

# PEGASUS F3

GAS FIRED ATMOSPHERIC  
ELECTRONIC VERSION  
119 - 289 kW

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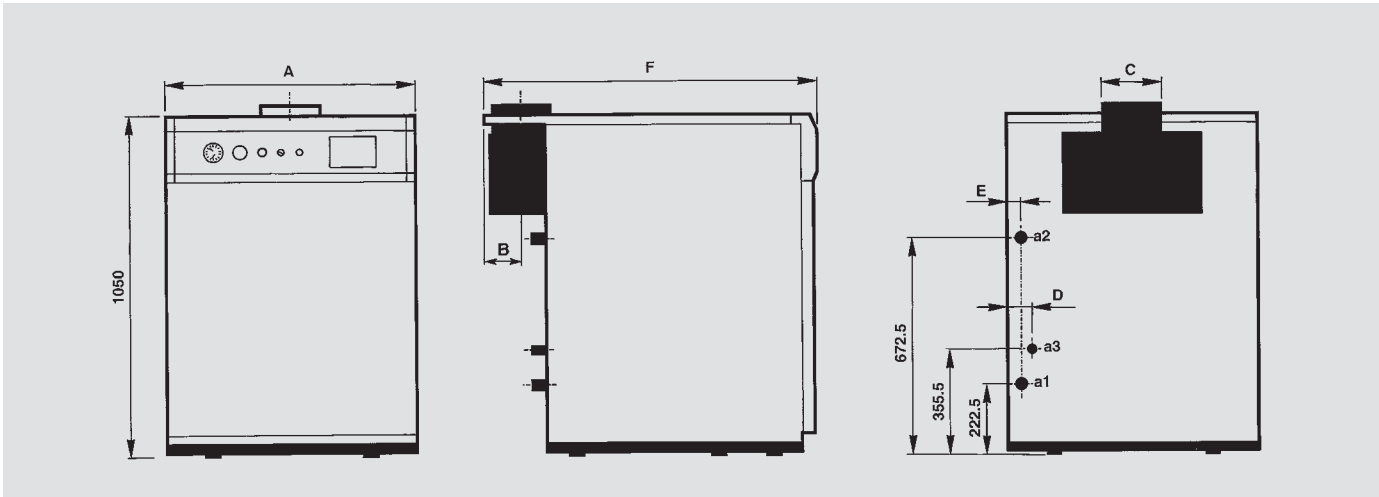


**FERROLI**

**COMMERCIAL**

# PEGASUS F3

## GENERAL DESCRIPTION



The PEGASUS F3 range of atmospheric natural gas-fired boilers are constructed of cast iron finned sections joined by steel nipples and tie rods. Each boiler includes an integral draught diverter giving all models a low profile silhouette. PEGASUS F3 boilers are designed for use with fully pumped indirect heating systems up to a maximum working pressure of 4 bar and flow temperature of 82°C. Standard controls and instruments include control thermostat, limit (manual reset) thermostat, lockout indicator lamp, ON/OFF switch, combined thermometer and altitude gauge. The PEGASUS F3 boiler is a fully automatic ignition version that provides flame rectification monitoring. All gas, flow and return connections are situated at the rear of the boiler. For ease of maintenance all cleaning of the flueways and burner servicing is carried out from the front of the boiler, which means that the side clearances are kept to a minimum making this boiler particularly suitable for modular installations. The system electrical and associated controls should be installed so that the boiler is never allowed to fire when there is no demand for heat. An LPG version is also available. The PEGASUS F3 range is normally supplied full assembled, however please contact Ferroli commercial sale office for information on dismantled versions and site erection.

## TECHNICAL DATA

BOILER MODEL	OUTPUT		No. of sections	DIMENSIONS (mm)						CONNECTIONS			WEIGHT kg	WATER Content lt
	kW	BTU/h		A	B	C	D	E	F	a1	a2	a3		
PEGASUS F3 119	119	406,000	8	930	126	220	46	42	1050	2"	2"	1"	470	38
PEGASUS F3 136	136	464,000	9	1020	141	250	49	45	1050	2"	2"	1"	530	42
PEGASUS F3 153	153	522,000	10	1100	141	250	55	43	1050	2"	2"	1" 1/2	575	46
PEGASUS F3 170	170	580,000	11	1190	166	300	58	46	1050	2"	2"	1" 1/2	625	50
PEGASUS F3 187	187	638,000	12	1270	166	300	56	44	1050	2"	2"	1" 1/2	665	54
PEGASUS F3 221	221	754,000	14	1440	166	300	57	45	1050	2"	2"	1" 1/2	760	62
PEGASUS F3 255	255	870,000	16	1610	191	350	58	46	1100	2"	2"	1" 1/2	875	70
PEGASUS F3 289	289	986,000	18	1780	191	350	59	47	1100	2"	2"	1" 1/2	945	78

## BASE REQUIREMENTS

The boiler should stand on a load bearing non-combustible level base. Any plinth constructed must exceed the boiler plan area by not less than 80 mm overall.

## MODULAR APPLICATIONS

This boiler range, is particularly suited for modular applications since all servicing and flue cleaning is carried out from the front, so that side clearances are kept to a minimum. For further details please contact FERROLI commercial boiler sales office.

## INSTALLATION REQUIREMENTS

The PEGASUS F3 boilers should be installed in accordance with the relevant requirements of the building Regulations, Health and Safety Executive Regulation PMS, IEE Regulations and the Byelaws of the Local Authority and the local water company. Only Corgi registered installers should fit the PEGASUS boilers.

### British Standard Codes of Practice

**CP341.300-307:** Central heating by low pressure hot water.

**CP341.342:** Part 2 Centralised hot water supply.

**CIBSE Guide:** Reference sections B7, B11 & B13.

**IGE/UP/2:** Gas Installation pipework, boosters and compressors on Industrial and Commercial premises.

**BS6644:** Installation of gas fired hot water boilers rated inputs above 60 kW but not greater than 2 Mw.

# PEGASUS F3

## WATER FLOW RATES

BOILER MODEL	FLOW RATE	FLOW RATE	PRESSURE DROP	*MIN. FLOW RATE	*MIN. FLOW RATE	PRESSURE DROP
	at $\Delta t$ 11°C l/sec	at $\Delta t$ 11°C m <sup>3</sup> /h	at $\Delta t$ 11°C m/bar	at $\Delta t$ 20°C l/sec	at $\Delta t$ 20°C m <sup>3</sup> /h	at $\Delta t$ 20°C m/bar
PEGASUS F3 119	2.56	9.1	145	1.4	5.0	50
PEGASUS F3 136	2.9	11.2	200	1.6	5.8	60
PEGASUS F3 153	3.3	11.8	220	1.8	6.5	62
PEGASUS F3 170	3.67	13.0	234	2.0	7.1	68
PEGASUS F3 187	4.03	14.2	246	2.2	7.9	73
PEGASUS F3 221	4.76	17.0	270	2.6	9.2	85
PEGASUS F3 255	5.49	19.5	305	3.0	10.5	100
PEGASUS F3 289	6.23	22.0	360	3.4	12.0	108

\* In those installations where the minimum flow rate cannot be achieved then the fitting of a shunt pump is recommended.

## FLUE SYSTEMS

Flues should be designed and installed to effectively evacuate the products of combustion. For guidance consult BS6644 and British Gas Publication No. IM11.

## GAS REQUIREMENTS

BOILER MODEL	MAIN BURNER INJECTOR		PILOT INJECTOR		GAS RATE		INLET PRESSURE mbar			BURNER PRESSURE	
	Nat Gas	LPG	Nat Gas	LPG	Nat Gas m <sup>3</sup> /h	LPG kg/h	Nat Gas		LPG	Nat Gas mbar	LPG mbar
							Min	Max			
PEGASUS F3 119	3.5	2.15	0.4	0.24	13.8	10.2	15	23	37	13.3	36
PEGASUS F3 136	3.5	2.15	0.4	0.24	15.8	11.6	15	23	37	13.3	36
PEGASUS F3 153	3.5	2.15	0.4	0.24	17.9	13.1	15	23	37	13.3	36
PEGASUS F3 170	3.5	2.15	0.4	0.24	19.8	14.5	15	23	37	13.3	36
PEGASUS F3 187	3.5	2.15	0.4	0.24	21.8	16.0	15	23	37	13.3	36
PEGASUS F3 221	3.5	2.15	0.4	0.24	25.7	18.9	15	23	37	13.3	36
PEGASUS F3 255	3.5	2.15	0.4	0.24	29.6	21.8	15	23	37	13.3	36
PEGASUS F3 289	3.5	2.15	0.4	0.24	33.5	24.6	15	23	37	13.3	36

## VENTILATION

Safe, efficient, and trouble-free operation of conventionally flued gas boilers is vitally dependent on the provision of adequate supply of fresh air to the room in which the appliance is installed. Ventilation by grilles communicating directly with the outside, air is required at both high and low levels. The minimum free areas of these grilles must be in accordance with the table shown. The use of an extractor fan in the same room as the boiler (or in an adjacent room in communication) can, in certain conditions, adversely effect the safe operation of the boiler. Where such a fan is already fitted, or if an extractor fan is likely to be installed at later date, then advice of the gas supplier should be obtained. Tests for spillage of products from the draught diverter when the extractor fan is running and all doors and windows are shut should be carried out after installation. If spillage is detected, the area of permanent ventilation must be increased.

Total gross input rating of boilers	Position of Air vents	Air vent areas (Air direct from outside)
Up to 2 MW	High Level	270 cm <sup>2</sup> plus 2.25 cm <sup>2</sup> per kW in excess of 60 kW total rated input
Up to 2 MW	Low Level	540 cm <sup>2</sup> plus 4.5 cm <sup>2</sup> per kW in excess of 60 kW total rated input

For further detailed recommendations consult BS5440 Part 2 2001 and BS6644

## WATER TREATMENT

Water contained in all heating and indirect hot water systems, particularly open vented systems, requires basic treatment. It is wrong to assume that because boilers are operating in conjunction with what is an apparently closed circuit, an open vented system will not under normal circumstances allow damage or loss of efficiency due to hardness salts and corrosion once the initial charge of water has been heated several times. One millimetre of lime reduces the heat conversion from flame via metal to water by 10%. In practice the accumulation of these salts is liable to cause noises from the boiler body or even premature boiler failure. Corrosion and the formation of black iron oxide sludge will ultimately result in premature radiator failure. Open vented systems are not completely sealed off from the atmosphere because it is necessary to provide a tank open to atmosphere if proper venting and expansion of system water is to be achieved. The same tank is used to fill the systems with water and it is through the cold feed pipe that system water expands into the tank when the boiler passes heat into the system. Conversely, when the system cools, water previously expanded is drawn back from the tank into the system together with a quantity of dissolved oxygen. Even if leakage from the heating and hot water system is eliminated there will be evaporation losses from the surface of the tank. Depending on ambient temperature these may be high enough to evaporate a large portion of the system water capacity over a full heating season. Corrosion will always occur within a heating/hot water system to a greater or lesser degree irrespective of water characteristics, unless the initial fill water from the mains is treated. Even the water in closed systems will promote corrosion unless treated.

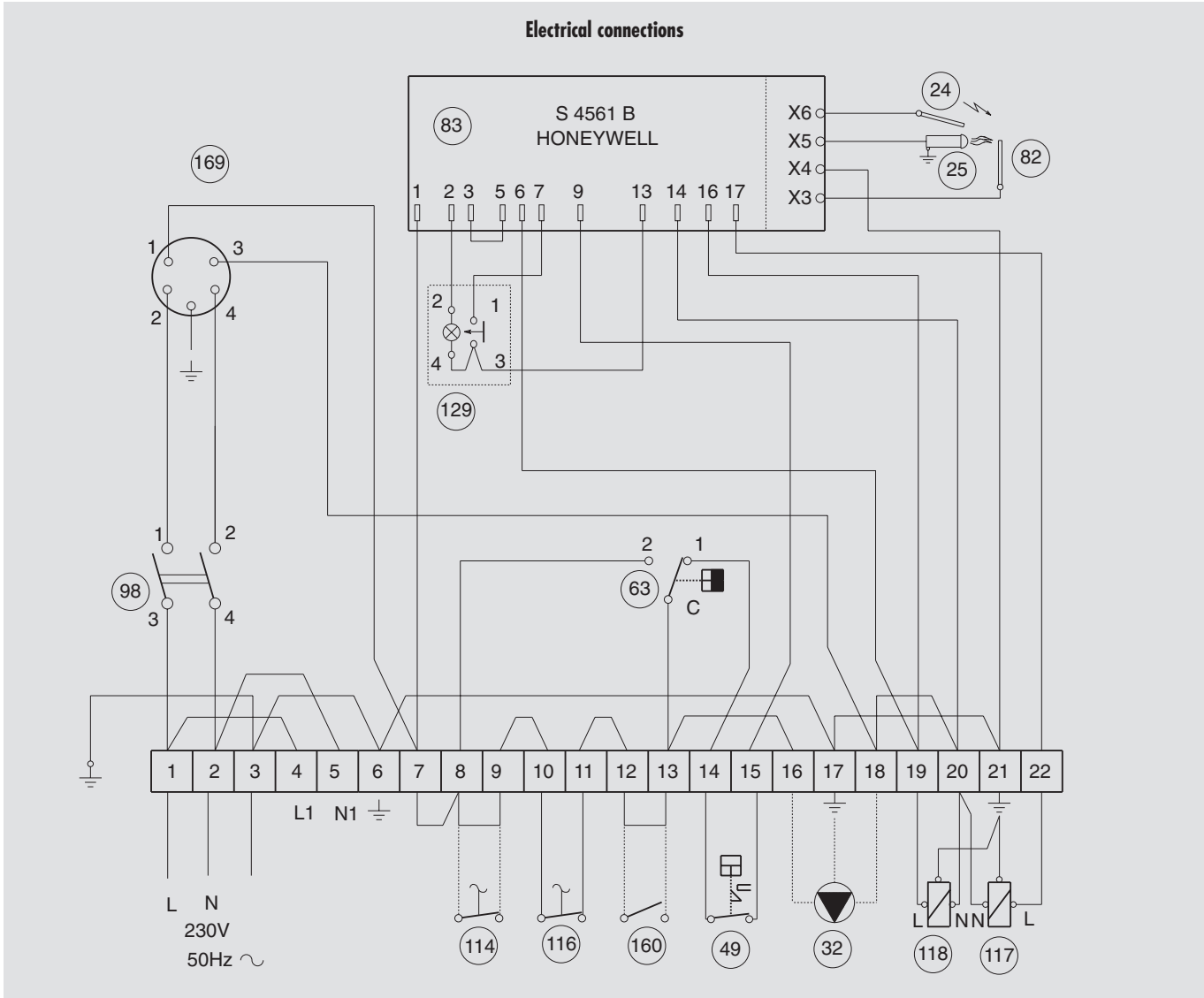
## COMMISSIONING

All PEGASUS F3 should be commissioned by fully trained engineers. This can be arranged by FERROLI who will be pleased to quote on request.

## WIRING AND CONNECTIONS DIAGRAM

Electrical connections should be performed according to the diagrams shown here.

- Connect the boiler to a single-phase, phase neutral, 230V ~ 50Hz power supply through a standard terminal block or outlet with 2A max. fuses connected between the boiler and the power supply. Remember that the boiler should always be provided with a good earth.



- |                                    |  |
|------------------------------------|--|
| 24 Spark electrode                 | 98 Boiler ON/OFF switch                  |
| 25 Pilot burner                    | 114 Water pressure switch (not provided) |
| 32 Pump                            | 116 Gas pressure switch                  |
| 49 Limit thermostat (manual reset) | 117 Pilot light gas valve                |
| 63 Boiler control thermostat       | 129 Ignition lockout reset button        |
| 82 Ionisation electrode            | 160 Auxiliary contact                    |
| 83 Ignition PCB                    | 169 Suppression filter                   |

**NOTE:** Dotted lines indicate connections to be performed during installation.

Terminals L1, N1, 6 are reserved for connecting an electronic compensator (not available in UK).

The pilot gas valve (part 118) also acts as a safety shut off valve.

The pump shown (32) should be switched via an intermediate relay particularly when the pump electrical characteristics exceeds 2 amp start current. In any event a pump over-run device is recommended to dissipate residual heat from the boiler.

# PRODUCT RANGE

## BOILERS

### WALL-MOUNTED BOILERS

With or without water production, these high performance, electronic and fully modulating systems are suitable for both hot water and heating applications. Models with outputs from 6 kW to 35 kW.

### CAST IRON BOILERS ATMOSPHERIC GAS FIRED

High performance, with or without hot water production; models with outputs from 10 kW to 289 kW.

### CAST IRON BOILERS PRESSURE JET OIL AND GAS FIRED

High performance, with or without hot water production, some models operate at low temperature. Models with outputs ranging from 17 kW to 650 kW.

### HOT WATER STORAGE CALORIFIERS

From 100 to 500 litre capacity.

### WELDED STEEL BOILERS

High performance models with outputs ranging between 87 kW and 10,465 kW for hot water, superheated hot water and steam up to 15 bar.

### SOLID FUEL BOILERS

These units are ideal for burning wood chips and fluid fuels (2 fuels) with output ranging between 174 kW and 6,990 kW for production of hot water superheated hot water and steam up to 15 bar.

## AIR-CONDITIONING

A complete range of products for air-conditioning ranging from mobile units, single and multisplit units, with chillers up to 143 kW.

## WHIRLPOOL BATH

An exclusive range of whirlpool and showers complete with accessories are available in 4 colours.

**ALL FERROLI BOILERS ARE CE APPROVED AND CONFORM TO THE RELEVANT EUROPEAN STANDARDS.**