Belgravia Supreme Plus Fan Convector

The SPC Belgravia Supreme Plus range is based on the range of Belgravia Supreme Fan Convectors and incorporates a fresh air inlet spigot and motorised damper allowing the unit to provide both space heating and ventilation.

The specially designed damper is operated via a mechanism which simultaneously closes the room inlet grille when outside air is admitted. This outside air is treated by the heat exchanger prior to release to the space, preventing the possibility of draughts and offsetting the ventilation load at source.

Units can be wall or floor mounted, all units have the fresh air spigot in the back plate. Floor mounted units have the option of a plinth which can be ordered with the unit to cover pipework.

Construction

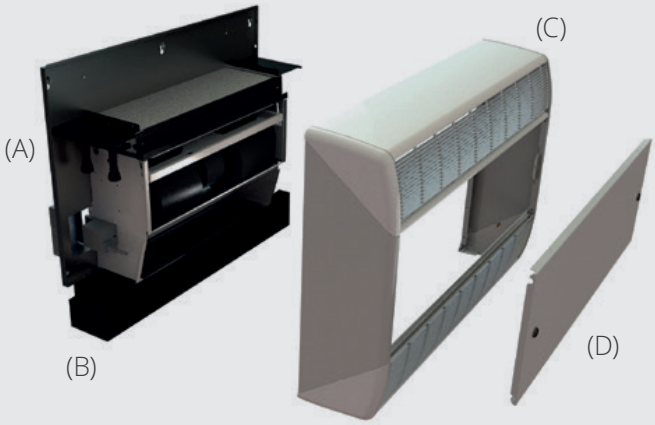
All Belgravia Supreme Plus units are composed of four basic parts:

A - Back plate assembly – including fans, heat exchanger, pipework and electrical connections. This also incorporates the fresh air spigot, damper and actuator

B - Plinth – optional for floor mounted units

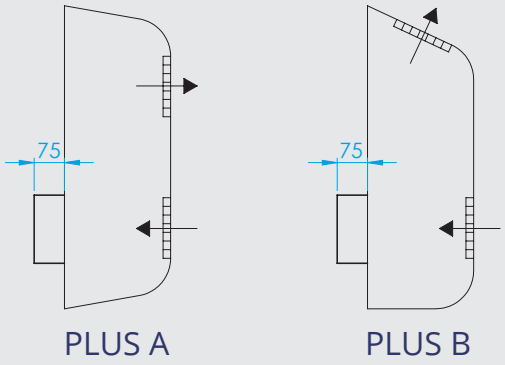
C - Drop-over casing – powder coated as standard in white RAL 9010, black grilles optional. A two tone grey casing is also available with top, bottom and grilles to RAL 9002 and front and sides to RAL 7044

D - Access panel – powder coated white RAL 9010 as standard, RAL 7044 option available. Tamperproof allen fixings as standard, locks are available as an option



Sizes and Styles

Two styles of Belgravia Supreme Plus units are available, each with various models. All styles can have left-hand or right-hand coil connections with top or bottom pipe entry. The styles are shown in the drawing opposite. Maximum dimensions and weight for each model are shown in the table below. Standard airflow is in through the bottom grille and out through the top. Units can be arranged with reversed airflow, but must be specified when ordering.



Model	SPR 40	SPR 60	SPR 90	SPR 150
Length (mm)	800	1000	1300	1600
Height (mm)	775			
Depth (mm)	235			
Maximum Weight (kg)	36	46	51	57
Spigot Width (mm)	650	850	1150	1450
Spigot Height (mm)	155			

Performance Data

Speed	High				Medium				Low			
Unit size	Airflow (l/s)	Output (kW)	Water flow rate (l/s)	Pressure Drop (kPa)	Airflow (l/s)	Output (kW)	Water flow rate (l/s)	Pressure Drop (kPa)	Airflow (l/s)	Output (kW)	Water flow rate (l/s)	Pressure Drop (kPa)
SPR40	140	5.8	1.1	0.14	112	5.0	0.8	0.12	89	4.2	0.6	0.10
SPR60	236	9.3	3.0	0.22	172	7.3	1.9	0.17	105	5.2	1.0	0.12
SPR90	317	13	6.3	0.31	231	10.3	4.3	0.25	120	6.8	1.9	0.16
SPR150	329	15.9	10.4	0.38	289	14.6	9.0	0.35	180	10.7	4.9	0.25

Noise Data

Fan setting		High	Medium	Low
Model	SPR 40	45	38	32
	SPR 60	45	41	35
	SPR 90	43	37	32
	SPR 150	45	44	39

1. NR levels are based on a room volume that would normally be heated by a single unit of each size shown
2. Reverberation time of the room is taken to be 0.4 seconds.
3. The listener is assumed to be standing in the middle of the room
4. The unit is assumed to be wall mounted

Electrical Data

Fan setting		High			Medium			Low		
Performance		Airflow (l/s)	EC Power Draw (W)	EC SFP (w/l/s)	Airflow (l/s)	EC Power Draw (W)	EC SFP (w/l/s)	Airflow (l/s)	EC Power Draw (W)	EC SFP (w/l/s)
Model	SPR 40	140	27	0.19	112	16	0.14	89	11	0.12
	SPR 60	223	84	0.38	184	53	0.29	108	15	0.48
	SPR 90	317	73	0.23	231	34	0.15	120	18	0.15
	SPR 150	329	80	0.24	289	58	0.20	180	22	0.12

Accessories & Options

The units are designed such that the fresh air inlet damper is controlled independently of the fan convector heater. The damper would normally be opened to fresh air via a signal from a central control system (BMS), by others. In turn, the signal to the controller will be from a CO2 or occupancy sensor, opening the damper only when the level of pollutants requires their dilution. The units can also be used in summer for free air movement when the boiler/heat pump is not operating.

All unit functions can be controlled remotely by a central system, in which case the units may be supplied with relays or volt-free contacts which will accept signals to control the fan on/off, change speed and flip between summer/winter mode. Damper operation can be arranged to be via central control, this would be by others. The units can, if required, be controlled locally, in which case the units are equipped with a variety of switches and thermostats, as shown in the table.

Accessories			
	Control	Function	Supreme
THERMOSTATS	LTC	Low water temperature fan cut-out	✓
	ALTC	Adjustable low water temperature fan cut-out	✓
	T1*	In-built on-off control	✓
	T2*	In-built change speed control	✓
	RT1	Remote mounted on-off control	✓
	RT2	Remote mounted change speed control	✓
	TRT1	Tamper-proof on-off stat	✓
	TRT2	Tamper proof change speed control	✓
	MODULO	Proportional touchscreen controller	✓
SWITCHES	RS1	On-off rocker switch	✓
	RS2	Summer-winter switch	✓
	RS3	Three speed rocker switch	✓
	RS12	Combined on-off / summer-winter rocker switch	✓
	RS13	Combined on-off / change speed rocker switch	✓
	RS23	Combined summer-winter / change speed rocker switch	✓
	RS123	Combined on-off summer-winter & change speed rocker switch	✓
BMS	BMS1	Relay for remote enable/disable signal	✓
	BMS2	On/off and speed control via remote 0-10V signal from BMS	✓
ELECTRICAL CONNECTIONS	FSB	Fuse spur box	✓
	CCB	Customer connection box	✓
AIR SIDE OPTIONS	RAF	Reverse air flow	✓
	AF3	Air filter covering the inlet grille fitted to the motor plate	✓
CASE OPTIONS & ACCESSORIES	SPF	Special paint finish	✓
	P	Plinth	✓
	LAP	Lockable access panel	✓
	TAP	Tamper proof access panel	✓
	EXTC	Extended casing	✓
	BOX IF	Metal flush mounting box for single rocker switch	✓
	BOX IS	White plastic surface mounting box for single rocker switches	✓
	BOX 2F	Metal flush mounting box for combined rocker switches	✓
	BOX S2	White plastic surface mounting box for combined rocker switches	✓
	INVCS	Inverted casing	✓
	WM	Wall mounted stiffeners	✓
LOW SURFACE TEMPERATURE	LST	Low surface temperature unit	✓

*Not available on RAF or INVCS/RAF units

Standard Engineering Specification

The Belgravia Supreme Fan Convector shall be manufactured by S & P Coil Products Limited. The heater shall be suitable for the duties as described in the literature, dependent on the model selected. The quantities and model references shall be indicated in the schedule, with constructional features complying with the specification below.

Case
The case shall be manufactured from aluminium extrusions and end-castings, with medium gauge mild steel front and side panels. The detachable access panel shall be fully trayed and retained by two tamper-proof fasteners. The internal chassis shall be constructed from medium gauge mild steel. The casing locates into angled slots on the internal chassis and is locked in place with standard bolts.

Finish
The case and internal chassis components shall be degreased and treated with an approved priming process, followed by final coats of colour-specified powder-coat finish.

Grilles
Integral grilles shall be of linear pattern complying with BSEN 60335, manufactured from extruded aluminium with treated finish.

Attachable Plinth
The plinth shall be manufactured from medium gauge mild steel, treated and paint-finished to suit.

Filters
Filters shall be washable-type Bondina P15/150 non-woven polyamide, or equivalent, bonded with synthetic resin and rated at EU2 arrestance complying with BSEN 779. Filters should be removed for cleaning.

Heat Exchangers
The heat exchanger shall be of block fin construction, comprising aluminium fins mechanically bonded to copper primary tubes brazed into copper headers having BSP female flow and return connections at the same end, and rated in accordance with BS 5141. 1/8" BSP air bleed and drain connections are provided as standard.

Test Pressure
The heat exchanger shall be tested to 22 bar (2,200kPa) air under water.

Working Pressure
All heat exchangers are suitable for a maximum working pressure of 10 bar (1,000 kPa).

Motor Plate, Fan & Motor Assembly
The motor plate assembly shall be readily withdrawable for ease of maintenance, being resiliently mounted on guide rails. Ceiling mounted units shall have motor plates fixed by Nylock retaining nuts.

Fans
The fan(s) shall be of the double inlet, centrifugal type with forward curved blades. The impeller and scroll shall be from galvanised sheet steel, and the impeller shall be directly mounted on the external rotor motor. One or two fans shall be used according to size.

Motors
The motor shall be of the electronically commutated external rotor type with inbuilt electronics enclosure. The motor incorporates maintenance free ball bearings. Motors shall be IP44 and insulation class B rated. Rotational speed is controlled via a 0 to 10V signal to the terminal block of the rotor.

Damper Actuator
230V, open/close actuator with a 5Nm torque rating. Power consumption 1.5W. Damper to be controlled by others. Terminal block supplied for customer wiring

Wiring & Controls
Provision shall be made for internal wiring with selected control options, and an internally-mounted customer connection box shall be provided for interfacing remote options to the unit. All internal wiring shall be tri-rated heat-resistant cable. Unit motors are suitable for operation with a standard single phase 230V/50Hz supply.

Packaging
Each Fan Convector shall be dispatched in a purpose-made carton, clearly marked with the unit model reference and instructions.

CE Marking
The Fan Convector shall comply with all relevant EU directives currently in force.

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