

“Boost-A-Break®” - Break Tank & Booster Sets

Model BTAB® – Low Flow Models Overview – Datasheet Page 1 of 5

Overview

Break Tank assembly with Fluid Category 5 protection by virtue of the integral Type AB air gap. The unit is supplied as a complete package on a stainless base ready for installation.

The primary purpose is to provide backflow protection in accordance with the latest Water Regulations. The BTAB unit also boosts the water pressure for elevated areas.

This lower flow range of BTAB models are suited to single outlets which require Category 5 protection – e.g. commercial wash-down points.

The cistern has a screened overflow and weir, making it suitable for unorthodox applications, which require a “Hygienic Type AB air gap”.

For higher flow rate applications see Single and Dual Pump BTAB Datasheets.

For domestic boosting use “Pent-A-Boost” model BTAf.

Applications

The following are Fluid Category 5 examples see Water Regulations (Table 6.1e) -

- Waste bin washing
- Hose union taps – non-domestic
- Wash-down – animals or any Fluid Category 5
- Underground or surface irrigation – see HUBG
- Laboratories
- Baths in health care premises
- Showers health care – see Care Shower
- Sinks with hoses
- Bidets
- Bedpan washing
- Vegetable washing
- Butchery & meat equipment / Slaughterhouse
- Clothes washing machines – healthcare premises
- Dish washing machines – healthcare premises
- Applications deemed to be Category 5 by water company

Water Regulations

The assembly complies with the requirements of the Water Regulations when installed and used correctly. A Break Tank with a Type AB air gap provides protection against Fluid Category 5 risks - these risks are the highest level. “Boost-A-Break®” can therefore be used for all applications requiring backflow protection – use “Pent-A-Boost” for drinking water.

The Regulations require point of use protection. For example, it is not permissible to use the same Break Tank to serve a bedpan washer (Fluid Category 5) and a dishwasher. However several appliances of the same type can be served from the same Break Tank unit – e.g. irrigation network.

Specification

Pressure Supply min.	1.0 bar min. maintained (dynamic)
Pressure Supply max.	10 bar
Pressure Outlet	See flow graph – page 2
Pressure Gauge	63 dia. glycerine filled (except dual)
Vessel Capacity	24 Lt
Cistern Capacity	24 Lt
Inlet Size	See “Inlet Control” table
Outlet Size	See “Outlet Pressure Control” table
Temperature	50° max. ambient



*Model L-3 – Variable speed.
Surge free, quiet and economical. Height 775 mm.
Flow output of 0.5 Lt/s*

Registered UK Design 4036010



Materials

Base / drip tray / fasteners	Stainless steel 304
Pump (wetted parts)	Stainless steel 304
Pipes / fittings	Copper / Brass / Stainless
Cistern 24 Lt	MDPE



*Optional Wall Brackets.
Code – BTBRA.
Second set can be located underneath on floor.*

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“Boost-A-Break®” – Break Tank & Booster Set

Model BTAB® – Low Flow Single Pump 0.5 Lt/s - Datasheet Page 2 of 5

Description – Variable Speed (0.5 Lt/s)

Variable speed pumps provide only the pressure required to meet demand making the unit economical and extending the life of the pump.

There is a choice of 7 variable speed pumps with a 0.5 Lt/s output – see chart below.

The variable speed range has all the benefits of the fixed speed pumps plus -

- Variable speed – speed changes to meet demand
- Quiet – especially at low demand
- Surge free – inverter pump avoids high current demand
- Constant supply pressure
- Electronically controlled automatic pump venting system

Inlet Control

Fast and accurate level control is achieved with solenoid valve(s). Level electrodes provide on/off full flow control with 60 mm delayed action.

Models	Inlet Size	Minimum Dynamic Pressure	Pipe Velocity m/s
All	DN20 female union	1.0 bar	3.7

Outlet Pressure Control

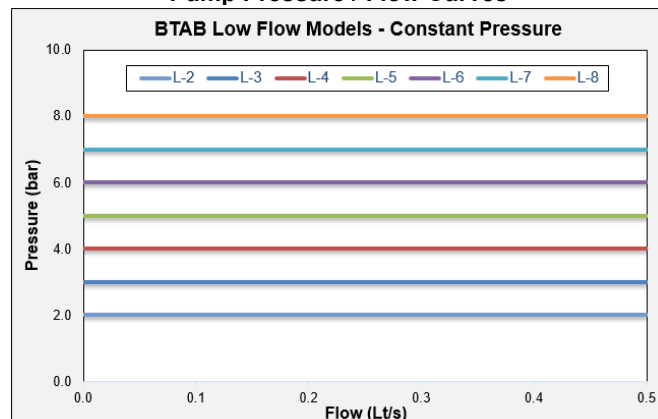
The outlet pressure is controlled by a transducer, which is factory set to the “default set point” in the table below and controlled to within a 10% band. The outlet pressure is therefore constant up to the maximum duty of the pump.

Model	Outlet Size	Default Set point	Pressure Switch on (min.) ¹	Pressure Switch off (Max) ¹	Pressure Max ²	Vessel Air Pressure ³
L-2	DN20	2.0 bar	1.8 bar	2.2 bar	2.8 bar	1.4 bar
L-3	DN20	3.0 bar	2.7 bar	3.3 bar	4.6 bar	2.1 bar
L-4	DN20	4.0 bar	3.6 bar	4.4 bar	4.6 bar	2.8 bar
L-5	DN20	5.0 bar	4.5 bar	5.5 bar	5.5 bar	3.5 bar
L-6	DN20	6.0 bar	5.4 bar	6.6 bar	7.0 bar	4.2 bar
L-7	DN20	7.0 bar	6.3 bar	7.7 bar	9.3 bar	4.9 bar
L-8	DN20	8.0 bar	7.2 bar	8.8 bar	9.3 bar	5.6 bar

Notes - 1. Differential +/- 10% of set point. 2. If set to full speed. 3. Vessel air pressure with zero water pressure, 0.7 X set point.

The graph below illustrates the benefit of variable speed pumps. The outlet pressure is constant despite varying flow demand. Illustrated using “default set point”. The set point can be altered at the factory. On-site alterations require a commissioning service.

Pump Pressure / Flow Curves



Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 phase

	1 phase	Input max
Model	A (Run)	kW
L-2	3.5	0.55
L-3, L-4, L-5	4.7	0.75
L-6	5.6	1.10
L-7, L-8	9.1	1.50

Class
BMS

Low level cut out

Protection

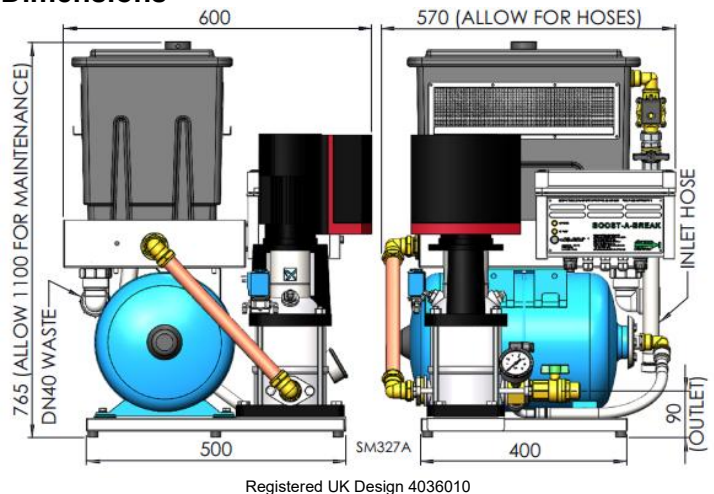
Connection

1 phase

Class 1 (requires earth wire)
Volt free SPDT relay general fault - pump / inverter / low level alarm
Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled
IP65 (Enclosure) / IP55 (Pump)

M20 1 phase + neutral + earth

Dimensions



Registered UK Design 4036010

Model BTAB L-5 Shown (Dimensions apply to all Single Pump units)

Connection Pipes

Flexible stainless braided hoses are supplied for the inlet and outlet. These have a female swivel nut (union) and a fibre washer. See Inlet Control and Outlet Pressure Control tables for size. A full bore inlet servicing valve – as required by the Regulations - is fitted upstream of the solenoid filling valve. The Overflow is 40 mm plastic with compression nut.

Codes and Descriptions – Variable Speed (0.5 Lt/s)

Inlet Size	Code	Description
DN20	BTAB L-2	Boost-a-Break AB Gap L-2 Variable 230V 2.0 bar
DN20	BTAB L-3	Boost-a-Break AB Gap L-3 Variable 230V 3.0 bar
DN20	BTAB L-4	Boost-a-Break AB Gap L-4 Variable 230V 4.0 bar
DN20	BTAB L-5	Boost-a-Break AB Gap L-5 Variable 230V 5.0 bar
DN20	BTAB L-6	Boost-a-Break AB Gap L-6 Variable 230V 6.0 bar
DN20	BTAB L-7	Boost-a-Break AB Gap L-7 Variable 230V 7.0 bar
DN20	BTAB L-8	Boost-a-Break AB Gap L-8 Variable 230V 8.0 bar

Optional extras – see pages 4 and 5

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“Boost-A-Break®” – Break Tank & Booster Set

Model BTAB® – Low Flow Dual Pump Duty Standby 0.5 Lt/s - Datasheet Page 3 of 5

Description – Dual Pump Duty Standby

Dual pump sets are available as a Duty Standby configuration. Only one pump runs at any one time. The pumps alternate on a daily basis to avoid stagnation and ensure even use. A manual override switch “hand” allows either pump to be isolated and run only the healthy pump.

Both pumps are variable speed and set to provide constant pressure. The parallel mounted pumps draw water from the integral ultra-fast filling tank.

Inlet Control

Fast and accurate level control is achieved with solenoid valve(s). Level electrodes provide on/off full flow control with 60 mm delayed action.

Models	Inlet Size	Minimum Dynamic Pressure	Pipe Velocity m/s
All	DN20 female union	1.0 bar	3.7

Outlet Pressure Control

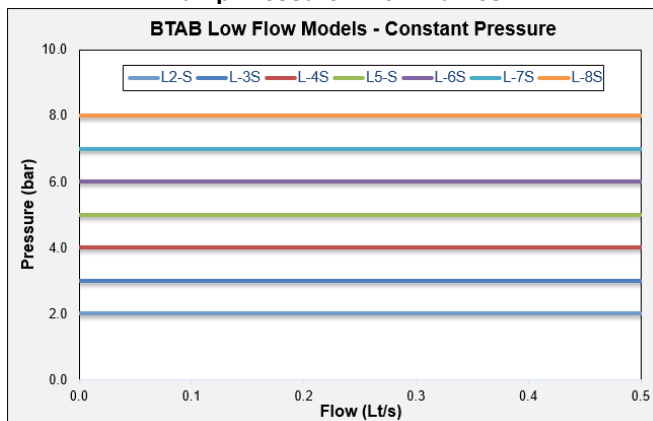
The outlet pressure is controlled by a transducer, which is factory set to the “default set point” in the table below and controlled to within a 10% band. The outlet pressure is therefore constant up to the maximum duty of the pump.

Model	Outlet Size	Default Set point	Pressure Switch on (min.) ¹	Pressure Switch off (Max) ¹	Pressure Max ²	Vessel Air Pressure ³
L-2S	DN20	2.0 bar	1.8 bar	2.2 bar	2.8 bar	1.4 bar
L-3S	DN20	3.0 bar	2.7 bar	3.3 bar	4.6 bar	2.1 bar
L-4S	DN20	4.0 bar	3.6 bar	4.4 bar	4.6 bar	2.8 bar
L-5S	DN20	5.0 bar	4.5 bar	5.5 bar	5.5 bar	3.5 bar
L-6S	DN20	6.0 bar	5.4 bar	6.6 bar	7.0 bar	4.2 bar
L-7S	DN20	7.0 bar	6.3 bar	7.7 bar	9.3 bar	4.9 bar
L-8S	DN20	8.0 bar	7.2 bar	8.8 bar	9.3 bar	5.6 bar

Notes - 1. Differential +/- 10% of set point. 2. If set to full speed. 3. Vessel air pressure with zero water pressure, 0.7 X set point.

The graph below illustrates the benefit of variable speed pumps. The outlet pressure is constant despite varying flow demand. Illustrated using “default set point”. The set point can be altered at the factory. On-site alterations require a commissioning service.

Pump Pressure / Flow Curves



Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 phase

	1 phase	Input max
Model	A (Run)	kW
L-2S	3.5	0.55
L-3S, L-4S	4.7	0.75
L-5S	5.6	1.10
L-6S	5.6	1.10
L-7S, L-8S	9.1	1.10

Class
BMS

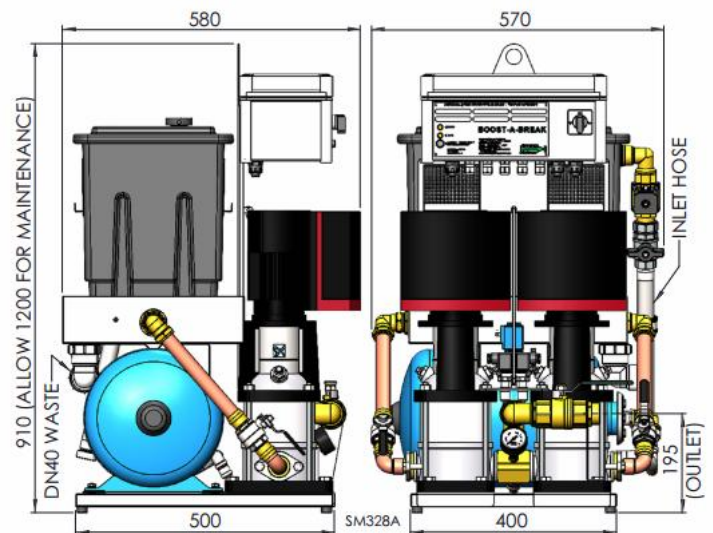
Class 1 (requires earth wire)
Volt free SPDT relay general fault - pump / inverter / low level alarm
Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled
IP65 (Enclosure) / IP55 (Pump)

Low level cut out

Protection
Connection
1 phase

M20 1 phase + neutral + earth

Dimensions



Registered UK Design 4036010

Model BTAB L-5S Shown (Dimensions apply to all Duty Standby units)

Connection Pipes

Flexible stainless braided hoses are supplied for the inlet and outlet. These have a female swivel nut (union) and a fibre washer. See Inlet Control and Outlet Pressure Control tables for size. A full bore inlet servicing valve – as required by the Regulations - is fitted upstream of the solenoid filling valve. The Overflow is 40 mm plastic with compression nut.

Codes and Descriptions – Duty Standby

Inlet Size	Code	Description
DN20	BTAB L-2S	Boost-a-Break AB Gap L-2 Duty Standby Variable 230V 2.0 Bar
DN20	BTAB L-3S	Boost-a-Break AB Gap L-3 Duty Standby Variable 230V 3.0 Bar
DN20	BTAB L-4S	Boost-a-Break AB Gap L-4 Duty Standby Variable 230V 4.0 Bar
DN20	BTAB L-5S	Boost-a-Break AB Gap L-5 Duty Standby Variable 230V 5.0 Bar
DN20	BTAB L-6S	Boost-a-Break AB Gap L-6 Duty Standby Variable 230V 6.0 Bar
DN20	BTAB L-7S	Boost-a-Break AB Gap L-7 Duty Standby Variable 230V 7.0 Bar
DN20	BTAB L-8S	Boost-a-Break AB Gap L-8 Duty Standby Variable 230V 8.0 Bar

Optional extras – see pages 4 and 5

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“Boost-A-Break®” - Break Tank & Booster Set

Model BTAB® – Options – Datasheet Page 4 of 5

Options

- High level alarm relay (volt free) - recommended to minimise the risk of water damage.
- Wall Brackets
- GRP Drip Tray
- GRP Wall Covers – *use wall brackets* – e.g. bin store
- GRP Enclosures – for exterior use

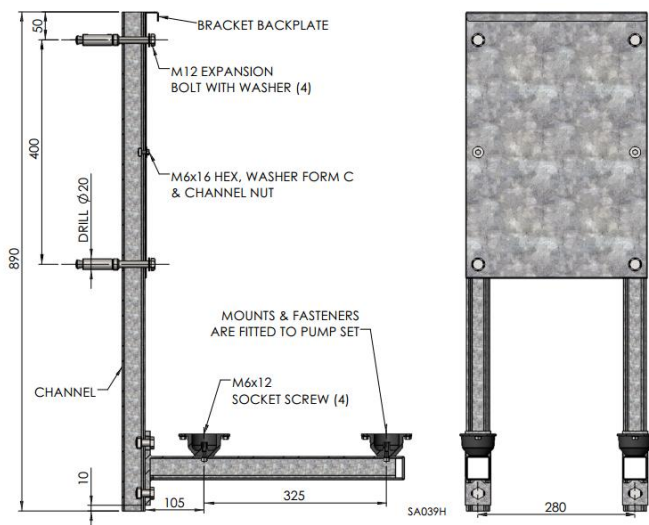
Suitability	Code	Description
Single Pump Units	BTBRA	Wall Bracket for Break Tanks AV Mounts
All	BTDT-SMALL V	GRP Drip Tray c/w Float Switch Small Variable BT
Single Pump Units	BTCAB1	BT Kiosk Door 1050h Heated Green
Single Pump Units	BTCAB2	BT Enc. Lift-off 780h Frost Prot Sys Green
Dual Pump Units	BTCAB6	BT Kiosk With Door 1500h Heated Green
Single Pump Units	BTCAB3	BT Wall Cover 1035h Insulated Grey
All except BTCAB1	BTFPS	BT Frost Protection System
All	BTBMS2	BT High Alarm BMS – Variable Speed

Wall Brackets

BTBRA - Galvanised Steel Wall Mounting Brackets with Anti Vibration mounts. For use with single pump Boost-A-Break® units in the low flow range.



Dimensions

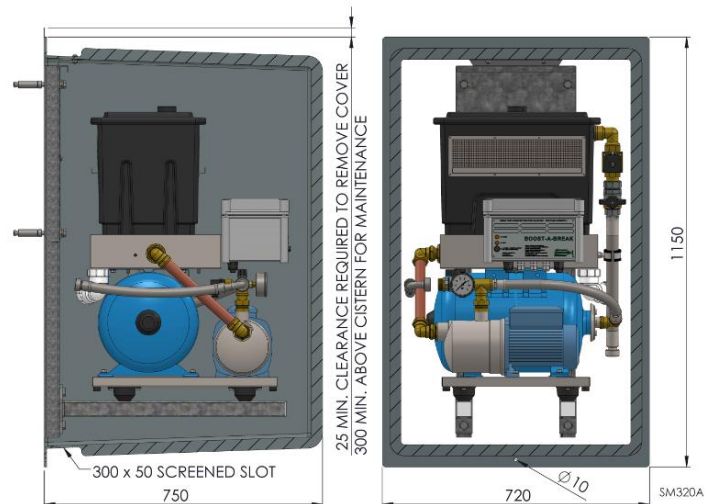


GRP Wall Cover

BTCAB3 – Insulated GRP Wall Cover, for use with the BTBRA Wall Mounting Brackets. The GRP colour is BS 00-A-05 (RAL equivalent is 7038). Integrated Frost Protection System (BTFPS – see BTCAB2 section below) can be added to the Wall Cover. Not suitable for dual pump units.



Dimensions



GRP Enclosures

BTCAB2 – Lift Off GRP Enclosure for exterior use, supplied with a Padlock and Integrated Frost Protection System. A thermostat attached to the control box will cause the pump to run against a closed head to generate heat. The colour of the enclosure is RAL 6005, it is not suitable for dual pump units.



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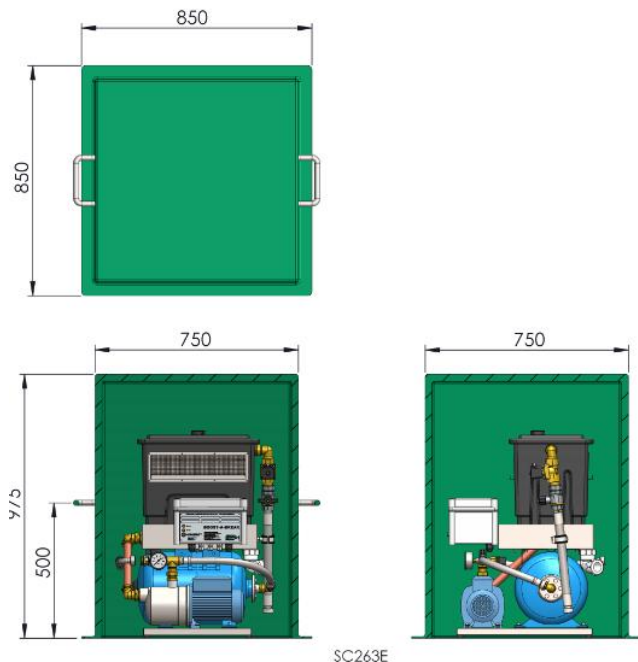


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“Boost-A-Break®” - Break Tank & Booster Set

Model BTAB® – Options (Continued) – Datasheet Page 5 of 5

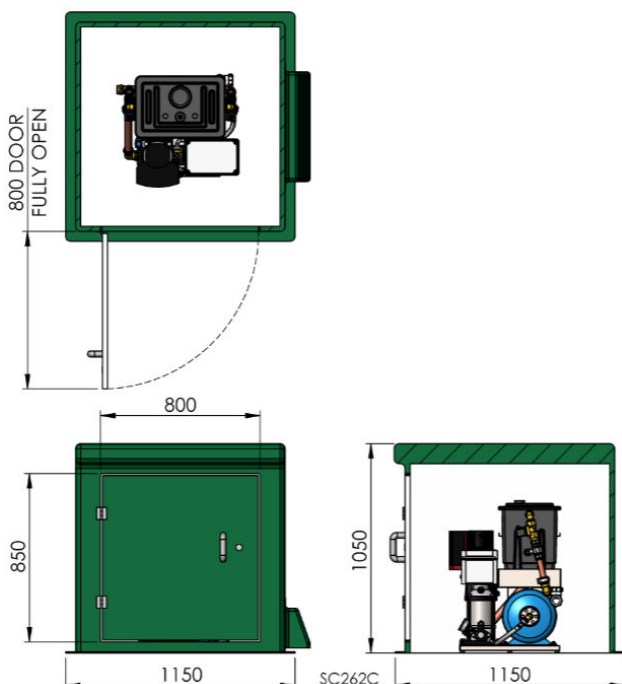
BTCAB2 Dimensions



BTCAB1 – GRP Heated Enclosure with Kiosk Door, for external use of the Boost-A-Break® unit. The housing has an integrated bar heater, complete with thermostat. The exterior colour of the enclosure is RAL6005. Not suitable for dual pump units.

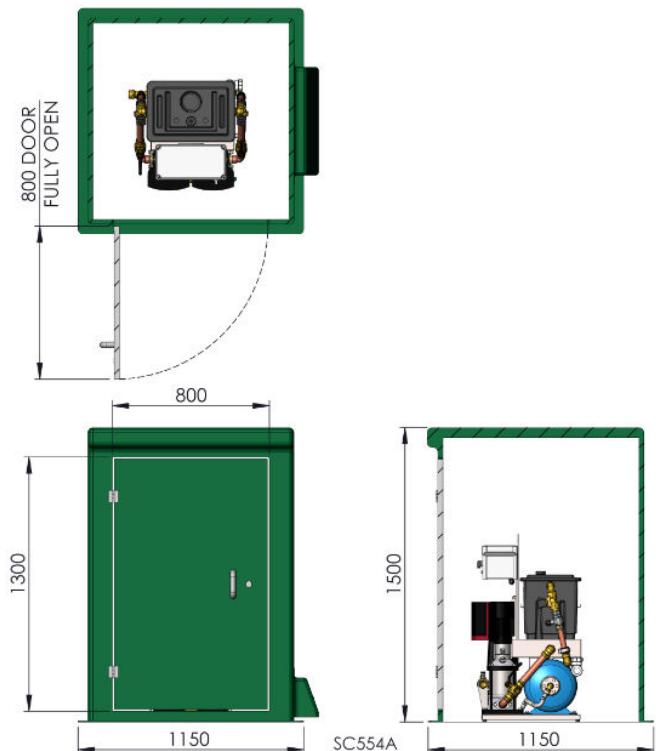


Dimensions



BTCAB6 – GRP Heated Enclosure with Kiosk Door, for external use of all dual pump Boost-A-Break® units in the low flow range. The housing has an integrated bar heater, complete with thermostat. The exterior colour of the enclosure is RAL6005.

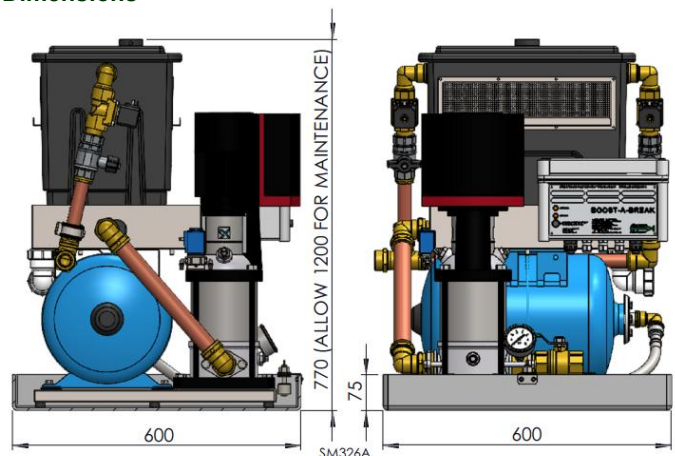
Dimensions



GRP Drip Tray

BTDT-SMALL V – GRP Drip Tray for use with all Boost-A-Break® units in the low flow range, where it is impractical to fit an overflow. When the Drip Tray fills with water, the float switch is activated and isolates the water supply, stopping the pump.

Dimensions



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