"Boost-A-Break®" - Break Tank & Booster Sets

Model BTAB® – c/w 100 Litre Tank Overview – Datasheet

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 or where a high flow rate is required – e.g. wash-down.

The cistern has a screened overflow and weir, making it suitable for unorthodox applications, which require a "Hygienic Type AB air gap" – e.g. butchery and vegetable preparation.

The unit is quiet by virtue of a centrifugal pump, anti-vibration rubber feet and flexible stainless braided connection hoses. The skid mounted base occupies less than 0.5m^2 of floor space and allows the unit to be easily and securely transported. The integral 100 litre GRP break tank is rapidly filled by one, two, or three solenoid valves

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

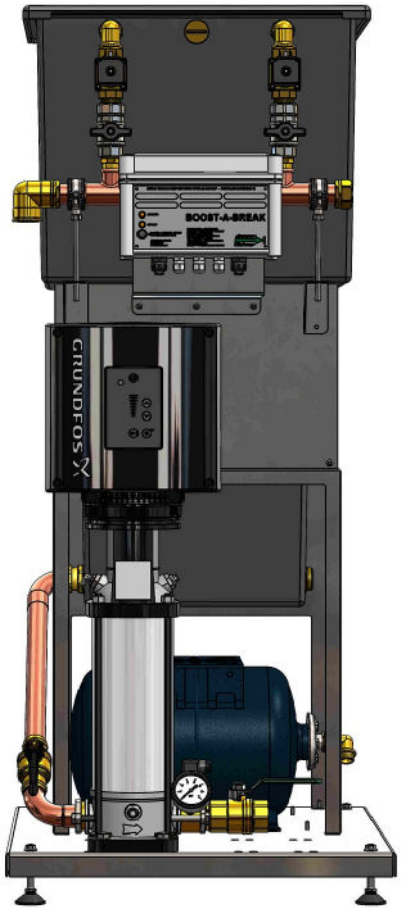
Water Regulations

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	100 Lt
Inlet Size	*See "Inlet Control" table*
Outlet Size	*See "Outlet Pressure Control" table*
Temperature	30° max. ambient



Model 2-6-100 – Variable speed.
Surge free, quiet and economical. Height 1550 mm.
Flow output up to 2.0 Lt/s

Materials

Base / drip tray / fasteners	Stainless steel 304
Pump (wetted parts)	Stainless steel 304
Pipes / fittings	Copper / Brass / Stainless
Cistern 100 Lt	MDPE

5 YEAR WARRANTY

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"Boost-A-Break®" – Break Tank & Booster Set

Model BTAB® – Single Pump c/w 100 Litre Tank 1.0 Lt/s - Datasheet

Description – Variable Speed (1.0 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 9 variable speed pumps with a 1.0 Lt/s output – see chart below.
The variable speed range has all the benefits of the fixed speed pumps plus -

- Higher flow rate – up to 2.0 Lt/s output
- 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.

Model	Inlet Size	Minimum Dynamic Pressure	Pipe Velocity m/s
All	DN25 female union	1.0 bar	2.8

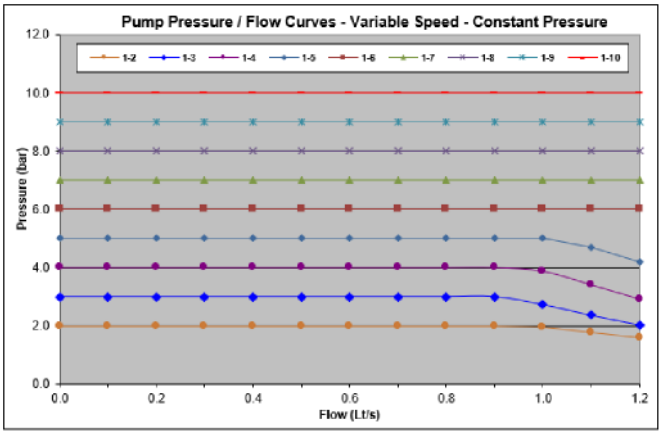
Outlet Pressure Control

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]
1-2-100	DN25	2.0 bar	1.8 bar	2.2 bar	2.8 bar	1.4 bar
1-3-100	DN25	3.0 bar	2.7 bar	3.3 bar	4.6 bar	2.1 bar
1-4-100	DN25	4.0 bar	3.6 bar	4.4 bar	5.5 bar	2.8 bar
1-5-100	DN25	5.0 bar	4.5 bar	5.5 bar	7.0 bar	3.5 bar
1-6-100	DN25	6.0 bar	5.4 bar	6.6 bar	7.0 bar	4.2 bar
1-7-100	DN25	7.0 bar	6.3 bar	7.7 bar	11.7 bar	4.9 bar
1-8-100	DN25	8.0 bar	7.2 bar	8.8 bar	11.7 bar	5.6 bar
1-9-100	DN25	9.0 bar	8.1 bar	9.9 bar	11.7 bar	6.3 bar
1-10-100	DN25	10.0 bar	9.0 bar	11.0 bar	11.7 bar	7.0 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.*



Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 ph (1-2, 1-3, 1-4, 1-5)
400 V 3 ph (1-6, 1-7, 1-8, 1-9, 1-10)

Model	1 phase A (Run)		3 phase A (Run)		Input max kW
1-2-100	4.2				0.55
1-3-100	5.5				0.75
1-4-100	7.5				1.10
1-5-100	5.0				1.10
1-6-100			3.7		2.20
1-7-100, 1-8-100, 1-9-100, 1-10-100			5.0		3.00

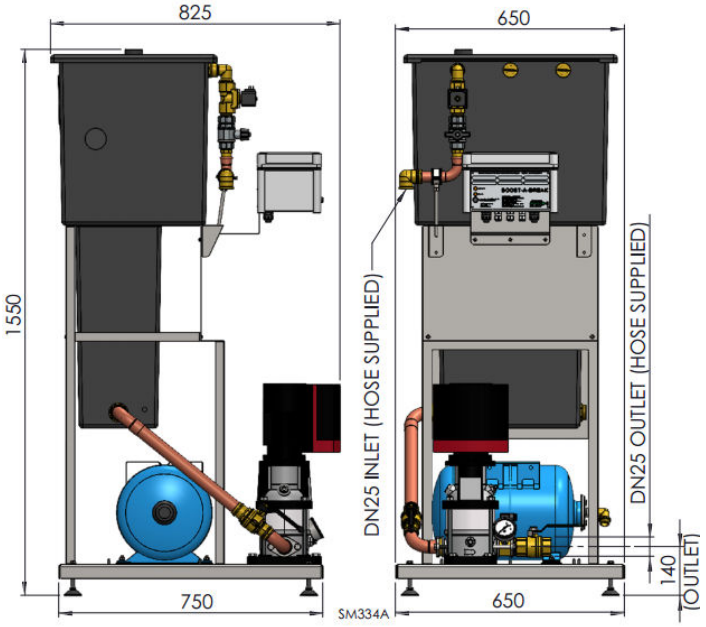
Class — Class 1 (requires earth wire)
BMS — Volt free SPDT relay general fault - pump / inverter / low level alarm
Low level cut out — Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled
Protection — IP65 (Enclosure) / IP55 (Pump)

Connection

1 phase — M20 1 phase + neutral + earth
3 phase[1] — M20 3 phases + neutral + earth

Note – 1. The control circuit is 230 V so a neutral supply is required

Dimensions



Model BTAB1-3-100 Shown (Dimensions apply to all 1.0 Lt/s Single Pump units)

Codes and Descriptions – Variable Speed (1.0 Lt/s)

Inlet Size	Code	Description
DN25	BTAB1-2-100	Boost-A-Break® 1-2 Variable 230 V 2.0 bar 100 Litre
DN25	BTAB1-3-100	Boost-A-Break® 1-3 Variable 230 V 3.0 bar 100 Litre
DN25	BTAB1-4-100	Boost-A-Break® 1-4 Variable 230 V 4.0 bar 100 Litre
DN25	BTAB1-5-100	Boost-A-Break® 1-5 Variable 230 V 5.0 bar 100 Litre
DN25	BTAB1-6-100	Boost-A-Break® 1-6 Variable 400 V 6.0 bar 100 Litre
DN25	BTAB1-7-100	Boost-A-Break® 1-7 Variable 400 V 7.0 bar 100 Litre
DN25	BTAB1-8-100	Boost-A-Break® 1-8 Variable 400 V 8.0 bar 100 Litre
DN25	BTAB1-9-100	Boost-A-Break® 1-9 Variable 400 V 9.0 bar 100 Litre
DN25	BTAB1-10-100	Boost-A-Break® 1-10 Variable 400 V 10.0 bar 100 Litre

Optional extras – see page 6

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"Boost-A-Break®" – Break Tank & Booster Set

Model BTAB® – Single Pump c/w 100 Litre Tank 2.0 Lt/s - Datasheet

Description – Variable Speed (2.0 Lt/s)

There is a choice of 7 variable speed pumps with a 2.0 Lt/s output – see chart below.

The higher flow units are suitable for supplying multiple outlets or applications where a greater flow rate is required.

Inlet Control

Fast and accurate level control is achieved with two 1" filling solenoid valves. Level electrodes provide on/off full flow control with 60 mm delayed action.

Model	Inlet Size	Minimum Dynamic Pressure	Pipe Velocity m/s
All	DN32 female union	1.0 bar	2.4

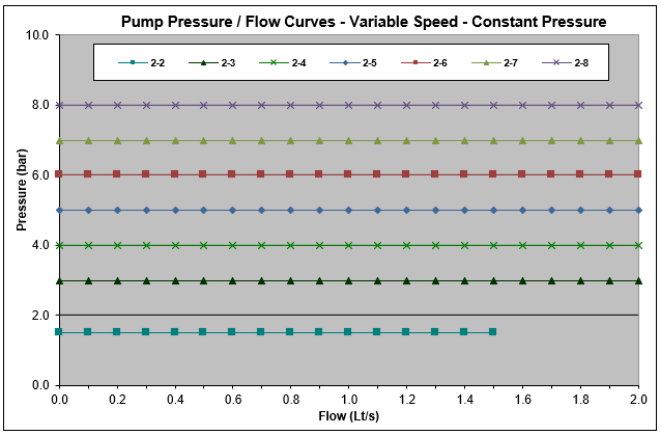
Outlet Pressure Control

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]
2-2-100	DN32	1.5 bar	1.4 bar	1.7 bar	2.8 bar	1.1 bar
2-3-100	DN32	3.0 bar	2.7 bar	3.3 bar	5.0 bar	2.1 bar
2-4-100	DN32	4.0 bar	3.6 bar	4.4 bar	7.0 bar	2.8 bar
2-5-100	DN32	5.0 bar	4.5 bar	5.5 bar	7.0 bar	3.5 bar
2-6-100	DN32	6.0 bar	5.4 bar	6.6 bar	11.7 bar	4.2 bar
2-7-100	DN32	7.0 bar	6.3 bar	7.7 bar	11.7 bar	4.9 bar
2-8-100	DN32	8.0 bar	7.2 bar	8.8 bar	11.7 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.*



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 (G16.4) - is fitted upstream of the solenoid filling valve. The Overflow is 40 mm plastic with compression nut.

Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 ph (2-2, 2-3)
400 V 3 ph (2-4, 2-5, 2-6, 2-7, 2-8)

Model	1 phase A (Run)		3 phase A (Run)		Input max kW
2-2-100	7.5				1.10
2-3-100	7.5				1.50
2-4-100, 2-5-100			3.7		2.20
2-6-100, 2-7-100, 2-8-100			5.0		3.00

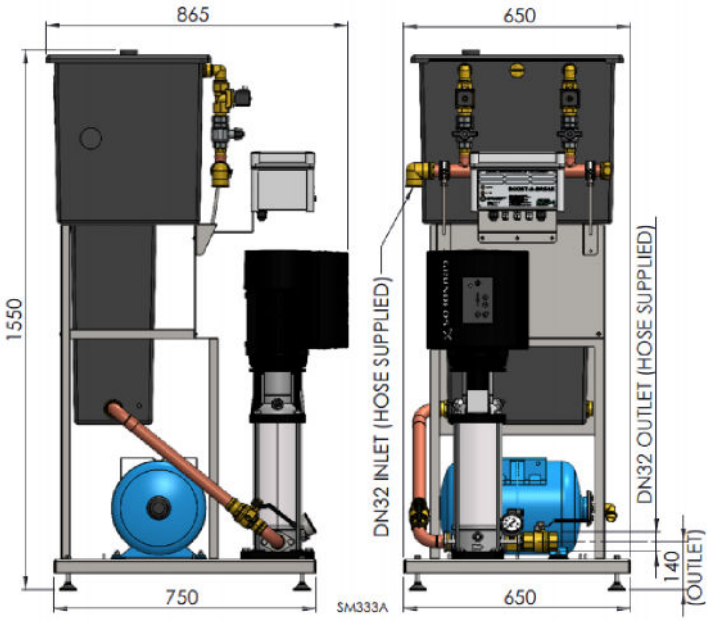
Class Class 1 (requires earth wire)
BMS Volt free SPDT relay general fault - pump / inverter / low level alarm
Low level cut out Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled
Protection IP65 (Enclosure) / IP55 (Pump)

Connection

1 phase M20 1 phase + neutral + earth
3 phase[1] M20 3 phases + neutral + earth

Note – 1. The control circuit is 230 V so a neutral supply is required

Dimensions



Model BTAB2-6-100 Shown (Dimensions apply to all 2.0 Lt/s Single Pump units)

Codes and Descriptions – Variable Speed (2.0 Lt/s)

Inlet Size	Code	Description
DN32	BTAB2-2-100	Boost-A-Break® 2-2 Variable 230 V 1.5 bar 100 Litre
DN32	BTAB2-3-100	Boost-A-Break® 2-3 Variable 230 V 3.0 bar 100 Litre
DN32	BTAB2-4-100	Boost-A-Break® 2-4 Variable 400 V 4.0 bar 100 Litre
DN32	BTAB2-5-100	Boost-A-Break® 2-5 Variable 400 V 5.0 bar 100 Litre
DN32	BTAB2-6-100	Boost-A-Break® 2-6 Variable 400 V 6.0 bar 100 Litre
DN32	BTAB2-7-100	Boost-A-Break® 2-7 Variable 400 V 7.0 bar 100 Litre
DN32	BTAB2-8-100	Boost-A-Break® 2-8 Variable 400 V 8.0 bar 100 Litre
Optional extras – see page 6		

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"Boost-A-Break®" – Break Tank & Booster Set

Model BTAB® – Duty Standby c/w 100 Litre Tank - Datasheet

Description – Dual Pump

Dual pump sets are available as Duty Standby or Duty Assist. Both pumps are variable speed and set to provide constant pressure. The parallel mounted pumps draw from the integral ultra-fast filling tank.

Duty Standby

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.

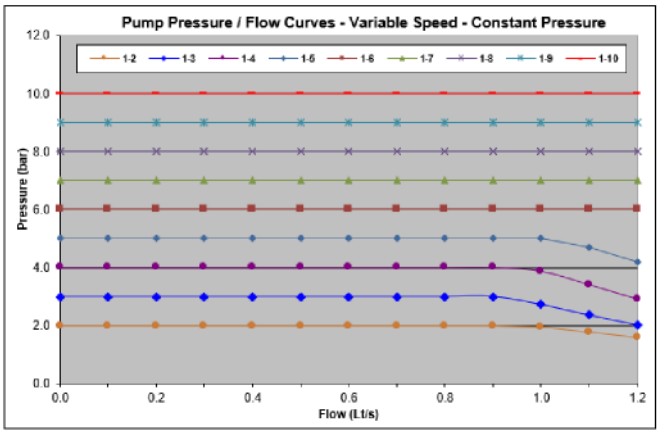
Inlet Control

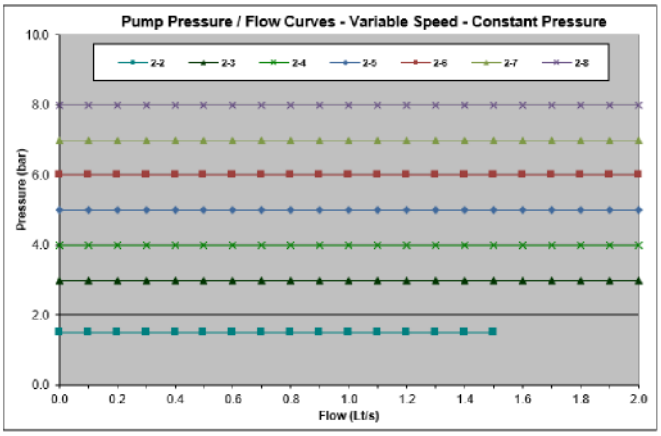
Fast and accurate level control is achieved with either one or two 1" filling solenoid valves. Level electrodes provide on/off full flow control with 60 mm delayed action.

Outlet Pressure Control

Model	Outlet Size	Default Set point	Pressure Switch on (min.)[1]	Pressure Switch off (Max)[1]	Pressure Max[2]	Vessel Air Pressure[3]
1-2-100S	DN25	2.0 bar	1.8 bar	2.2 bar	2.8 bar	1.4 bar
1-3-100S	DN25	3.0 bar	2.7 bar	3.3 bar	5.0 bar	2.1 bar
1-4-100S	DN25	4.0 bar	3.6 bar	4.4 bar	7.0 bar	2.8 bar
1-5-100S	DN25	5.0 bar	4.5 bar	5.5 bar	7.0 bar	3.5 bar
1-6-100S	DN25	6.0 bar	5.4 bar	6.6 bar	11.7 bar	4.2 bar
1-7-100S	DN25	7.0 bar	6.3 bar	7.7 bar	11.7 bar	4.9 bar
1-8-100S	DN25	8.0 bar	7.2 bar	8.8 bar	11.7 bar	5.6 bar
1-9-100S	DN25	9.0 bar	8.1 bar	9.9 bar	11.7 bar	6.3 bar
1-10-100S	DN25	10.0 bar	9.0 bar	11.0 bar	11.7 bar	7.0 bar
2-2-100S	DN32	1.5 bar	1.4 bar	1.7 bar	2.8 bar	1.1 bar
2-3-100S	DN32	3.0 bar	2.7 bar	3.3 bar	5.0 bar	2.1 bar
2-4-100S	DN32	4.0 bar	3.6 bar	4.4 bar	7.0 bar	2.8 bar
2-5-100S	DN32	5.0 bar	4.5 bar	5.5 bar	7.0 bar	3.5 bar
2-6-100S	DN32	6.0 bar	5.4 bar	6.6 bar	11.7 bar	4.2 bar
2-7-100S	DN32	7.0 bar	6.3 bar	7.7 bar	11.7 bar	4.9 bar
2-8-100S	DN32	8.0 bar	7.2 bar	8.8 bar	11.7 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.





Electrical Specification

Motor 2-Pole 50 Hz — 230 V 1 ph (1-2, 1-3, 1-4, 1-5, 2-2, 2-3)
400 V 3 ph (1-6, 1-7,1-8, 1-9, 1-10, 2-4, 2-5, 2-6, 2-7, 2-8)

Model	1 phase A (Run)	3 phase A (Run)	Input max kW
1-2-100S	4.2		0.55
1-3-100S	5.5		0.75
1-4-100S, 2-2-100S	7.5		1.10
1-5-100S	5.0		1.10
2-3-100S	7.5		1.50
1-6-100S, 2-4-100S, 2-5-100S		3.7	2.20
1-7-100S, 1-8-100S, 1-9-100S, 1-10-100S, 2-6-100S, 2-7-100S, 2-8-100S		5.0	3.00

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

Connection

1 phase — M20 1 phase + neutral + earth
3 phase[1] — M20 3 phases + neutral + earth

Note – 1. The control circuit is 230 V so a neutral supply is required

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 Codes and Descriptions and Outlet Pressure Control tables for size. A full bore inlet servicing valve – as required by the Regulations (G16.4) – 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
DN25	BTAB1-2-100S	Boost-A-Break 1-2S Variable 230V 2.0 Bar 100 Litre
DN25	BTAB1-3-100S	Boost-A-Break 1-3S Variable 230 V 3.0 Bar 100 Litre
DN25	BTAB1-4-100S	Boost-A-Break 1-4S Variable 230V 4.0 Bar 100 Litre
DN25	BTAB1-5-100S	Boost-A-Break 1-5S Variable 230V 5.0 Bar 100 Litre
DN25	BTAB1-6-100S	Boost-A-Break 1-6S Variable 400V 6.0 Bar 100 Litre
DN25	BTAB1-7-100S	Boost-A-Break 1-7S Variable 400V 7.0 Bar 100 Litre
DN25	BTAB1-8-100S	Boost-A-Break 1-8S Variable 400V 8.0 Bar 100 Litre
DN25	BTAB1-9-100S	Boost-A-Break 1-9S Variable 400V 9.0 Bar 100 Litre
DN25	BTAB1-10-100S	Boost-A-Break 1-0S Variable 400V 10.0 Bar 100 Litre
DN32	BTAB2-2-100S	Boost-A-Break 2-2S Variable 230V 2.0 Bar 100 Litre
DN32	BTAB2-3-100S	Boost-A-Break 2-3S Variable 230V 3.0 Bar 100 Litre
DN32	BTAB2-4-100S	Boost-A-Break 2-4S Variable 400V 4.0 Bar 100 Litre
DN32	BTAB2-5-100S	Boost-A-Break 2-5S Variable 400V 5.0 Bar 100 Litre
DN32	BTAB2-6-100S	Boost-A-Break 2-6S Variable 400V 6.0 Bar 100 Litre
DN32	BTAB2-7-100S	Boost-A-Break 2-7S Variable 400V 7.0 Bar 100 Litre
DN32	BTAB2-8-100S	Boost-A-Break 2-8S Variable 400V 8.0 Bar 100 Litre

Optional extras – see page 6

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"Boost-A-Break®" – Break Tank & Booster Set

Model BTAB® – Duty Assist c/w 100 Litre Tank - Datasheet

Duty Assist

Allows the second pump to automatically switch on when required, thus doubling the output. Alternate starting avoids stagnation an ensures even use. If one pump develops a fault, the controller isolates and continues with the healthy pump (the BMS fault relay activates together with panel lamps). Normal demand is often met with only one small pump running at optimum efficiency, offering substantial energy saving compared to one larger pump. Furthermore smaller pumps are quieter.

Connection Pipes

DN40 flexible stainless braided hoses are supplied for the inlet and outlet. These have a female swivel nut (union) and a fibre washer. The DN40 inlet connection is reversible, allowing for left or right hand side configurations. A full bore servicing valve – as required by the Regulations (G16.4) – is fitted upstream of each of the three solenoid filling valves. The Overflow is 50 mm plastic with compression nut.

Specification

Pressure Supply min.	1.0 bar min. maintained (dynamic)
Pressure Supply max.	10 bar
Vessel Capacity	100 Lt
Inlet Size	DN40
Outlet Size	DN40
Temperature	30° max. ambient

Inlet Control

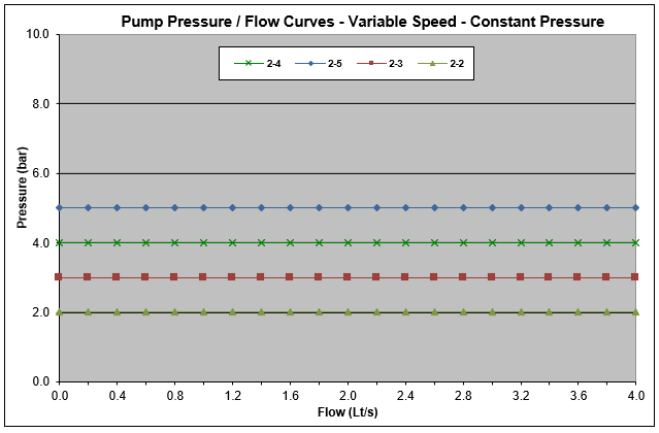
Fast and accurate level control is achieved with three 1" filling solenoid valves. Level electrodes provide on/off full flow control with 60 mm delayed action.

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]
2-2-100A	DN40	2.0 bar	1.8 bar	2.2 bar	5.0 bar	1.4 bar
2-3-100A	DN40	3.0 bar	2.7 bar	3.3 bar	5.0 bar	2.1 bar
2-4-100A	DN40	4.0 bar	3.6 bar	4.4 bar	7.0 bar	2.8 bar
2-5-100A	DN40	5.0 bar	4.5 bar	5.5 bar	7.0 bar	3.5 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.



Electrical Specification

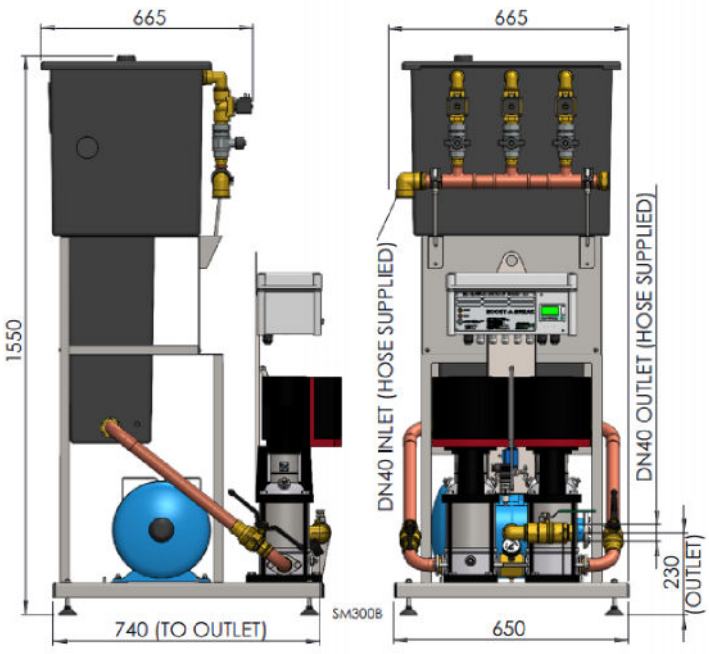
Motor 2-Pole 50 Hz 230 V 1 ph (2-2, 2-3)
400 V 3 ph (2-4, 2-5)

Model	1 phase A (Run)		3 phase A (Run)		Input max kW
2-2-100A, 2-3-100A	15.0				3.00
2-4-100A, 2-5-100A	7.4				4.40

Class	Class 1 (requires earth wire)
BMS	Volt free SPDT relay general fault - pump / inverter / low level alarm
Low level cut out	Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled
Protection	IP65 (Enclosure) / IP55 (Pump)
Connection	
1 phase	M20 1 phase + neutral + earth
3 phase[1]	M20 3 phases + neutral + earth

Note – 1. The control circuit is 230 V so a neutral supply is required

Dimensions



Model BTAB2-3-100A Shown (Dimensions apply to all Dual Pump units)

Codes and Descriptions – Duty Assist

Inlet Size	Code	Description
DN40	BTAB2-2-100A	Boost-A-Break 2-2 Variable 230V 2.0 Bar 100 Litre DA
DN40	BTAB2-3-100A	Boost-A-Break 2-3 Variable 230V 3.0 Bar 100 Litre DA
DN40	BTAB2-4-100A	Boost-A-Break 2-4 Variable 400V 4.0 Bar 100 Litre DA
DN40	BTAB2-5-100A	Boost-A-Break 2-5 Variable 400V 5.0 Bar 100 Litre DA
Optional extras – see page 6		

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"Boost-A-Break®" - Break Tank & Booster Set

Model BTAB® – Options – Datasheet

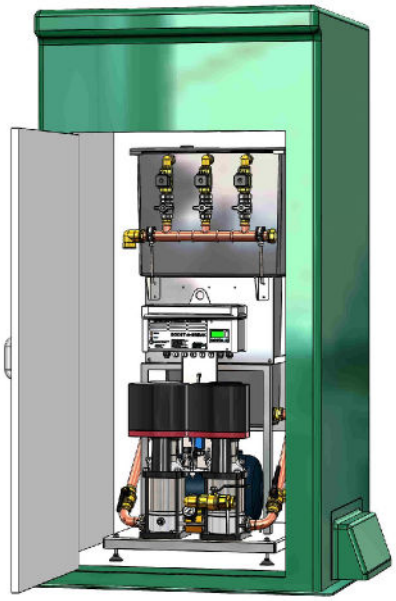
Options

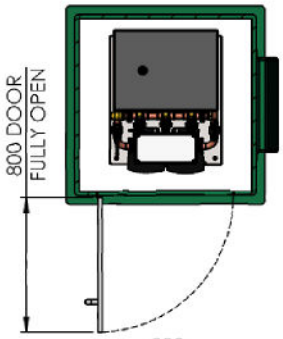
- High level alarm relay (volt free) - recommended to minimise the risk of water damage.
- GRP Enclosures – for exterior use
- GRP Drip Trays

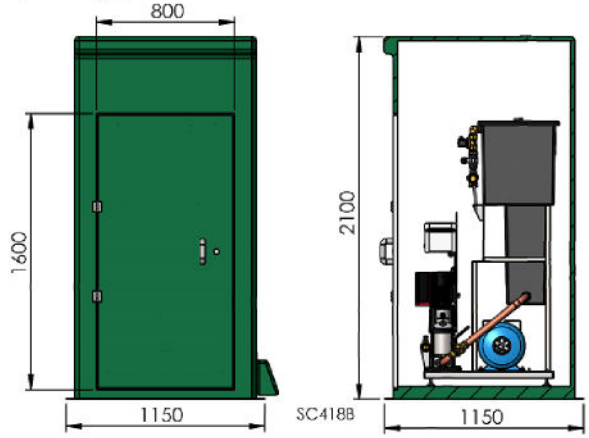
Suitability	Code	Description
All	BTBMS2	BT High Alarm BMS – Variable Speed Pumps
All	BTDUALCAB	Enc. 1150x1150x2100 GRP c/w Heating
All	BTDT-LARGE	GRP Drip Tray c/w Float Switch Large 3PH

GRP Enclosures

BTDUALCAB – GRP Heated Enclosure with Kiosk Door, for external use with all Boost-A-Break® units with 100 litre tank. The housing has an integrated bar heater, complete with thermostat. The exterior colour of the enclosure is RAL6005.

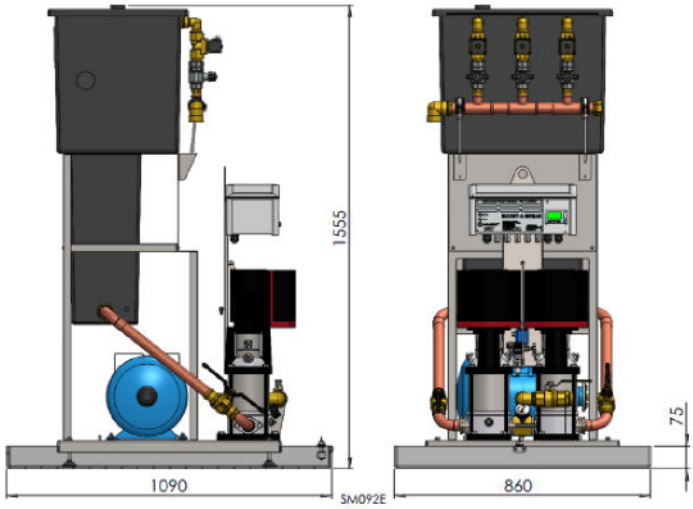






GRP Drip Tray

BTDT-LARGE – GRP Drip Tray for use with all Boost-A-Break® units with 100 litre tank. When the Drip Tray fills with water, the float switch is activated and isolates the water supply, stopping the pump.



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