

## WILO BRONZE CIRCULATORS HELP TO KILL OFF LEGIONELLA

Wilo Salmson market a wide range of Bronze circulators for secondary hot water transportation. These have been specially designed to help prevent the legionellae bacteria build-up in water storage calorifiers.

The circulator acts as an anti-stratification device and is particularly suitable for hospitals, residential homes for the elderly and sheltered housing which use high volumes of water. It would normally be installed as part of a secondary hot water system which involves a separate ring main operating independently from the primary central heating circuit. The main purpose of a secondary system is to ensure that there is always a constant supply of hot water available instantly at the various draw-off points with no cold "dead legs" in the circuit. However, an additional application for the "SB" series is that the circulator - which is available with an integrated timer clock - is fitted to a loop of pipework on the side of the actual hot water storage calorifier.



Hot water will generally kill off legionellae bacteria but problems arise, particularly for high risk categories such as the young, sick and elderly especially when the circuit is not in constant use. This can lead to stratification in the storage tank - with hot water at the top and a cold layer at the bottom. Bacteria breed and multiply in the cold section and are then drawn off when the system again comes into use. This is eliminated by setting the time clock on the circulator to induce circulation automatically at times of low demand - usually during the night - to maintain the temperature of the water at an even level of 60°C at which temperature the bacteria will be killed off.

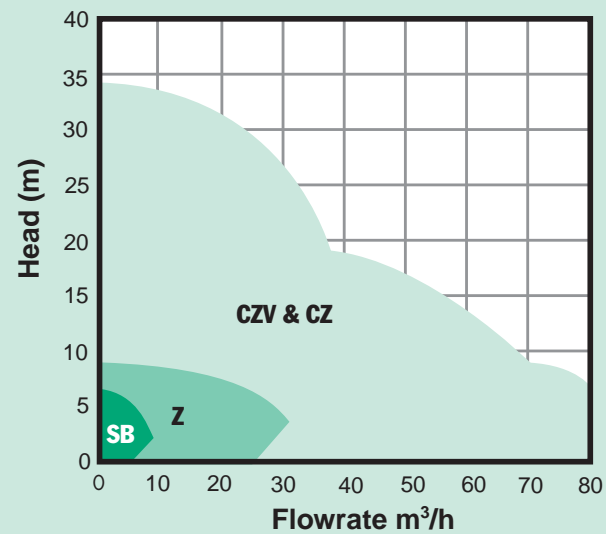
The Wilo Salmson "SB" series is one of four bronze bodied circulators designed for secondary hot water applications. It is unusual in containing an integral timer mounted on the terminal box. This not only facilitates ease of setting but also eliminates the cost of wall mounted timer units.

### Alternative Bronze Ranges

The SB glandless bronze range forms a part of our comprehensive range of pumps and circulators that are suitable for secondary hot water service applications. If you cannot find a suitable circulator for your application within this brochure please refer to...

**Z Range Brochure** – glandless bronze circulators. Single or Three Phase motors. Union or flanged connections.

**CZ Range Brochure** – mechanically sealed bronze circulators. Three phase motors. Flanged connections.



**Salmson Factory**  
Laval, France  
BS EN ISO9001

**Wilo Factory**  
Dortmund, Germany  
BS EN ISO9001



Research & Development

## Wilo-SB®

### Bronze, Glandless In-line Circulators

For secondary hot water services in domestic, commercial and industrial applications



WILO SALMSON PUMPS LTD

Wilo Salmson Pumps Ltd is part of the Group who in 1929 invented and patented the first domestic circulator. Since then Wilo Salmson has been known for continuous innovation. The Wilo Salmson Group is a £300 million turnover company whose strength and resources guarantees continuity. The key words in our vocabulary are quality, reliability and service.

If we speak the same language, perhaps you should be talking to us.

**Why not give us a ring?**



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All drawings are approximate and for guidance only. Actual details may be obtained on request. With our policy of continual improvement we reserve the right to alter specifications without prior notice. Wilo SB® is a registered trade mark of Wilo Salmson Pumps Ltd E&OE

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**The Range**

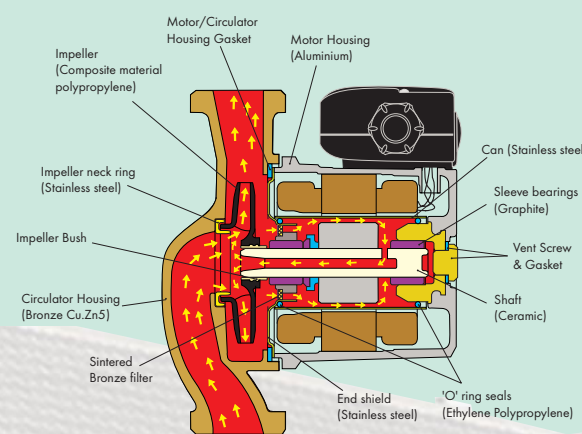
The Wilo SB® range comprises just four models and yet provides the installer with an ideal solution to the majority of secondary hot water service applications. Designed with both the installer and end user in mind these circulators are easy to fit and energy efficient in operation. All SB models can be fitted with the optional timer control that allows the on/off function to be programmed so that the circulator operates only when required. All SB models are fitted with non-overloading motors and thus require no external motor protection. The SB range is suitable for both new or replacement work and can be used with chilled water down to -10°C as standard due to the condensation proof design.

**Approvals**

All SB models have WRc approval. These circulators are manufactured in what is probably the most advanced factory in Europe. The factory operates a quality assurance system which is approved to BS EN ISO 9001 (formerly BS5750 Part 1). Wilo Salmson Pumps Ltd in the UK also operate a quality assurance system which is approved to BS EN ISO 9002 (formerly BS5750 Part 2). This ensures that our product offers the highest standard of quality and reliability with an unbroken supply chain – from research and design, to manufacture and supply in the UK.

**Construction**

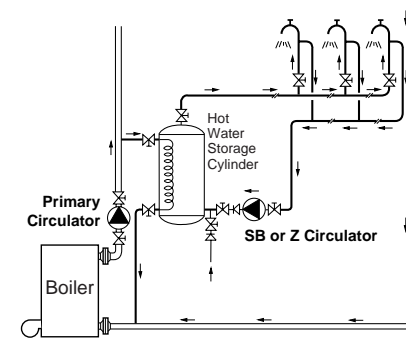
The SB circulators are of the glandless design with the rotating parts running in the liquid being circulated. This principle can be seen in this sectional illustration.



The unique hollow ceramic shaft and sintered bronze filter serve to maximise the running hours – ensuring long and trouble free service. The ceramic shaft minimises the build up of calcium based salts, whilst the sintered bronze filter serves to remove any harmful debris from the water before it is circulated around the rotor and bearings. Sealing is effected with ethylene propylene 'O' rings sitting on the stainless steel can.

**Installation**

This diagram depicts a typical secondary hot water installation with the circulator on the return of the system.



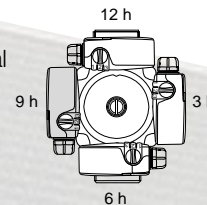
Whilst the maximum service water temperature for the SB range is +110°C it should be noted that on secondary hot water applications a maximum of +65°C should be observed. This will minimise build up of harmful calcium deposits within the circulator that could cause the unit to cease.

Note: In hard water areas, or those areas susceptible to poor water quality, Wilo recommend that the water is softened or treated prior to use in the secondary hot water circuit.

The circulators may be installed in either the flow or return pipework serving the boiler. The water flow direction through the circulator is indicated by an arrow cast into the circulator housing.

If the terminal box is found to be positioned inconveniently, it can be turned as required through 90° increments. The motor shaft axis must always be horizontal or slightly above.

Note: It is not recommended that the terminal box is at the 6 o'clock position due to the possible ingress of water from above. Please refer to our operating & maintenance manuals available on request.



Switch designed to facilitate easy speed selection from the front face of the circulator. Terminal box cover fixing screw is captive. No more searching for lost screws.

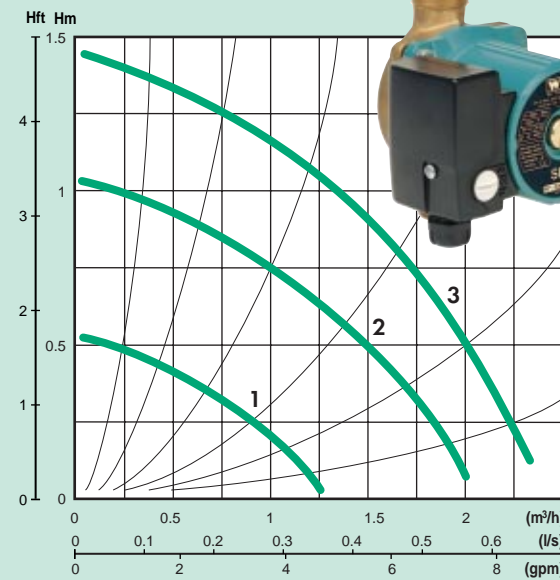


All SB models can be fitted with the optional timer control that allows the on/off function to be programmed so that the circulator operates only when required.



Earth, live and neutral connections are accessible from the front face to allow easy wiring of the unit. Replaceable capacitor.

**SB5**



Switch (position)	Speed (rpm)	Power Input (W)	F.L.C (A)	O/L (A)	Capacitor μF (V.c.r.)
1	1000	20	0.10	-	1.6
2	1600	32	0.15	-	
3	2000	48	0.22	-	

Minimum Positive Static Head	
Temperature (T max.)	65°C 110°C
	0.5m 10m

Minimum positive static head (m) at suction port of pump to avoid cavitation noise at +40°C ambient and water temperature T max.

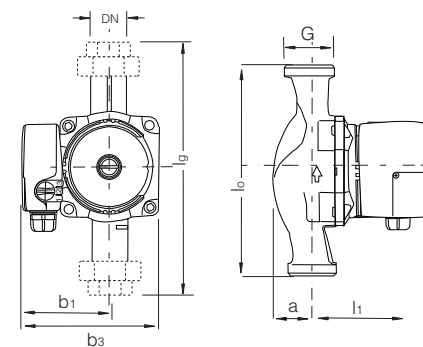
**Specification - SB Range**

**Motor Data - 3 speed**

Voltage..... single phase 230V, 50Hz  
 Degree of Protection .....IP42  
 Allen key size .....5mm

**Operating conditions**

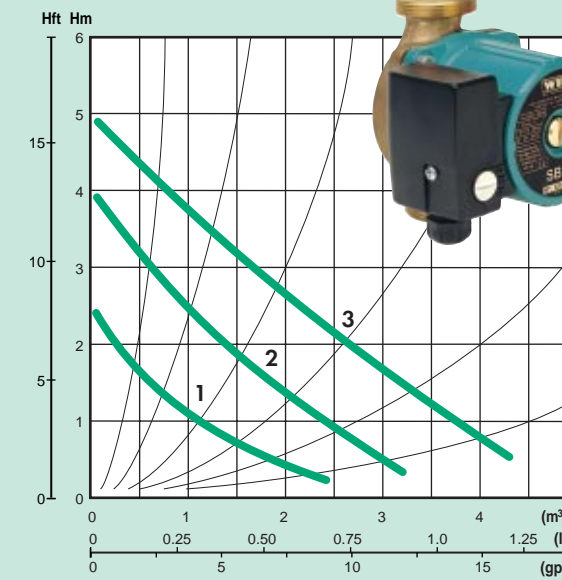
Maximum Working pressure 10 bar (145 PSI) 101.3 mwg  
 Water temperature range -10° to +110°C (14° to 230°F)  
 Maximum ambient air temperature 50°C (122°F)



Note: The SB60 is supplied with the terminal box in the 12 o'clock position

Pump type	G	DN	mm						Weight Kg
			l0	a	l1	b1	b3	lg	
SB 5	1"	3/4" BSPM	130	34	96	73.4	46	210	2.16
SB 30	1 1/2"	1" BSPF	130	36	96	77	46	180	2.54
SB 30G	1 1/4"	3/4" BSPF	150	36	96	77	46	200	2.56
SB 60	1 1/2"	1" BSPF	180	36	109	50	46	230	2.94

**SB30/SB30G**



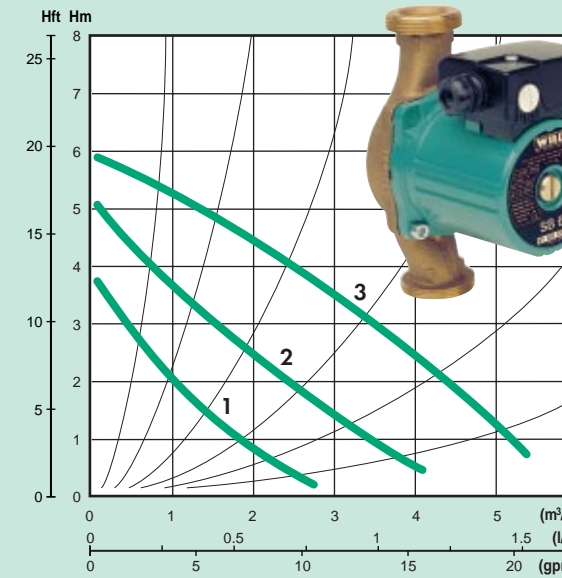
Switch (position)	Speed (rpm)	Power Input (W)	F.L.C (A)	O/L (A)	Capacitor μF (V.c.r.)
1	1000	45	0.20	-	2.6
2	1450	66	0.29	-	
3	1950	89	0.39	-	

Minimum Positive Static Head	
Temperature (T max.)	65°C 110°C
	0.5m 10m

Minimum positive static head (m) at suction port of pump to avoid cavitation noise at +40°C ambient and water temperature T max.

Available with 120mm or 150mm port to port fitting

**SB60**



Switch (position)	Speed (rpm)	Power Input (W)	F.L.C (A)	O/L (A)	Capacitor μF (V.c.r.)
1	1150	70	0.32	-	2.6
2	1650	102	0.46	-	
3	2300	114	0.50	-	

Minimum Positive Static Head	
Temperature (T max.)	65°C 110°C
	0.5m 10m

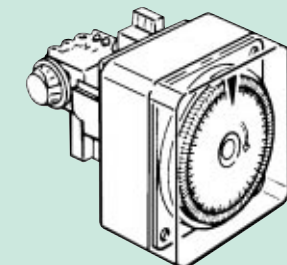
Minimum positive static head (m) at suction port of pump to avoid cavitation noise at +40°C ambient and water temperature T max.

**SB Range of Bronze Circulators**



- WRc approved
- Suitable for new and replacement
- Condensation proof design as standard (-10°C to +110°C)
- Unique hollow shaft and sintered bronze filter ensures long, trouble free operation
- Non overloading motor
- Optional plug in timer for Legionellae protection

**Domestic Hot Water Timer Module S1R-h**



**Description**

Automatic timer-programmed ON/OFF control of domestic hot water circulating pumps at pre-set time periods with 24 hour timer

**Features**

- Timer-programmed ON/OFF
- 24 hour timer (quarter hour switch intervals) to switch the pump at pre-programmed times

**Technical Data**

Supply voltage:	230V, 50Hz
Protection:	IP31
Max. Ambient temperature:	40°C
Weight:	0.2kg

Note: When using the plug-in timer only max. speed is available

Also available:-

**Switchbox timer module (SK601)**

Wall mounted automatic time-actuated ON/OFF control

**Contact box (SK602)**

