



# **Resvari (variable speed) and Resfix (fixed speed)**

BOOSTER SETS FOR DOMESTIC DWELLINGS



## Resvari (variable speed) and Resfix (fixed speed) Booster Sets

- Integral water storage with Class AB air gap I.E. Category 5.
- Delivery: up to 1 l/s
- Head: up to 4.2 Bar.
- Actual usable tank capacity 180 litres.
- Adjustable feet for easy levelling.
- Internal vessel for smooth pump control and minimising the number of pump starts.
- Input / output isolation valves for ease of maintenance and commissioning.
- Low water protection.

## Boosted water supply

An ever increasing demand on our water supply lines can sometimes lead to poor performance at the point of use due to low pressures, especially at peak demand periods.

In addition to this, water supply companies in some parts of the country are reducing pressures to avoid excessive water loss through leaks.

A Lowara professionally sized and installed booster set will provide a perfect solution to overcoming low water pressures around the home. Installing a Lowara booster set will ensure that water pressures for both hot and cold supplies will be able to cover the most demanding requirements.

Lowara can provide either fixed or variable speed booster sets depending on the application.

The Resfix (fixed speed) booster set will provide a cost sensitive solution whilst the Resvari (variable speed) booster set will give energy savings over the lifetime of the pump and provide a very stable pressure platform irrespective of the number of outlets being used simultaneously.

## Maintenance

The Resvari (variable speed) and Resfix (fixed speed) booster sets have been designed to be compact, quiet in operation and to make servicing as simple as possible.

Both variable and fix speed booster sets use a common cabinet size which have a removable top section.

On routine maintenance checks or the rare occasion when the unit may need attention the top section can be easily removed to expose all the components which will help to make servicing quick, clean and problem free.

## Assist unit

Where a larger water storage volume is required an assist unit can be added to give an additional 180 litres of water storage.

## Duty Requirement

The duty required can be found by looking at the two following items:-

### 1. Pressure requirement.

This has 3 elements to consider:-

- a. Static head.**  
This is the height above the break tank water line in the booster set to the highest outlet.
- b. Friction loss.**  
These are the losses through the pipe work including bends. In the example below, estimating the total length of pipe to be 25 metres and limiting the velocity to 1.5m/s an average pressure loss of 15 metres per 100 metres can be expected.
- c. Residual pressure,** this is the pressure required at the outlet.

**Example:**

Static height = 4m

Friction loss =  $15/100 \times 25\text{m} = 3.75\text{m}$

Residual pressure at highest outlet = 20m

Total pressure requirement =  $4 + 3.75 + 20 = 27.75\text{m}/10.2 = 2.7\text{bar}$

### 2. Flow requirement.

The flow requirement will depend on the number of occupants and the number and type of outlets that will be served.

In general the Resvari (variable speed) and Resfix (fixed speed) booster sets are suitable for dwellings with up to 4 occupants or 6 occupants with the addition of the assist unit.

Daily water demand as recommended by the Plumbing Engineering Services Guide:-

1 bedroom	210 litres
2 bedroom	130 litres each
3 bedroom +	100 litres each

## Water Storage

The water supply companies are empowered to insist on specific terms, including the volume or period of storage. However, many water supply companies only recommend that storage be provided in accordance with BS6700 placing the responsibility and decision firmly on the consumer.

If the water supply companies do not specifically dictate the storage volume then 50% of the daily demand is generally acceptable.





Number of occupants	Maximum expected flow	Maximum pressure	Minimum storage requirement	Standard booster set	Booster set + assist unit
1	0.4 l/s	4.2 bar	105 litres	●	
2	0.5 l/s	4.0 bar	130 litres	●	
3	0.6 l/s	3.8 bar	150 litres	●	
4	0.7 l/s	3.6 bar	200 litres*	●	
5	0.8 l/s	3.2 bar	250 litres		●
6	1.0 l/s	2.7 bar	300 litres		●

Note: \* Indicates a small amount of filling by the mains supply has been allowed for.  
All properties will differ in actual usage requirements, the above is for guidance only and ultimately the onus for correct product selection lies with the specifier or contractor.

## System operation

### Resvari Booster Set Variable speed Aquontroller

When an outlet is opened, the pressure will start to decrease, a small amount of water will be provided by the integral 8 litre storage vessel, if the usage depletes the vessel volume the pressure will continue to fall to the set point (adjustable typically 3 bar) and the pump will start to ramp up and operate at a speed required to match the demand, if the demand increases the pump will ramp up further to maintain the set point or until full speed is reached.

As demand decreases the pump will ramp down still maintaining the system set point.

When demand has decreased to a point where the reset point in the controller has been reached the pump will continue to ramp down and stop.

The next time an outlet is opened the above procedure will repeat.

If during a water demand the break tank becomes empty, the Aquontroller unit will sense a lack of water and after approximately 30 seconds shut the system down, the system will then try to restart the pump at timed intervals, if after a set period the water supply is not restored the pump will be shut down completely.



### Resfix Booster Set Fixed speed Genyo control

When an outlet is opened, the pressure will start to decrease, a small amount of water will be provided by the integral 8 litre storage vessel, if the usage depletes the vessel volume the pressure will continue to fall to the set point (typically 2.2bar) and the pump will start, depending on the volume of water being used the pressure will rise and maintain the system discharge.

When demand ceases to a level below 3 l/m the pressure vessel will be recharged with water and the pump will be stopped.

The next time an outlet is opened the above procedure will repeat.

If during a water demand the break tank becomes empty, the Genyo unit will sense a lack of water and after approximately 30 seconds shut the system down, the system will then try to restart the pump at timed intervals, if after a set period the water supply is not restored the pump will be shut down completely.



## Power Supply

230-1-50

Protection IP65

## Pump Type

Scuba SC205C

230-1-50

Input current 4.37A

## System connections

Mains incoming water supply: 15mm

Overflow: 22mm

System connection: 22mm

## Materials

**Cabinet:**

Powder coated steel

**Water tank:**

Polyethylene

**Ball valve 1/2":**

Brass to BS1212 part 2

**Pump:**

AISI 304 Stainless steel

**Pipework:**

Copper

**Compression fittings:**

Brass

**Isolation valves:**

Brass

**Plastic fittings:**

Polypropylene

**Tank insulation:**

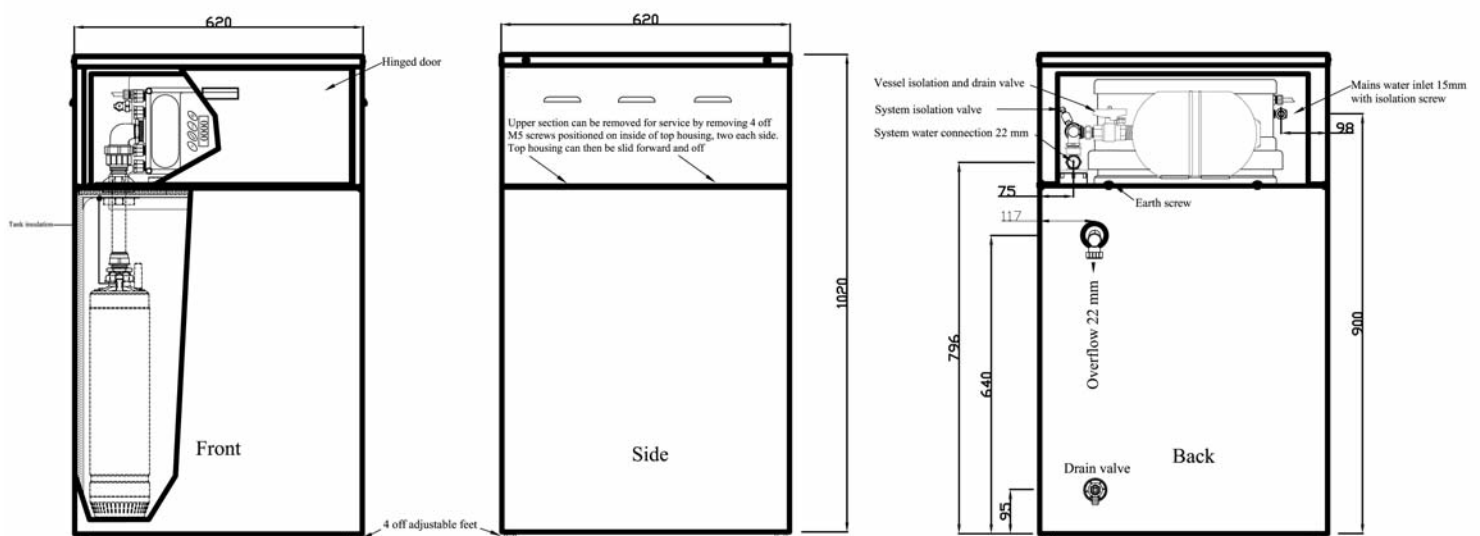
Polyisocyanurate (PIR)

**Anti-spin bracket:**

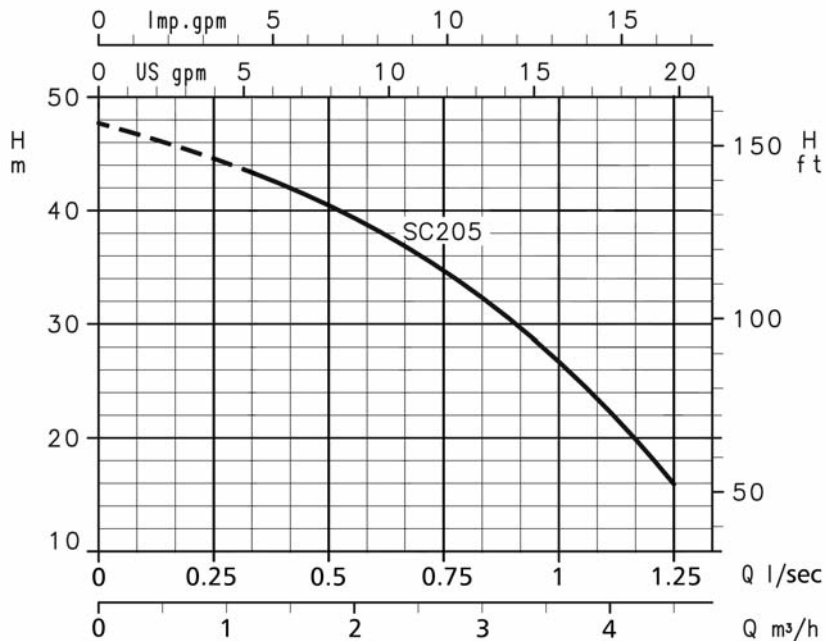
AISI 304 Stainless steel

**8 litre vessel:**

Powder coated steel with Butyl membrane



## SCUBA SC205 Operating characteristics at 50 Hz ~ 2850 rpm ISO 9906 - Annex A



## Aquada UV Series

We can also offer the benefits of the Aquada UV series, (Ultraviolet disinfection) which enhances overall water safety, no harmful chemicals or by-products, no affect on taste and water quality, simple to install with low maintenance and economical. The Aquada UV system requires less energy than a typical household light bulb yet can disinfect the entire water flow to your home.

The Aquada unit is available in five sizes depending on the flow requirements of your home, and is designed to deliver the UV dose recommended by European regulatory and safety agencies, you can be sure that your water will always be safe and effectively disinfected.



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