

## Technical Data Sheet

January 2010

The new  
SF60 Range  
Condensing  
Ultra Low NOx

# SUPA flo

Condensing Gas Fired Water Heater

- Flue installation
- Electrical wiring data



Working towards  
a cleaner future



# SUPA flo

Condensing Gas Fired Water Heater

## Flue installation

The SF60 SUPA flo and SUPAheat range of water heaters and boilers are both modulating pre-mix, blown gas condensing heaters. A recognised installer in accordance with the applicable national and local regulations must install the flue system. The flue connection is located on the top of the heater at the rear and has a push fit seal ready to accept the correct diameter flue (see table below for size). The flue connection diameter of the unit has been designed such that the speed of the flue gases will always be approximately 6 m/s max. As a result of the pre-mix burner fan, an overpressure is built up within the unit. This overpressure is sufficient to overcome a maximum amount of flue

resistance within the secondary flue (see table below). If the room sealed option is used then the resistance within the air intake duct is to be added to the sum total of the maximum flue resistance. This high efficiency unit will produce condensation both within the unit and in the secondary flue. The secondary flue system must be designed to discharge condensation and constructed of a corrosion resisting material such as single-wall 316 stainless steel (for example Selkirk Supra or Omega SW), NB. flued into a brick flue stack is not permitted. The unit is supplied with a condensate trap so the condensation within the secondary flue can be allowed to drain into the unit. Alternatively, the

flue will need its own condensate drain and trap.

- BS 5440** Part 1 1990 Specification for installations of flues
- BS6644** Installation of gas – flues hot water boilers of rated inputs between 60kW – 2MW
- IM/11** Flues for commercial and industrial gas installations
- IM/22** Installation guide for high efficiency condensing boilers
- Clean Air Act** 1993 Clean Air Act Memorandum

Heater Type	Heater Output	Flue Outlet Diameter	Flue Gas Temperature	Flue Gas Volume Max/Min	Permissible Flue Resistance Max/Min	CO <sub>2</sub> Value Max / Min
	kW	(mm)	°C	m <sup>3</sup> /h	Pa	%
SF61	142	150	80	238 / 40	160 / 10	10.2 / 9.4
SF62	190	150	80	318 / 69	160 / 10	10.2 / 9.4
SF63	237	200	80	397 / 69	200 / 10	10.2 / 9.4
SF64	285	200	80	477 / 69	200 / 10	10.2 / 9.4
SF65	380	250	80	636 / 134	200 / 10	10.2 / 9.4
SF66	475	250	80	795 / 134	250 / 10	10.2 / 9.4
SF67	539	250	80	901 / 134	250 / 10	10.2 / 9.4

Readings have been taken at the flue outlet of the appliance at 100% load

### Multiple installations

On multiple installations with forced draught units, it is recommended to install each appliance on individual flues (see fig. 1). However, if this is not possible they can be connected into a common flue stack. Usually this is achieved by flueing each unit separately to the vertical stack. If a common header must be used then the unit is connected into the flue header by angle of 45° via a swept tee to prevent the burner draught affecting the other appliances. The flue header and stack must be sized correctly to prevent any adverse draught problems affecting the

other applications and their internal pressure switches, i.e. the least line of resistance for the products of combustion will be into the flue header and the vertical stack to the outside.

**If a horizontal flue header is used it is standard practice to step-up the diameter of the flue header as it meets each individual flue branch.**

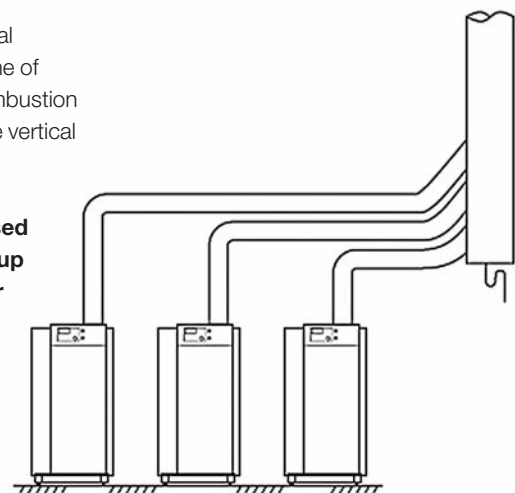


Fig. 1 Multiple installations

**Note: All electrical work carried out must be in accordance with IEE regulations.**

**Since it is our policy to strive for progressive design and performance all our equipment is subject to alteration without notice.**

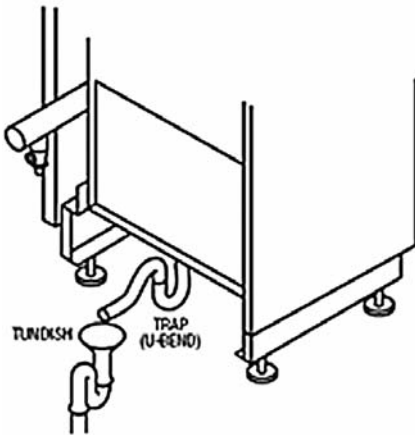


Fig. 2 Condensate discharge

### Condensate discharge

The heater will produce condensation during operation that must be discharged to drain or a collection reservoir with a pump and a water level switch. A condensate trap (U-bend) is supplied to permit the discharge of condensate and provide a water trap to prevent flue gases from entering the plant room from the combustion trap is a plastic U-bend that

is fitted directly to the underside of the heater and provides a 22mm Ø pipe at the discharge end of the fitting. This must run into a plastic or stainless steel drainpipe due to the corrosive nature of the condensate. A tundish or air break is recommended between the trap and drainpipe for inspection and maintenance (see fig.2 left).

### Optional room sealed facility

The SF60 can be supplied as a room sealed option that enables you to supply the combustion air via an air duct direct to the unit. This air supply pipe may be constructed of insulated stainless steel or aluminium, plastic or flexible aluminium (taking into account the added resistance). The total resistance of the air supply duct and the secondary flue may not result in a pressure drop exceeding the maximum permissible chimney resistance (see table). If room sealed, open tees or draught stabilisers are **not** permitted. This option could be used if the free combustion air within the plant

room is contaminated or a dusty environment; alternatively, if there is a need to make the plant room more secure, i.e. no large ventilation grills are permitted, please see the table below that indicates the air supply duct connection sizes to the heater. This connection is found to the rear of the unit, to the right of the secondary flue outlet. On multiple installations, please use individual air ducts.

When a horizontal air duct is used, please ensure that a suitable inlet grill is used and the height from the ground is maintained to prevent any ingress of snow, rain and dust (see fig. 3). Roof top air inlets are also acceptable with the

SF60 room sealed option. Again, assuming the roof is flat, ensure that a suitable minimum height of 300mm above the roof is maintained to prevent snow entering the air supply duct and that a suitable rain cap is fitted. To prevent any recirculation of combustion products into the air duct the horizontal difference between the secondary flue and the air duct must not be less than the width of the unit. Also, the secondary flue must terminate at least 1000mm above the roof space and at least 700mm above the air duct intake (see fig. 4) and a suitable flue terminal must be used.

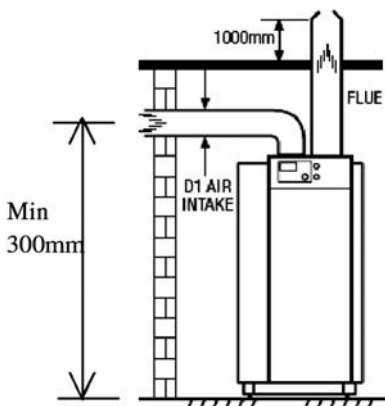


Fig. 3 Horizontal air intake

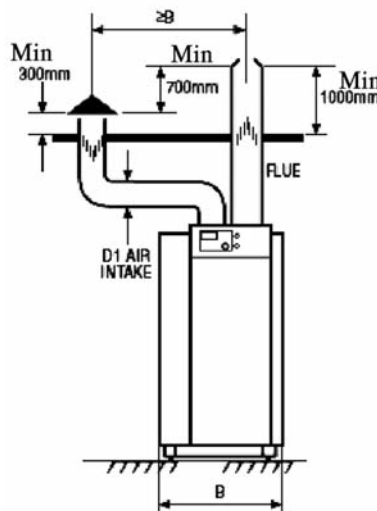


Fig. 4 Vertical air intake

### Air intake duct sizes

Model Type	Air Intake Diameter D1 (mm)
SF61	130
SF62	150
SF63	150
SF64	150
SF65	200
SF66	200
SF67	200

# SUPA flo

## Condensing Gas Fired Water Heater

# Wiring data

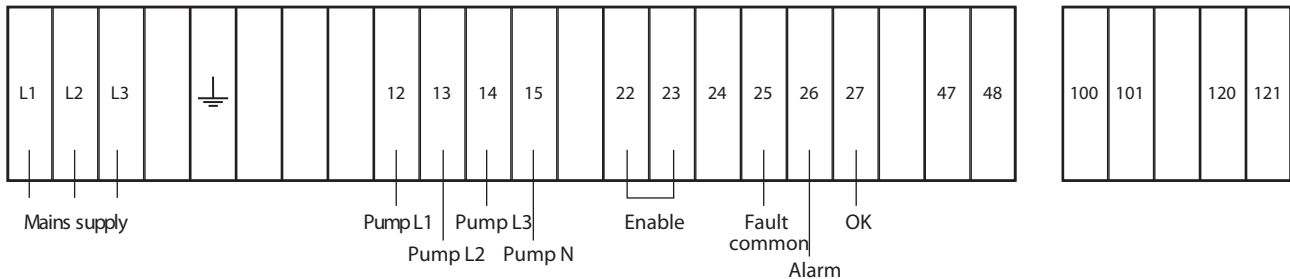
Note: All electrical work carried out must be in accordance with IEE regulations.

Since it is our policy to strive for progressive design and performance all our equipment is subject to alteration without notice.

The SF60 SUPAflo water heater requires a continuous secured 240 volt 10 – amp 50 HZ single phase. Please note that the SF66 and SF67 models require a 415 volt 3-phase supply for the primary circulator. Also the supply to each water heater must have a 10-amp fuse protection and

an accessible local isolator with a secured earth. It is important to observe polarity of the supply to avoid problems with the flame detection circuits. The table below provides details of the electrical loading of each model type. The main electrical and BMS controls are all connected into the

main terminal strip located at the front of the heater and housed behind the main front cover. All cables should enter the heater through the rear cable glands and travel through the cable tray to the front terminal rail.



- Terminal N – L1 240 volt 10-amp fused continuous supply. Please note that the SF66 and SF67 model heaters are supplied with a 3-phase pump and will require a three phase supply on terminals L1, L2 and L3.
- Terminal 22 & 23 Enable control. By opening or closing a link wire across these terminals will enable and disable the heater. The link wire is a 240v circuit. A link wire is required to be placed across these terminals to allow the heater to operate.
- Terminal 25, 26 & 27 Alarm signal terminals. Terminal 25 is a common, terminal 26 is the outward alarm signal and terminal 27 is the outward OK signal. The outward lockout signal will appear once the heater has been at lockout for over 6 minutes.
- Terminal 12 Primary circulator live power supply. Please note that the SF66 and SF67 models are supplied with a 3-phase primary circulator and therefore terminals 12, 13 and 14 are used for the 415 v supply to the circulator.
- Terminal 15 Primary pump Neutral supply.

### Heater and Circulator Electrical Data

Model Type	Circulator Type	Pump Voltage	Heater Watts Min/Max	Heater & Pump Watts Min/Max
SF61	UPS 32-80 B	240 v 1-Phase	158 / 43	170 / 90
SF62	UPS 32-120 B	240 v 1-Phase	200 / 35	190 / 120
SF63	UPS 40-120 B	240 v 1-Phase	230 / 35	380 / 210
SF64	UPS 40-120 FB	240 v 1-Phase	260 / 35	380 / 210
SF65	UPS 50-120 FB	240 v 1-Phase	470 / 61	530 / 300
SF66	UPS 65-120 FB	400 v 3-Phase	650 / 61	720 / 380
SF67	UPS 65-120 FB	400 v 3-Phase	770 / 61	1150 / 600



Baxi Commercial Division  
Wood Lane, Erdington, Birmingham B24 9QP  
Email: andrews@baxigroup.com  
www.andrewswaterheaters.co.uk

Sales:  
**0845 070 1056**  
Technical:  
**0845 070 1057**

