pump 1 %	1.5%	Concentration of solution created from Pump 1's chemical.	
	Calibration	800	Volume of chemical from Pump 1 in 30s.	
5	Pump 2 %	2.5%	Concentration of solution created from Pump 2's chemical.	
	Calibration	800	Volume of chemical from Pump 2 in 30s.	

6	Time 1 Time 2 Time 3	MTWTFSS ----- -----	Days chemical 1 is selected, rows (1, 2, 3) relating to each time setting from the Chem Times Page (7).	
7	ON OFF 1 2 3	00:00 23:59 --:-- --:-- --:-- --:--	Time chemical 1 is selected, rows (1, 2, 3) relating to each set of days from the Chem Times Page (6).	
8	Time 1 Time 2 Time 3	----- ----- -----	Days chemical 2 is selected, rows (1, 2, 3) relating to each time setting from the Chem Times Page (9).	
	Cow Count	0	Alternative cow count when chemical 2 is in use, when zero; main cow count is used.	
9	ON OFF 1 2 3	00:00 23:59 --:-- --:-- --:-- --:--	Time chemical 2 is selected, rows (1, 2, 3) relating to each set of days from the Chem Times Page (8).	
10	Day Time	MTWTFSS 06:00 MTWTFSS 14:00 MTWTFSS 22:00	Days and times when the Footbath will reset if set to Timed (by the Operation Switch) or Timed+Count.	
	Timed & Count	Off	Footbath will reset at the Reset Time above as well as when the cow count is reached (Operation Switch must be set to Count).	
	Purge Temp	Off	Automatically purges depending on the temperature.	
	On	4	Temperature below which the system will purge.	
	Off	6	Temperature above which the system will not purge.	

Display Settings Pages

1. Setup Page 1

```
01 SETUP PAGE 1
Cow Count    150
Flap Open    01:05m
Flush Time   00:50m
Fill Time    00:50m
Boost Time   00:05m
```

2. Setup Page 2

```
02 SETUP PAGE 2
Wave Time    00:06m
Purge Time   00:20m
DryMode       Off
Dry Count     300
Auto Purge    Off
```

3. Bath Size

```
03 BATH SIZE
Length       370cm
Width        60cm
Fill Level:   10cm
Litres =     222
```

4. Chem Pump 1

```
04 CHEM PUMP 1
Pump1 %      1.5
To run 30s test
Calibration:
  ml/30s      800
Seconds =     123
```

5. Chem Pump 2

```
05 CHEM PUMP 2
Pump2 %      1.5
To run 30s test
Calibration:
  ml/30s      800
Seconds =     123
```

6. Chem 1 Days

```
06 CHEM 1 DAYS
Time 1       M-W-F-S
Time 2       -----
Time 3       -----
```

7. Chem 1 Times

```
07 CHEM 1 TIMES
ON           OFF
1 00:00     23:59
2 --:--     --:--
3 --:--     --:--
```

8. Chem 2 Days

```
08 CHEM 2 DAYS
Time 1       -T-T-S-
Time 2       -----
Time 3       -----
Cow count     0
```

9. Chem 2 Times

```
09 CHEM 2 TIMES
ON           OFF
1 00:00     23:59
2 --:--     --:--
3 --:--     --:--
```

10. Reset Times 1

```
10 RESET TIMES 1
Day          Time
MTWTFSS     06:00
MTWTFSS     14:00
MTWTFSS     22:00
Timed&count Off
```

10. Reset Times 2

```
10 RESET TIMES 2
Day          Time
MTWTFSS     --:--
MTWTFSS     --:--
MTWTFSS     --:--
```

13. Auto Purge *Optional Extra

```
13 AUTO PURGE
Purge temp   Off
On           4c
Off          6c
Temp         26c
```

*Auto purge is turned on from page 2

Diagnostics

When diagnosing issues it can be particularly useful to see the status of the inputs and outputs of the controller. Press the down button until you reach the clock page, press the Right button to see the inputs page (I:) and again to see the outputs page (Q:). You can see which input or output is on as the correlating number is highlighted (example image 3 below). The first row is numbered 1 to 9, the second row is prefixed with "10+" (resulting in inputs 10 to 19), and the third row is prefixed with "20+" (resulting in inputs 20 onwards).

I: Inputs

I:	1/9
	123456789
10+	0123456789
20+	01234

Q: Outputs

Q:	2/9
	123456789
10+	0123456789
20+	0

Q: Outputs (1 Highlighted)

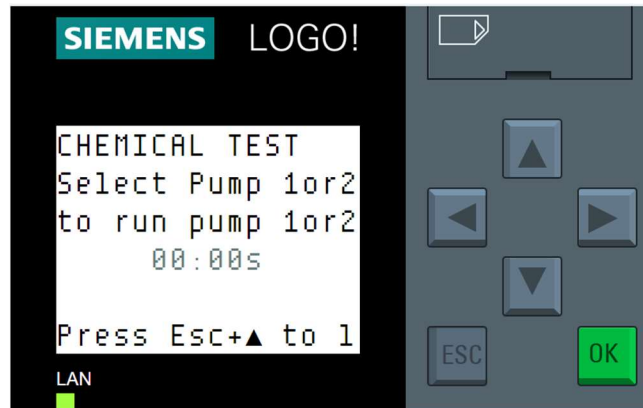
Q:	2/9
	123456789
10+	0123456789
20+	0

Inputs: 1 Cow Counter, 2 Reset Button, 3 Auto/Count/Manual Switch, 4 Pump 1 Switch, 5 Pump 2 Switch, 6 Purge Button, 7 Disinfectant On/Off Switch, 8 Reset Bath 1, 9 Cow Linger Sensor, 10 Fill Flow Sensor, 11 Reset Bath 2, 12 Count Bath 2, 13 Reset Bath 3, 14 Count Bath 3, 15 Reset Bath 4, 16 Count Bath 4, 17 Reset Bath 5, 18 Count Bath 6

Outputs: 1 Flap, 2 Water Flush, 3 Water Fill, 4 Pump 1, 5 Pump 2, 6 Spraybar, 7 Warning Light/AirPurge/Linger, 8 Waterpump, 9 Neutral Bath 1, 10 Neutral Bath 2, 11 Neutral Bath 3, 12 Neutral Bath 4, 13 Neutral Bath 5

Section 5: Calibration of the Chemical Pumps

***Take care and wear appropriate PPE when handling hazardous chemicals**



Place a measuring jug under the outlet pipe of the required pump.

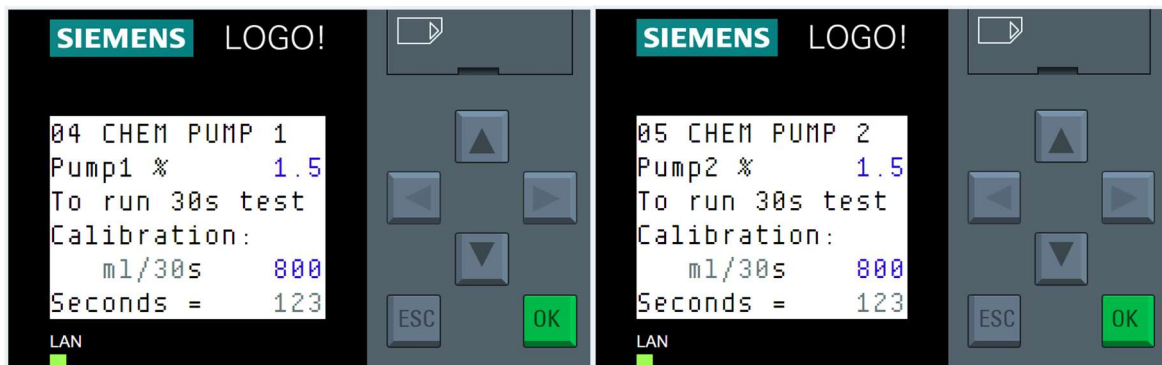
Set the Disinfectant Switch 1 on the front of the Control Box to the On position.

On any page, hold  and press  to go to the calibration page.

Set the Disinfectant Switch 2 on the front of the Control Box to the pump you are calibrating, the disinfectant will pump for 30 seconds.

Note down the volume dispensed and enter this value in the ml/30s section on the CHEM PUMP Page.

Hold  and press  to exit the calibration screen.



***Ensure the correct Footbath size and units are entered on 03 BATH SIZE so the Footbath volume is shown at the bottom in Litres.**



The chemical and chemical rates used within the footbath are to be used at the users own risk.

Frequent overuse of chemical can cause burning to cows feet. Formaldehyde is a regularly used product but can cause burns and sores with overuse.

NEVER USE FORMALDEHYDE AT GREATER THAN 3% without veterinary advice on frequent footbathing.

Section 6: Dry Mode

Dry Mode allows the Footbath to continue to count cows and wash out but NOT REFILL.

Dry Mode ON

When Dry Bath on is turned ON, the Footbath will run dry when the chemical times on pages 7 and 9 are not active.

Dry Count can be set to just wash the Footbath out and remain empty.

***Disinfectant Switch 1 must be On and Disinfectant Switch 2 must be on Auto for Dry Mode to work**

Example

Chemical 1 is used all day on Monday, Wednesday and Friday.

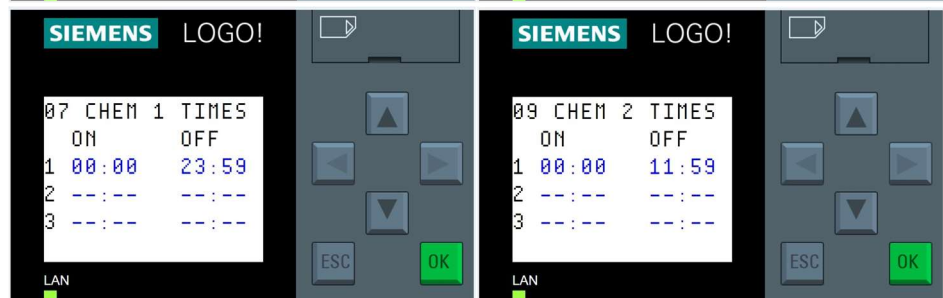
Chemical 2 is used 00:00-11:59 on Tuesday, Thursday and Saturday.

If Dry Mode is On, the next time the Footbath resets on Sunday, and 12:00-23:59 on Tuesday, Thursday and Saturday, it will be dry.

Chemical 1 Settings



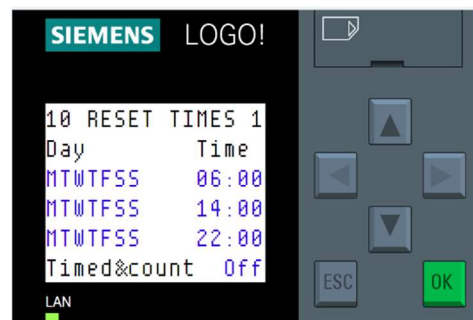
Chemical 2 Settings



Reset Times

To make the Footbath go dry at 12:00, put a reset time of 12:00.

*The reset time must be when the chemical times are not active.



Section 7: Temperature Purging (Optional)

The addition of a temperature based purging module and probe allows the system to purge only when temperature falls to a freezing risk.

Locate the Air Purge where the temperature will not drop below 0°C.

Setup

On the 02 SETUP PAGE 2 Auto Purge will be set to Off, turning it On will create the new 13 AUTO PURGE screen that will show as the last page.

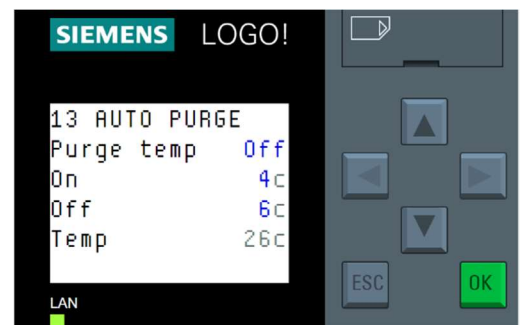
Set Purge temp to be On.

Set the On temperature, below which the system will purge.

Set the Off temperature, above which the purge will not happen.

Example

The current temperature is 26°C. When the temperature falls below 4°C the system will purge after each reset until after the system has reached a temperature above 6°C.



*The temperature probe should be fitted near the water valve/pipe segment that is most likely to be coldest within the system.

*The 3 core cable can be extended but all 3 cores must be of equal specification and length.

*Chemical line purging is available but not recommended.

Section 8: Service & Maintenance

Service

Routine service is required to ensure correct operation of the Hoofcount Footbath.

Items to be checked / replaced

Chemical pump dosing pipes:

- Replace every 12 months (Distance to chemical store less than 10m and less than 1600 cows pass through the Footbath daily).
- Replace every 6 months (Distance the chemical is being pulled from is in excess of 10m or more than 1600 cows pass through the Footbath daily).

Front door seal - Annually (more frequently on higher use installs).

Air cylinders - Bi-annual or as required.

Photocell - Check range and accuracy every 12 months.

Maintenance

Weekly

Clean Photocell.

Monthly

Check the oil reservoir.

Drain the moisture trap.

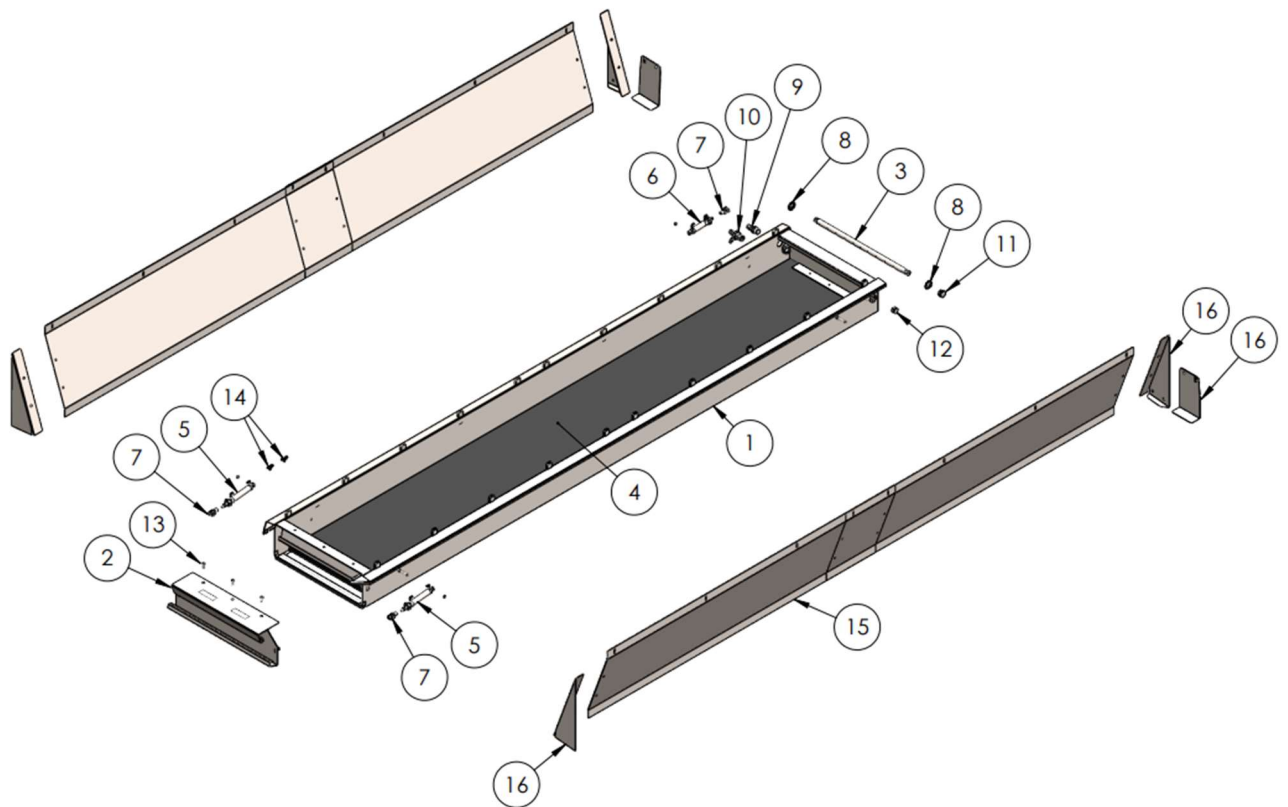
Check the water level halfway down the Footbath, it needs to be 100mm up from the rubber matting.

6 Monthly

Chemical calibration.

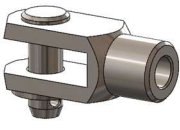
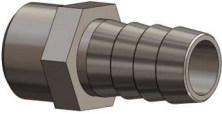
Check wear on chemical pumps.

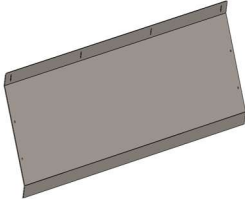
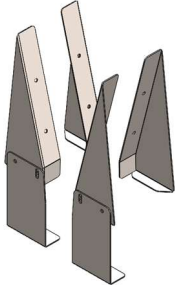
Footbath Parts



Item No.	Part No.	Description	Qty.
1	HC-BATH3.7MBARE	3.7m Footbath	1
2	HC-B10A	Door	1
3	HC-B05	Spray Bar	1
4	HC-B06	Excel Rubber Mat	1

*Parts replaced when the footbath is serviced

Item No.	Part No.	Description	Image	Qty.
5	HC-A26 (HC-A22 x2) (HC-A26A x1)	Door Stainless Air Cylinder		2
6	HC-A58 (HC-A22 x2) (HC-A58A x1)	Sprayer Stainless Air Cylinder		1
7	HC-A27	Stainless Steel Clevis		3
8	HC-A64	Rubber Grommet		2
9	HC-B26	1" Male Hose Tail		1
10	HC-S44	Hosetail Swivel		1
11	HC-S13	Stainless Steel 1" Hex Plug		1
12	HC-S03	Stainless Steel 3/4" Hex Cap		1
13	HC-B04	Front Door Retaining Bolt		3
14	HC-A06	6mm Air Tee		2

15	HC-SS	Stainless Steel Side Sheets		4
16	HC-SS01	Side Sheet Corner Set		1

Service Parts

Part No.	Description	Image
HC-S02	Service Kit (Silicone Tubes for Blue Pumps)	
HC-C16	Replacement Chemical Tubes – Blue Pump	
HC-W04	Water Valve Service Kit - GSR	