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FiREBiRD

HEATING SOLUTIONS

PRODUCT GUIDE

Solar Thermal Systems

Condensing Oil Boilers

Multifuel Inset Stoves

Biomass & Backboilers

Working towards a greener planet

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FIREBIRD
HEATING SOLUTIONS

Firebird is proud to declare over 30 years manufacturing in the heating industry, developing some of the most renowned products on the market. More recently, the company has advanced into renewable energy systems and combined efficient heating systems.

From the robust elite manufacturing process, through to the dedicated sales, technical and training teams, Firebird can guarantee the highest quality product and service. In addition, our products are rigorously tested and approved to all relevant European and national standards.

Firebird continues to expand its product range. In 2012 we launched the Multifuel Backboiler Inset Stove, with up to 81% efficiency. This year we are launching the Multifuel Dry Inset Stove. Both stoves are 100% Irish made. Other new products this year include the Solid Fuel Heat Exchanger and the Junction Buffer 2-4 Box.

Our technical team are always on hand to advise on the best heating system for your domestic or commercial premises. We have the capability to integrate all our products to one combined system, reducing your energy bills by at least 20% per annum.

Firebird has recently completed a number of commercial and domestic cascading, multi functional systems. Please contact our technical department for more information on these projects.
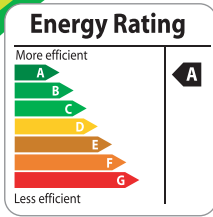
Accreditations:
Firebird is ISO-9001 accredited and a long-standing member of OFTEC.

In addition, Firebird products enjoy some of the following accreditations:

Enviromax
Condensing Boilers

Flow.

Return.

Condense Drain Baffle.

Condense Drain Float.

Condense Trap.

Features & Benefits
SEDBUK Band A Efficiency
*   A modern, truly condensing boiler that delivers the efficiency promised.
*   Up to 25% savings in fuel consumption compared with non-condensing boilers.
*   Lower emissions and carbon dioxide.

Designed as a condensing boiler - not an "add-on"
*   The condensing heat exchanger is an integral part of the boiler shell.
*   Condenser is located at the bottom of the appliance. There is no fear of corrosion.
*   Easy to install and service.

Robust design
*   Enviromax™ boilers are built from premium grade steel with a minimum 4 mm gauge.
*   All indoor models have a heavy duty casing with a polyester-coated finish to protect the boiler from normal wear and tear.

Widest range on the market
*   With up to 60 models available, we have something to suit every customer. Ranging from 12kW to 100kW.
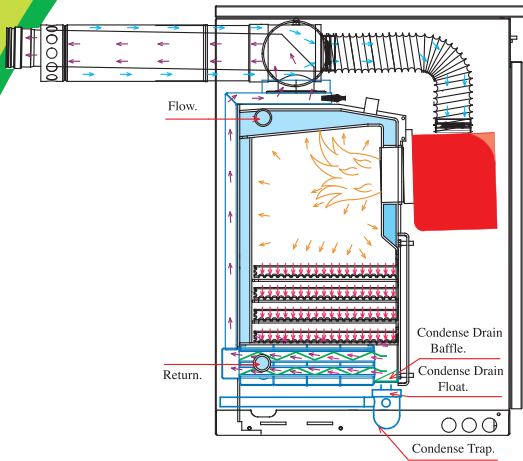
Installer Friendly Features
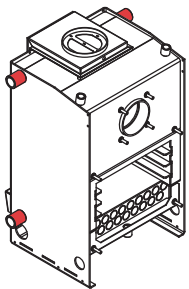
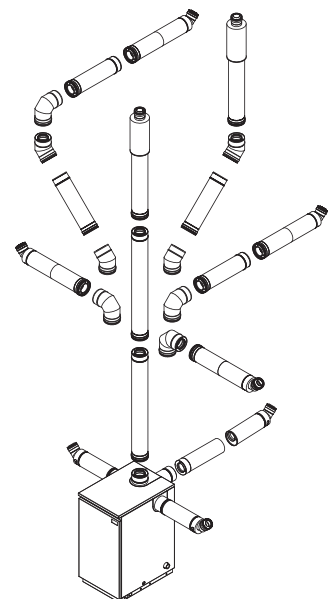*   4-tapping points on most boiler models - increases installation options.

*   Front service access - easy access to common service parts.

*   7-pin plug - simplifies wiring.

*   Optional condensate pump - lifts up to 5m - perfect solution where natural gradient is not available.

*   Multi-directional flue options - increases installation options.

Popular

Ideal for installation in a dedicated boiler house, garage or outbuilding.

Features

- Patented heat exchanger design.
- Built from premium quality steels.
- Compact design.
- 4-tapping points for ease of installation.
- Sturdy well insulated casing minimise heat loss.
- High performance Riello RDB burner.
- SEDBUK Band A Efficiency.
- Eight models in outputs from 12kW to 100kW.

Up to 100 kW

Specification

Model Enviromax	Output kW	Sales Code	Weight kg (incl. burner)	Dimensions(mm) H	W	D	BURNER DEPTH	C	E	F	G
Popular C12-18	12-18	CPO018RDB	99	684	344	381	202	164	100	122	502
Popular C20	15-20	CPO020RDB	107	684	441	381	202	164	100	122	502
Popular C26	20-26	CPO026RDB	112	684	441	381	202	164	100	122	502
Popular C35	26-35	CPO035RDB	115	684	441	381	202	164	100	122	502
Popular C44	35-44	CPO044RDB	182	815	518	531	202	154	96	123	620
Popular C58	44-58	CPO058RDB	190	815	518	531	253	154	96	123	620
Popular C73	58-73	CPO073RDB	210	873	528	525	253	155	96	123	670
Popular C100	80-100	CPO100RDB	300	1057	625	744	253	139	111	130	832

Dimensions (mm)
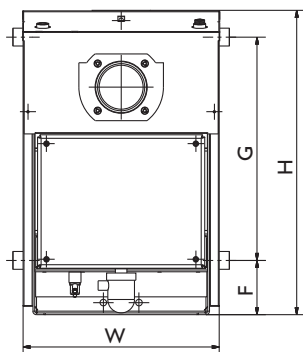
Front View
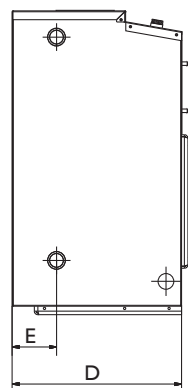
Side View
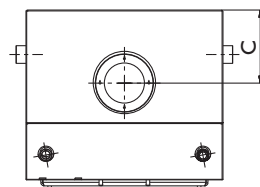
Top View

Heatpac & Slimline Heatpac

The Enviromax Heatpac range does not need to be housed in a building, thereby reducing cost and labour. The boilers come with removable sides for easy access to any part of the unit. Piping may be carried out from the back or from underneath.

Features

Heatpac
- High quality weather-proof PVC-coated casing (outputs up to 35kW).
- Fully insulated to prevent heat loss.
- Patented heat exchanger design.
- 4-tapping points for ease of installation.
- Fitted with frost protection stat.
- Whisper quiet operation.
- Stainless steel terminal guard.
- High performance Riello RDB burner.
- SEDBUK Band A Efficiency.
- Six models in outputs from 12kW to 73kW.

### Slimline Heatpac (as above plus the following)
- Only 465mm wide.
- Three models in outputs from 15kW to 35kW.

Temperature Control & High Limit re-set button

Burner Plug

Specification

Model Enviromax	Output kW	Sales Code	Weight kg	Dimensions (mm) H	W	D	C	A	I	J
Heatpac C12-18	12-18	CON018HPK	134	945	620	625	180	795	351	133
Heatpac C26	20-26	CON026HPK	154	945	720	625	180	795	351	133
Heatpac C35	26-35	CON035HPK	158	945	720	625	180	795	351	133
Heatpac C44	35-44	CON044HPK	244	1074	843	856	178	936	507	134
Heatpac C58	44-58	CON058HPK	250	1074	843	856	178	936	507	134
Heatpac C73	58-73	CON073HPK	280	1200	903	856	180	1039	507	134
Slimline Heatpac C20	15-20	CON020SLM	147	920	465	760	-	794	277	126
Slimline Heatpac C26	20-26	CON026SLM	150	920	465	760	-	794	277	126
Slimline Heatpac C35	26-35	CON035SLM	153	920	465	760	-	794	277	126

Dimensions (mm)
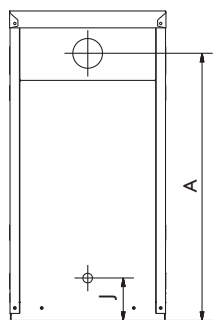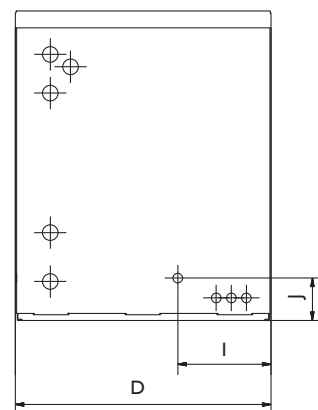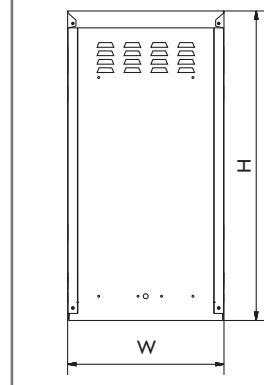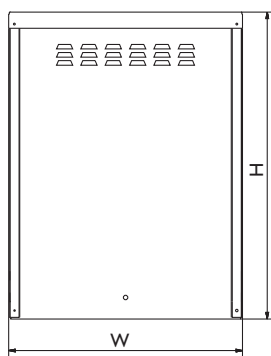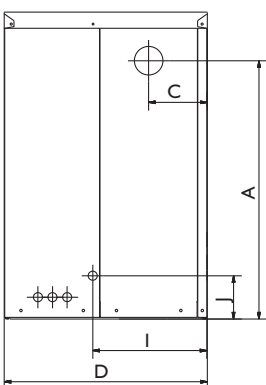
Heatpac, Systempac, Combipac

Slimline Heatpac

Systempac & Combipac

The Enviromax Systempac and Combipac are external boilers with similar specifications to their equivalent indoor model, with the addition of a built in frost thermostat.

Features

Systempac

- High quality weather-proof PVC-coated casing.
- Low pressure switch protects boiler in the event of system water loss.
- Fully insulated to prevent heat loss.
- Patented heat exchanger design.
- Fitted with frost protection stat.
- Whisper quiet operation.
- Stainless steel terminal guard.
- Flue can exit left or right.
- High performance Riello RDB burner.
- SEDBUK Band A Efficiency.
- Four models in outputs from 15kW to 44kW.

Combipac

- Excellent hot water performance - over 20 litres/min on 35kW model.
- PCB controller using highly accurate thermistors.
- Rapid re-heat after draw-off.
- High quality weather-proof PVC-coated casing.
- Fully insulated to prevent heat loss.
- Patented heat exchanger design.
- Flue can exit left or right.
- Twin circulating pumps – no diverter valve required
- Fitted with frost protection stat.
- Fully insulated and acoustically designed for ultra quiet operation.
- High performance Riello RDB burner.
- SEDBUK Band A Efficiency.
- Three models in outputs from 15kW to 35kW.

Systempac   Combipac

Specification

Model Enviromax	Output kW	Sales Code	Weight kg	Dimensions (mm)						
				H	W	D	C	A	I	J
Systempac C20	15-20	CSP020NKT	163	945	720	625	180	795	351	133
Systempac C26	20-26	CSP026NKT	163	945	720	625	180	795	351	133
Systempac C35	26-35	CSP035NKT	166	945	720	625	180	795	351	133
Systempac C44	35-44	CSP044NKT	270	1074	843	856	178	936	507	134
Combipac C20	15-20	CCP020OOO	206	945	720	625	180	795	351	133
Combipac C26	20-26	CCP026OOO	206	945	720	625	180	795	351	133
Combipac C35	26-35	CCP035OOO	209	945	720	625	180	795	351	133

Dimension diagram - See page 6

Kitchen

A high quality finish ensures that this boiler won't look out of place in your kitchen.

Features

- Compact design - fits under standard kitchen worktop (outputs up to 35kW).
- Hard wearing casings with premium quality finish.
- Patented heat exchanger design.
- 4-tapping points for ease of installation.
- Front service access.
- PCB controller with anti cycling function (outputs up to 35kW).
- Fully insulated and acoustically designed for ultra quiet operation.
- Multi directional flue options.
- High performance Riello RDB burner.
- Optional condensate pump.
- SEDBUK Band A Efficiency.
- Seven models in outputs from 15kW to 100kW.

Up to 100 kW

Specification

Model Enviromax	Output kW	Sales Code	Weight kg	Dimensions(mm) H	W	D	A	C	E	F	G	I	J
Kitchen C20	15-20	CKI020NKT	125	845	442	610	753	157	94	124	502	336	75
Kitchen C26	20-26	CKI026NKT	128	845	442	610	753	157	94	124	502	336	75
Kitchen C35	26-35	CKI035NKT	131	845	442	610	753	157	94	124	502	336	75
Kitchen C44	35-44	CKI044NKT	210	1046	464	852	914	154	100	125	620	485	86
Kitchen C58	44-58	CKI058NKT	216	1046	464	852	914	154	100	125	620	485	86
Kitchen C73	58-73	CKI073NKT	242	1196	524	851	1024	157	100	125	670	484	86
Commercial Utility	80-100	CUT100NKT	390	1249	623	1071	-	158	130	132	832	723	72

Dimensions (mm)

Front View

Side View

Top View

7 Pin Plug Power Supply & Pump
Burner Lock Out Light
High Limit Light
Mains Supply Light
Burner Plug
High Limit Re-set Button
Temperature Control
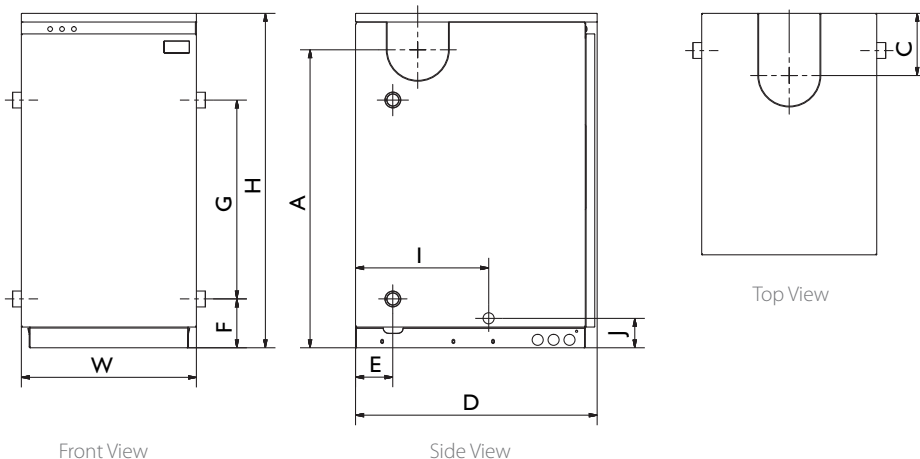
System

Factory-fitted expansion vessel and circulating pump saves space and installation time.

Features

- Compact design - fits under standard kitchen worktop (outputs up to 35kW).
- Low pressure switch protects boiler in the event of system water loss.
- Hard wearing casings with premium quality finish.
- Patented heat exchanger design.
- Front service access.
- Fully insulated and acoustically designed for ultra quiet operation.
- Multi directional flue options.
- High performance Riello RDB burner.
- Optional condensate pump.
- SEDBUK Band A Efficiency.
- Four models in outputs from 15kW to 44kW.

Circulating Pump

Specification

Model Enviromax	Output kW	Sales Code	Weight kg	Dimensions(mm)										
				H	W	D	A	B	C	E	F	G	I	J
System C20	15-20	CSB020NKT	143	844	442	610	752	-	157	94	123	-	336	74
System C26	20-26	CSB026NKT	146	844	442	610	752	-	157	94	123	-	336	74
System C35	26-35	CSB035NKT	149	844	442	610	752	-	157	94	123	-	336	74
System C44	35-44	CSB044NKT	235	1046	660	852	914	232	158	100	125	111	485	86

Dimensions (mm)

System C20, C26 & C35

Front View   Side View

Top View

System C44

Front View   Side View

Top View

7 Pin Plug Power Supply & Pump
Burner Lock Out Light
High Limit Light
Mains Supply Light
Burner Plug
High Limit Re-set Button
Temperature Control
Pressure Gauge

Pressure Vessel
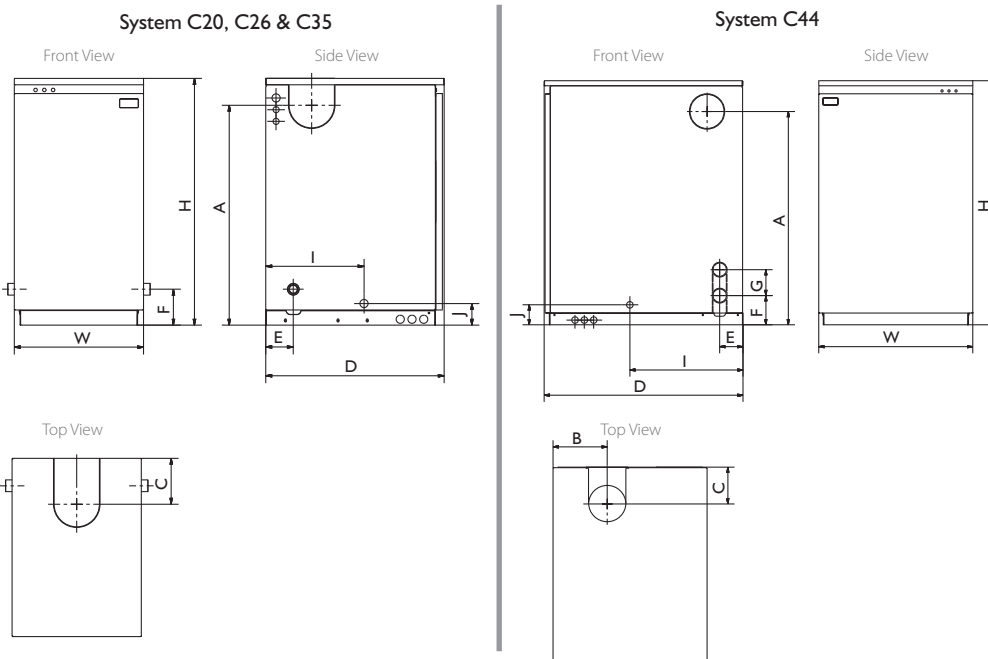
Combi

The Enviromax Combi boiler provides both domestic hot water and central heating water in a single appliance, saving you the cost and space associated with a hot water tank.

Features

- Excellent hot water performance - over 20 litres/min on 35kW model.
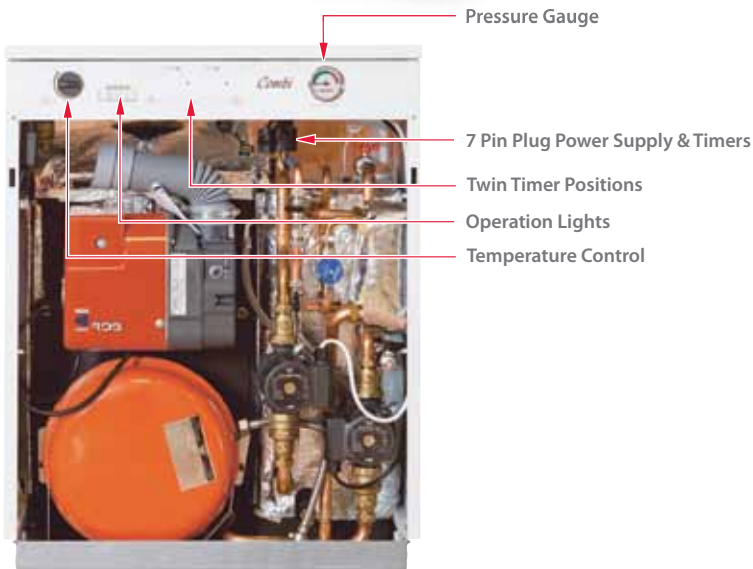- PCB controller using highly accurate thermistors.
- Rapid re-heat after hot water draw-off.
- Compact design - fits under standard kitchen worktop (outputs up to 35kW).
- Hard wearing casings with high quality finish.
- Patented heat exchanger design.
- Twin circulating pump - no diverter valve required.
- Fully insulated and acoustically designed for ultra quiet operation.
- Multi directional flue options.
- High performance Riello RDB burner.
- Optional condensate pump and timer controllers.
- SEDBUK Band A Efficiency.
- Three models in outputs from 15kW to 35kW.

Pressure Gauge

7 Pin Plug Power Supply & Timers

Twin Timer Positions

Operation Lights

Temperature Control

Specification

Model Enviromax	Output kW	Sales Code	Weight kg	Dimensions(mm)							
				H	W	D	A	B	C	I	J
Combi C20	15-20	CCO020NKT	173	845	665	605	750	220	147	335	75
Combi C26	20-26	CCO026NKT	176	845	665	605	750	220	147	335	75
Combi C35	26-35	CCO035NKT	179	845	665	605	750	220	147	335	75

Dimensions (mm)

Front View   Side View   Rear View   Top View
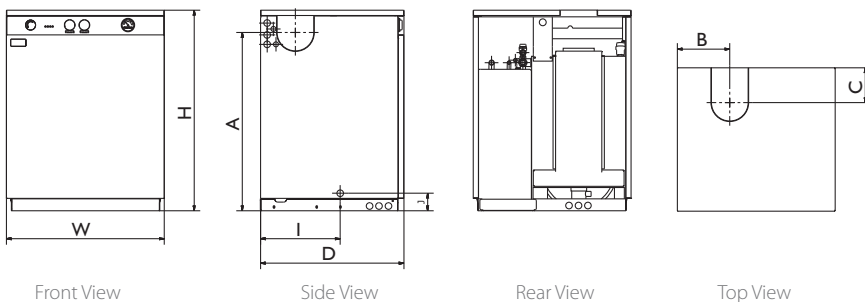
Technical Specification

Enviromax Combi / Combipac — Enviromax System / Systempac — Enviromax Kitchen / Heatpac / Popular / Slimline Heatpac

Boiler Model	C20/C26	C35	C20/C26	C35	C44	C12-18	C20/C26	C35	C44/C58	C73	C100
Heat Output kW	15-20/20-26	26-35	15-20/20-26	26-35	35-44	12-18	15-20/20-26	26-35	35-44/44-58	58-73	80-100
Max. BTU/h ('000)	50-90	90-120	50-90	90-120	120-150	40-60	50-90	90-120	120-200	200-250	270-340
CONNECTIONS											
Heating Flow	22 mm	28 mm	22 mm	28 mm	1½" BSP	1" BSP	1" BSP	1" BSP	1½" BSP	1½" BSP	2" BSP
Heating Return	22 mm	28 mm	1" BSP	1" BSP	1½" BSP	1" BSP	1" BSP	1" BSP	1½" BSP	1½" BSP	2" BSP
Mains Cold Feed (Copper)	15 mm	15 mm	15 mm	15 mm	15 mm						
Hot Water Delivery (Copper)	15 mm	15 mm									
Drain Off Valve	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP	½" BSP
Safety Pressure Valve Outlet (Copper)	15 mm	15 mm	15 mm	15 mm	15 mm						
Condensate Trap	22 mm PLASTIC		22 mm PLASTIC				22 mm PLASTIC				
CIRCULATING PUMP	25/60	25/60	25/60	25/60	25/80						
Domestic Hot Water Plate Heat Exchanger	25 plate	31 plate									
Integral Expansion Vessel Normal Capacity	12 litres	12 litres	12 litres	12 litres	18 litres						
Expansion Vessel Pre-charge Pressure	1 bar	1 bar	1 bar	1 bar	1 bar						
Low Pressure Water Switch?	✔	✔	✔	✔	✔	✗	✗	✗	✗	✗	✗
Filling Loop Included?	✔	✔	✔	✔	✔	✗	✗	✗	✗	✗	✗
WATER CONTENT											
Boiler (Litres)	24	24	24	24	45	24	24	24	43.5	54	75
Primary Tank (Litres)	40	40									
D.H.W. GUIDE PERFORMANCE											
in litres/min (120 litre draw-off at 40°C Δt.)	16	20									
FLUE (INDOOR BOILERS)											
Balanced Flue Assembly (mm)	125 (5")	125 (5")	125 (5")	125 (5")	150 (6")	100 (4")	125 (5")	125 (5")	150 (6")	180 (7")	200 (8")
Conventional Flue Assembly (mm)	130 id.	130 id.	130 id.	130 id.	150 id.	130 id.	130 id.	130 id.	150 id.	180 id.	200 id.
Max. Low Level Flue Length (metres)	3	3	3	3	3	3	3	3	3	3	3
Max. High Level Flue Length (metres)	6	6	6	6	6	6	6	6	6	4	6
Max Vertical Level Flue Length (metres)	6	6	6	6	6	6	6	6	6	4	6
INTEGRAL FLUES ON HEATPAC MODELS											

HEATING SYSTEM (SEALED)	Fit in accordance with BS 7074 Part 1, BS 5449, OFTEC standards and all other relevant legislation.		
Max. Operating Pressure	2.5 bar	2.5 bar	
Max. System Pressure Cold	1.5 bar	1.5 bar	
Min. System Pressure Cold	0.5 bar	0.5 bar	
Preset Pressure Relief Valve	3 bar	3 bar	3 bar

MAINS WATER SUPPLY PRESSURE	Min. 1 bar - Max. 10 bar (for user comfort, we recommend pressure at tap to be between 2 and 5 bar).
	Limescale excess: When over 150/200 ppm, fit appropriate scale reducer.

WATER SIDE RESISTANCE	Flow rate to give a nominal output at 10K differential	Flow Rate Measured (kg/h)	2874.24
		Waterside Resistance (mbar)	0.18
	Flow rate to give a nominal output at 20K differential	Flow Rate Measured (kg/h)	1522.92
		Waterside Resistance (mbar)	0.19

PRESSURE JET OIL BURNERS	RIELLO RDB 2.2 up to C44 & RIELLO RDB 4.2 from C58 to C100
FUEL	C2 Kerosene
ELECTRICAL SUPPLY	230V AC 50Hz 5A

FROST THERMOSTATS			
FROST STAT FITTED TO ALL OUTDOOR MODELS			
Boiler Central Heating Control	60°C - 80°C	60°C - 80°C	60°C - 80°C
Boiler Safety Limit	110°C	110°C	110°C
Tank (DHW)- Fixed	78°C		
Early Alert - Fixed	87°C		
Over-run - Fixed	93°C	87°C	87°C (Heatpac, Slimline Heatpac & Kitchen only)

Condensing Flue Kits & Accessories

Flues are a critical part of a boiler installation. A correctly installed flue will ensure clean and efficient operation of the boiler. Firebird offer a range of high quality stainless steel flue kits that ensure optimum boiler performance and longer design life. Three types are available:
  • Low Level Flue
  • High Level Flue (Vertical & Horizontal)
  • Conventional Flue

NB: Only Firebird-approved flue kits and accessories may be used on Firebird boilers. Use of unapproved flue kits may invalidate the boiler warranty policy.

LOW LEVEL FLUE KITS

Low level flue kits have become popular in recent years due to their convenient size and ease of installation. When installing a condensing low level flue, consideration should be given to the discharge of the condense plume as it may cause a nuisance to neighbouring properties. In some cases a plume dispersal kit may be advisable.

	Sales Code	Product Description
	12-35kW	**KITS AND EXTENSION** (125mm dia)
A*	CBF005KIT	Low Level Flue Kit 380-600mm Stainless Steel Guard inc.
A*	CBF005SKT	Low Level Flue Kit (short) 200-280mm Stainless Steel Guard inc.
B	CBF005EXT	450mm Extension for Low Level Flue Kit.
	44-58kW	**KITS AND EXTENSION** (150mm dia)
A*	CBF006KIT	Low Level Flue Kit 380-600mm Stainless Steel Guard inc.
A*	CBF006SKT	Low Level Flue Kit (short) 200-280mm Stainless Steel Guard inc.
B	CBF006EXT	450mm Extension for Low Level Flue Kit.
	73kW	**KITS AND EXTENSION** (180mm dia)
A*	CBF007KIT	Low Level Flue Kit 380-600mm Stainless Steel Guard inc.
B	CBF007EXT	450mm Extension for Low Level Flue Kit.

* A - Low Level Flue Kit
All low level flue kits contain:
  • Telescopic balanced flue with Venturi Insert
  • Terminal Guard
  • Deflector Plate
  • Wall Seal
  • Silicone Lubricant
  • Jubilee Clip for air snorkel
  • Assembly Instructions
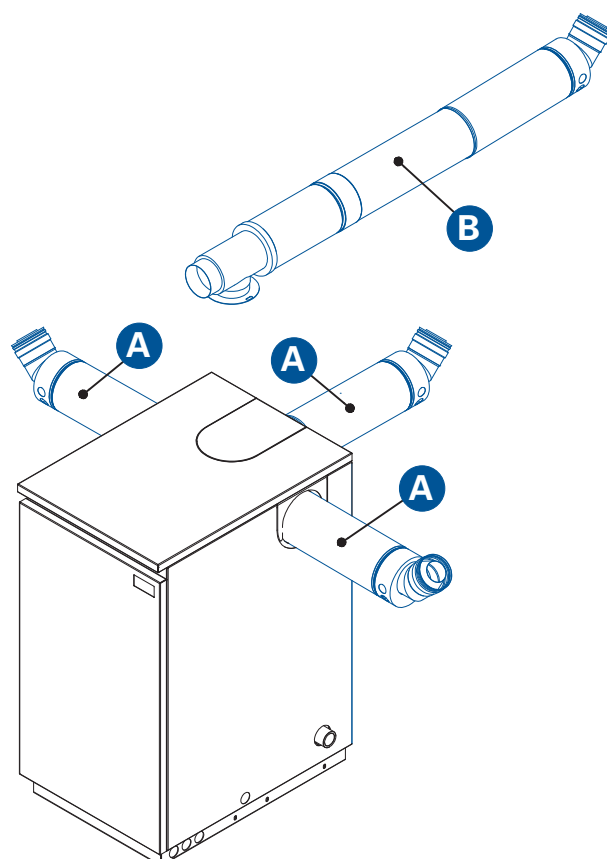
PLUME DISPERSAL KITS

A plume dispersal kit can be connected to the exhaust terminal of a low level flue in order to discharge flue gases [plume] up over head height and neighbouring properties. Plume dispersal options can be either used with a kit or retro-fitted to an existing concentric flue.
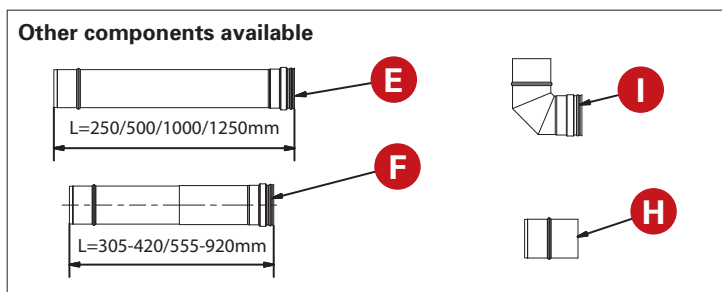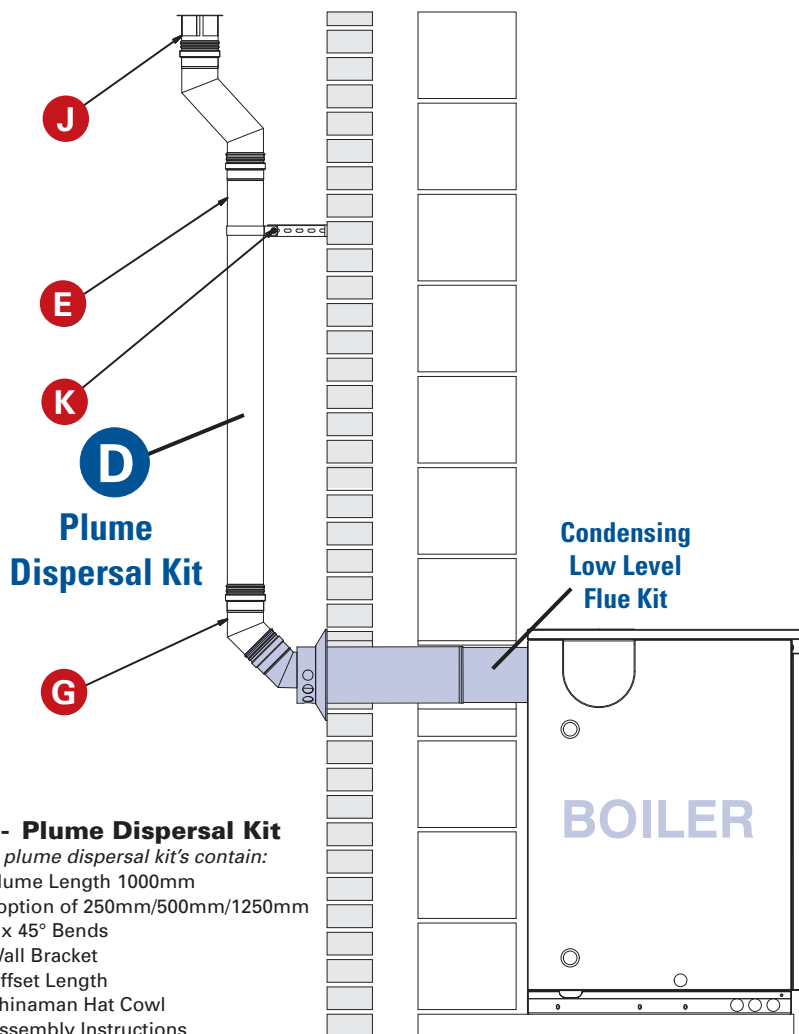
	Sales Code	Product Description
	12-35kW	**KIT AND EXTENSIONS** (80mm dia)
D*	**PDK005SET**	5″ Plume Dispersal Kit
E	**PDK250KIT**	250mm Length
E	**PDK500KIT**	500mm Length
E	**PDK1000KT**	1000mm Length
E	**PDK1250KT**	1250mm Length
F	**PDK420KIT**	305/420 Adjustable Length
F	**PDK920KIT**	555/920 Adjustable Length
G	**PDK045BND**	45 degree Bend
H	**PDK005TRM**	Terminal With Mesh
I	**PDK090BND**	90 degree Bend
J	**PDK000CHC**	Chinaman Hat Cowl
K	**PDK000WBK**	Wall Bracket
	PDK080POP	Adaptor
	44-58kW	**KIT AND EXTENSIONS** (100mm dia)
D*	**PDK006SET**	6″ Plume Dispersal Kit
E	**PDK256KIT**	250mm Length
E	**PDK506KIT**	500mm Length
E	**PDK1006KT**	1000mm Length
E	**PDK1256KT**	1250mm Length
F	**PDK426KIT**	305/420 Adjustable Length
F	**PDK926KIT**	555/920 Adjustable Length
G	**PDK456BND**	45 degree Bend
H	**PDK006TRM**	Terminal With Mesh
I	**PDK906BND**	90 degree Bend
J	**PDK006CHC**	Chinaman Hat Cowl
K	**PDK006WBK**	Wall Bracket
	PDK100POP	Adaptor
	73kW	**KIT AND EXTENSIONS** (125mm dia)
D*	**PDK007SET**	7″ Plume Dispersal Kit
E	**PDK257KIT**	250mm Length
E	**PDK507KIT**	500mm Length
E	**PDK1007KT**	1000mm Length
E	**PDK1257KT**	1250mm Length
F	**PDK427KIT**	305/420 Adjustable Length
F	**PDK927KIT**	555/920 Adjustable Length
G	**PDK457BND**	45 degree Bend
H	**PDK007TRM**	Terminal With Mesh
I	**PDK907BND**	90 degree Bend
J	**PDK007CHC**	Chinaman Hat Cowl
K	**PDK007WBK**	Wall Bracket
	PDK125POP	Adaptor
	100kW	**KIT AND EXTENSIONS** (150mm dia)
E	**PDK258KIT**	250mm Length
E	**PDK508KIT**	500mm Length
E	**PDK1008KT**	1000mm Length
E	**PDK1258KT**	1250mm Length
F	**PDK428KIT**	305/420 Adjustable Length
F	**PDK928KIT**	555/920 Adjustable Length
G	**PDK458BND**	45 degree Bend
H	**PDK008TRM**	Terminal With Mesh
I	**PDK908BND**	90 degree Bend
J	**PDK008CHC**	Chinaman Hat Cowl
K	**PDK008WBK**	Wall Bracket
	PDK150POP	Adaptor

J
E
K

D

Plume Dispersal Kit

Condensing Low Level Flue Kit

G

BOILER

* D - Plume Dispersal Kit
All plume dispersal kit's contain:
• Plume Length 1000mm
 - option of 250mm/500mm/1250mm
• 1 x 45° Bends
• Wall Bracket
• Offset Length
• Chinaman Hat Cowl
• Assembly Instructions

Other components available

E
L=250/500/1000/1250mm

I

F
L=305-420/555-920mm

H

HIGH LEVEL HORIZONTAL & VERTICAL FLUE KITS

High level flue kits are the optimal flue system as they provide good natural draft and ensure that the flue gases are discharged away from habitable areas.

High Level Horizontal Flue Kit
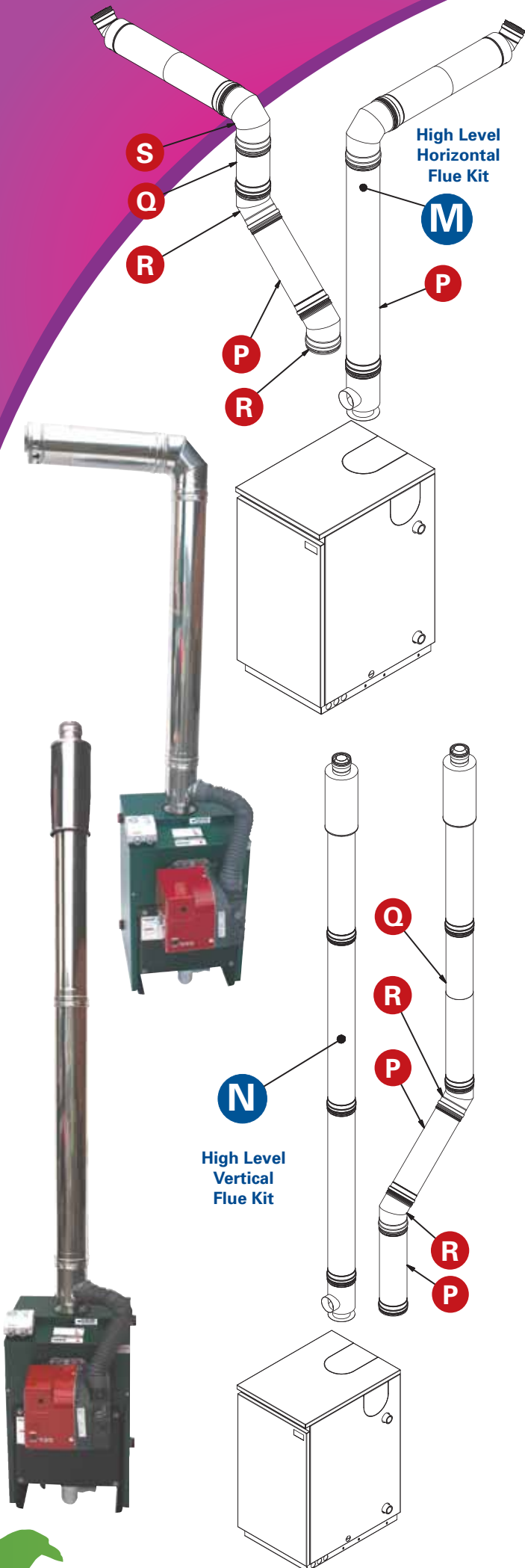
	Sales Code	Product Description
	12-35kW	**KITS & EXTENSIONS** (125mm dia)
M*	HLF005HSS	1075mm High Level Horizontal Flue Kit
N*	HLF005VSS	3 metre High Level Vertical Flue Kit
P	HLF005XAS	1000mm High Level Vertical Extension
P	HLF005XBS	500mm High Level Vertical Extension
P	HLF005XCS	250mm High Level Vertical Extension
Q	HLF005XDS	305mm/420mm High Level Vertical Adjustable Length
Q	HLF005XES	555mm/920mm Adjustable Length
R	HLF455SLB	45 degree Bend
S	HLF905LBS	90 degree Bend
	HLF005WBS	Wall Bracket
	44-58kW	**KITS & EXTENSIONS** (150mm dia)
M*	HLF006HHL	1075mm High Level Horizontal Flue Kit
N*	HLF006VHL	3 metre High Level Vertical Flue Kit
P	HLF006EXA	1000mm High Level Vertical Extension
P	HLF006EXB	500mm High Level Vertical Extension
P	HLF006EXC	250mm High Level Vertical Extension
Q	HLF006EXD	305mm/420mm Adjustable Length
Q	HLF006EXE	555mm/920mm Adjustable Length
R	HLF456ELB	45 degree Bend
S	HLF906ELB	90 degree Bend
	HLF006WBK	Wall Bracket
	73kW	**KITS & EXTENSIONS** (180mm dia)
M*	HLF007HHL	1075mm High Level Horizontal Flue Kit
N*	HLF007VHL	3 metre High Level Vertical Flue Kit
P	HLF007EXA	1000mm High Level Vertical Extension
P	HLF007EXB	500mm High Level Vertical Extension
P	HLF007EXC	250mm High Level Vertical Extension
Q	HLF007EXD	305mm/420mm Adjustable Length
Q	HLF007EXE	555mm/920mm Adjustable Length
R	HLF457ELB	45 degree Bend
S	HLF907ELB	90 degree Bend
	HLF007WBK	Wall Bracket
	100kW	**KITS & EXTENSIONS** (200mm dia)
M*	HLF008HHL	1075mm High Level Horizontal Flue Kit
N*	HLF008VHL	3 metre High Level Vertical Flue Kit
P	HLF008EXA	1000mm High Level Vertical Extension
P	HLF008EXB	500mm High Level Vertical Extension
P	HLF008EXC	250mm High Level Vertical Extension
Q	HLF008EXD	305mm/420mm Adjustable Length
Q	HLF008EXE	555mm/920mm Adjustable Length
R	HLF458ELB	45 degree Bend
S	HLF908ELB	90 degree Bend
	HLF008WBK	Wall Bracket

High Level Vertical Flue Kit

* M - High Level Horizontal Flue Kit
All high level horizontal flue kits contain:
- Boiler Adaptor
- 1000mm Vertical Length
- 90° Bend
- Telescopic Horizontal Section
- Wall Seal
- Silicone Lubricant
- Assembly Instructions

* N - High Level Vertical Flue Kit
All high level vertical flue kits contain:
- Boiler Adaptor
- 1000mm length including Terminal
- 2 x 1000mm Lengths
- Rain Cowl
- Storm Collar
- 2 x Wall Brackets
- Silicone Lubricant
- Assembly Instructions

Boiler Spare Parts

Burner & Oil Hose

Sales Code	Description
BRN070RB2	RDB2.2 Burner, 20kW
BRN090RB2	RDB2.2 Burner, 26kW
BRN120RB2	RDB2.2 Burner, 35kW
BRN150RB3	RDB2.2 Burner, 44kW
BRN200RB4	RDB4.2 Burner, 58kW
BRN250RB4	RDB4.2 Burner, 73kW
ZE3007621	Flexible Oil Hose 600mm - Kerosene
ZE3005720	Flexible Oil Hose 900mm - Kerosene
ZE20032005	Flexible Pipe 600mm - Bio & Gas Oil
ZE20022601	Flexible Pipe 900 mm - Bio & Gas Oil
ZE3003602	Connector 3/8 to 1/4
ZE3009068	Connector 3/8 to 3/8

G Burner Spares

Sales Code	Description
ZE20031996	Pump
ZE3001156	Control box
ZE3002280	Photocell
ZE3007971	Motor
ZE3002279	Coil
ZE3005798	Capacitor
ZE3005787	Gasket
ZE3020500	Hydraulic Ram
ZE3005721	Electrode Set - G3B
ZE3008636	Flange
ZE3000439	Centre Seals
ZE3000443	10 Pack Drive Coupling

RDB Burner Spares

Sales Code	Description
ZE20030953	Pump
ZE3008652	Control Box
ZE3008646	Photocell
ZE3002836	Motor & Condenser
ZE3008648	Coil
ZE3002837	Capacitor 4.5uf
ZE3005787	Gasket
ZE3007513	Electrode
ZE3008860	Electrode (short head)

Thermostat & Electrical Parts

Sales Code	Description		Sales Code	Description
ACCHPKSTK	Dual Thermostat D5 (Heatpac)		ACC001ORS	Over Run Stat (Combi) (93° C)
ACC000DST	Dual Thermostat P5 (Popular)		ACC000OHS	Overheat Stat (Slimline Heatpac) (87° C)
ACC000EAS	Early Alert Stat (Combi) Pump Over Run Stat (Kitchen & Heatpac) (87° C)		ACC000RTS	Relay Tank Stat (Combi) (78° C)
ACC000RTP	Flow Switch Probe Thermistor (Red)		ACCCOMPKT	Stat Pocket 000949 4 pocket
ACC000TDF	Thermodisc Frost Stat		ACC003PKT	Stat Pocket DIA 15 x 16 3 pocket
ACC000FST	Frost Stat TLM 2557		ACC000WTP	Boiler Thermistor Probes (White)
ACC000LMT	High Limit Stat (Firebird 'S' - Combi Mechanical) (110° C)		ACC000WTP	Tank Thermistor Probes (White)
ACC000SQL	High Limit Stat (Super Q) (AAM)		ACC000ETM	Combi Twin Timer Kit Electronic
ACC000TIM	Combi Twin Timer Kit (Combi Mechanical)		ACC000BAS	Relay Base 11 Pin
ACC000PCB	PCB Board (Combi)		ACC000CLK	Time Clock
ACC000PSW	Pressure Switch		ACC000STA	Control Stat (Firebird 'S' - Combi Mechanical) (50° - 80°C)
ACC000RLY	Relay 230 Vac		ACCSQCSTK	Control Stat TBB (Super Q)

Full lists of spare parts are provided in the boiler manuals.

Sales Code	Description	Sales Code	Description

Plumbing

Sales Code	Description	Sales Code	Description
ACCCOMMAC	Air Vent 1/8"' Manual	ACC012WSH	Fibre Washer PHE 12.5 x 18.5 x 1.5mm red
ACCCOMAAV	Air Vent Auto	ACC017WSH	Fibre Washer PHE 17 x 24 x 1.5mm red
ACC022VAL	Ball Valve - 22mm	ACC015FCV	Filling Loop Check Valve
ACC000PCV	Check Valve Nylon	ACC000FLH	Filling Loop Hose 400mm
ACC034MMC	Check Valve 3/4" Brass Male/Male	ACCCOMFSW	Flowswitch, Sika VKX15MIFIREB03
ACC034MFC	Check Valve 3/4" Brass Male/Female	ACCCOMDCV	Double Check Valve 15mm
ACC034FMC	Check Valve 3/4" Brass Female/Male	ACC025PHE	Plate Heat Exchanger - 25
ACCENVPMP	Condensate Pump	ACC031PHE	Plate Heat Exchanger - 31
ACC000TRP	Condensate Trap	ACCCOMPRG	Pressure Gauge (Combi - System)
ACCCOMHOS	Expansion Vessel Flexible Hose	ACCCOMSRV	Pressure Release Valve
ACC012PVL	Expansion Vessel 12 litre	ACC022PIV	Pump Isolating Valve 22mm
ACC014PVL	Expansion Vessel 14 litre	ACCCOMTMV	Thermostatic Mixing Valve (Combi) 15mm
ACC018PVL	Expansion Vessel 18 litre		

Other Parts

	kW	20/26/35	44/58	73	100
Door Gaskets -	Ceramic	ACC035GSK	ACC044GSK	ACC073GSK	ACC100GSK
Door Gaskets -	Graphite	ACC035GRA	ACC044GRA	ACC073GRA	ACC100GRA

Solar Thermal Systems

Firebird's range of solar thermal systems is arguably the most extensive on the market and offers customers a wide choice of collectors, system configurations and accessories. Designed and manufactured to Firebird's exacting standards, our solar systems are second to none in terms of performance, durability and efficiency. All our solar systems have been placed through rigorous testing to ensure the highest standards have been achieved.

Moreover, when you purchase a Firebird product you have the back-up of our technical team and nationwide service support. Peace of mind from a company that has delivered premium heating products for over 30 years.

CPK7210-N Flat Panel Collector	**TZ58-1800 Heat Pipe Solar Collector**	**CVSKC-10 Vacuum Tube Collector**

Accreditations
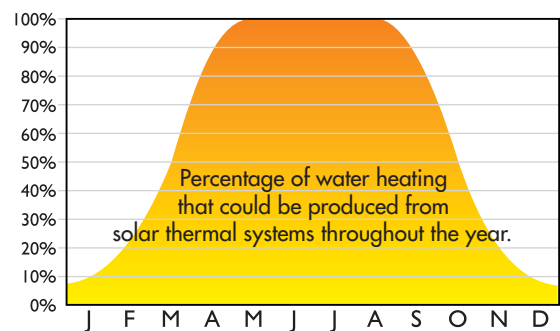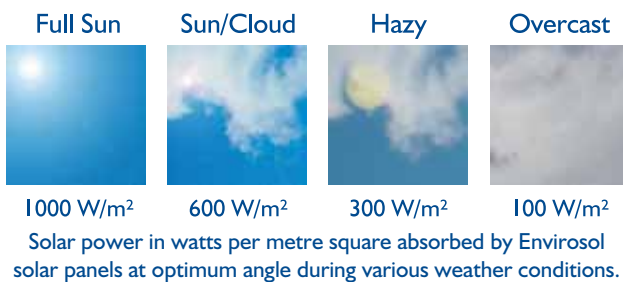Firebird solar systems and collectors have the following accreditations.

Why solar energy?
Solar energy is free with the annual solar energy on the earth's surface being 10,000 times greater than the annual global energy demand. Solar thermal systems can deliver up to 70% of the hot water requirements for an average household in Ireland and in the U.K. Installation of solar energy on a larger scale, ie. commercial, can make a great contribution to commercial energy costs.

By using solar energy to heat hot water, you will be helping to reduce our dependence on fossil fuels, while improving the energy efficiency and potentially the value of your home. A typical domestic solar hot water system can save in excess of a tonne of CO_2 per annum. In particular, solar energy scores positively with the new BER - Building Efficiency Rating scheme.

Is there enough solar energy?
When designed correctly, solar heating could provide the total hot water requirement for the summer months and up to 30% during winter months.

Full Sun	Sun/Cloud	Hazy	Overcast
1000 W/m²	600 W/m²	300 W/m²	100 W/m²

Solar power in watts per metre square absorbed by Envirosol solar panels at optimum angle during various weather conditions.

Percentage of water heating that could be produced from solar thermal systems throughout the year.
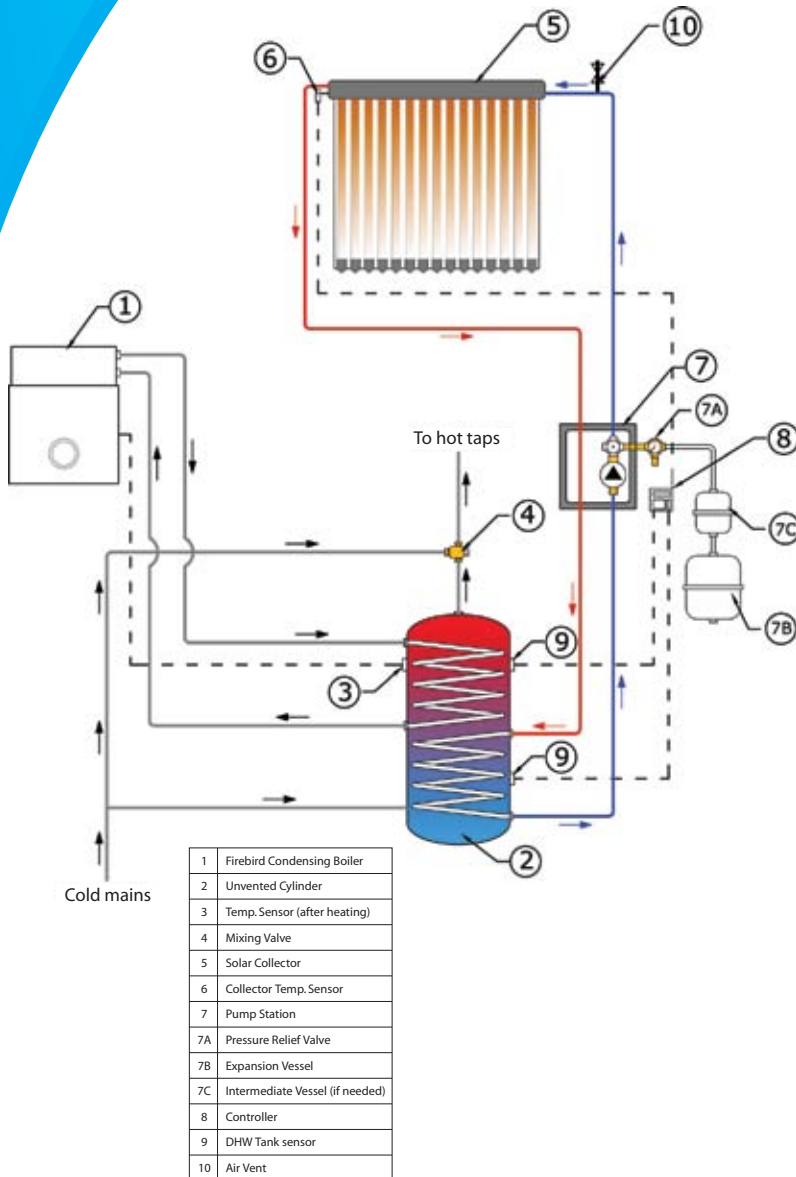
You can benefit from solar energy anywhere in Ireland and in the U.K. However, the further south you live, the more powerful the sun. Local factors will also have an effect on the radiation, including pollution free skies, local weather variations and the orientation of your roof.

It must be stressed though, that everyone can benefit from solar power. Contact our technical design department for your solar thermal system.

Solar System Design & Sizing

The main components of a domestic hot water solar system are the solar collectors, water storage tank, solar controller and solar pumping station. The diagram here below shows a basic concept layout of a solar thermal system.

When designing a solar system, it is imperative that the system is sized correctly; otherwise inadequate performance or overheating may occur. The following is the generally accepted best practice for sizing a solar system for the Irish and the U.K. climate.

To hot taps

Cold mains

1	Firebird Condensing Boiler
2	Unvented Cylinder
3	Temp. Sensor (after heating)
4	Mixing Valve
5	Solar Collector
6	Collector Temp. Sensor
7	Pump Station
7A	Pressure Relief Valve
7B	Expansion Vessel
7C	Intermediate Vessel (if needed)
8	Controller
9	DHW Tank sensor
10	Air Vent

Step 1 - Calculate hot water usage
Generally speaking the average daily hot water usage is between 35-65 litres per person. When sizing solar systems, 50 litres is a guidance figure.

Step 2 - Determine location of collectors
Ideally, collectors should be orientated due south if possible and at a pitch of between 30˚ and 50˚. Variations to the optimum positions are permissible and the chart on the right shows the % reduction in solar energy captured.
For example collectors facing due east at a 30˚ inclination will capture 80% of the maximum potential energy.

Step 3 - Determine storage tank size
The storage volume typically required for domestic solar systems should be equal to twice the daily hot water demand. A general recommendation is to have 50 litres of water storage capacity for every m^2 of collector aperture area. Recommended tank sizes for Firebird solar collectors are shown in the table below.

Step 4 - Calculate collector area required
A solar system should be designed so as to almost completely cover the hot water requirements during the summer months. As a rule of thumb, approximately 1 m^2 of collector aperture area is required per person.
Note, if the collectors can not be installed to optimum conditions, the correction factors in the chart below should be applied, i.e. if the collectors are facing due east at a 30˚ inclination, then 1 m^2 is multiplied by 120% = 1.2 m^2.
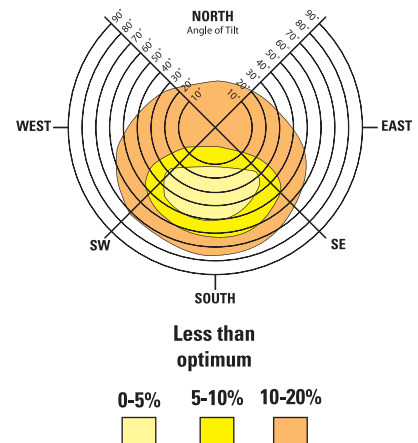
No. of Persons	No. of collectors	Tank Size (l)
2-4	2 x CPK7210-N Flat Panel collectors 2 x CVSKC-10 Vacuum Tube collectors 30 - 40 TZ58-1800 heat pipes	200
4-6	3 x CPK7210-N Flat Panel collectors 3 x CVSKC-10 Vacuum Tube collectors 40 - 60 TZ58-1800 heat pipes	300

Guide to Solar Thermal Systems available from Firebird.

NORTH
Angle of Tilt

WEST

EAST

SW

SE

SOUTH

Less than optimum

0-5%   5-10%   10-20%

Solar Collectors

Firebird offer three collector types to ensure that customers can choose the right collector to suit their installation requirements and budget.

CPK7210-N Flat Panel Collector

Firebird's CPK7210-N Flat Plate Collector is one of the most efficient collectors in the world, with an optical efficiency of 81.8%. One of the unique features of the CPK7210-N is that the collector base is extruded from a single aluminium sheet thus removing the need for welds, joints or glueing at the corners.

Other features:
- Glass is a special tempered solar glass.
- Absorber is constructed from a single sheet of Tinox™ selective absorber coating.
- Heat transfer pipes behind the absorber are ultrasonically welded along the entire length to ensure optimal heat transfer.
- 50mm of mineral wool insulation.
- Professional finish.

Sales Code SOL100FPC
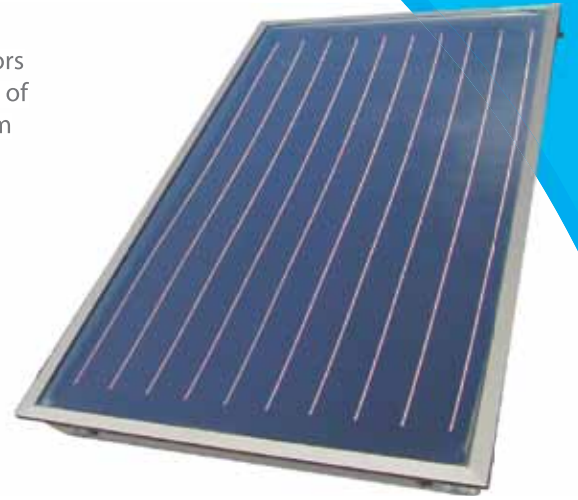
TZ58-1800 Heat Pipe Solar Collector

The TZ58-1800 Heat Pipe Solar Collectors offer an optimum performance to price ratio. The tubes are highly efficient due to a round shaped absorber design so that they capture the solar energy throughout the day.

Other features:
- High build quality - aluminium manifold design, nickel plated condenser head, borosilicate glass.
- Manifold can be installed initially and the tubes added later during commissioning (avoiding the lifting of heavy items onto the roof).
- Reinforced mounting kit manufactured to Firebird's specification.

Sales Code SOL820VTS - 20 Tube Set
SOL830VTS - 30 Tube Set

CVSKC-10 Vacuum Tube Collector

The CVSKC-10 Vacuum Tube Collector is a U-pipe direct flow evacuated tube, often referred to as a 'Sydney' tube. They are amongst the most efficient solar collector designs due to the CPC reflector aluminium plate placed behind the tubes. It reflects solar radiation back onto the absorber. The CVSKC-10 collector offers optimum performance in terms of the installation footprint. Ten tubes have an incredible aperture area of 1.6m and with a height of only 1.64m, will fit on most restricted roof spaces.

Other features:
- Delivered assembled to cut down installation time.
- Co-axial glass tubes with excellent vacuum ~5 Pascals.
- Transfer manifold insulated with mineral wool insulation.
- Light weight construction for ease of handling.

Sales Code SOL150VTC

Technical Specification		CPK7210-N Flat Panel	TZ58-1800 Heat Pipe 20 tube set	30 tube set	CVSKC-10 Vacuum Tube
Outer dimensions:	Height [mm]	2038	2020	2020	1645
	Width [mm]	1039	1825	2655	1115
	Depth [mm]	98	155	155	107
Tube dimensions	Diameter [mm]	-	58	58	37
	Length [mm]	-	1800	1800	1550
Weight	[kg]	38	78	115	31
Gross collector area	[m2]	2.11	3.507	5.005	1.83
Aperture area	[m2]	1.88	1.867	2.791	1.59
Max operating pressure	[bar]	10	6	6	10
Stagnation temperature	[˚C]	216	200	200	286
Angle of inclination permitted		15˚ to 75˚	15˚ to 75˚	15˚ to 75˚	15˚ to 75˚
Performance data *					
Zero-loss collector efficiency	η_0	74.1%	73.4%	73.4%	60.5%
Collector heat loss coefficient, a1	[W/m^2 K]	3.705	1.529	1.529	0.850
Collector performance ratio, a2	[W/m^2 K^2]	0.015	0.0166	0.0166	0.010
Absorption		> 95%	> 94 %	> 94 %	> 96%
Emission		< 5%	< 7%	< 7%	< 6%
Annual energy yield	[kWh/m^2]	> 525	> 525	> 525	> 529

* All based on aperture area.

FIXING OPTIONS

PITCHED ROOF

All Firebird solar collectors can be installed on a normal slate or tiled roof using our weather-proof aluminium mounting frame kits. Mounting kits are constructed from robust materials and come with easy to follow instructions. Mounting kits for CPK7210-N Flat Plate collectors and CVSKC-10 Vacuum Tube collectors are available for double and single collector configurations. Mounting kits for TZ58-1800 Heat Pipe Solar collectors are supplied for sets of 20 and 30 tubes.

Sales Code	Description	
SOL101FMT	On-roof Mounting Kit	- 2 CPK7210-N Flat Plate collectors
SOL103FMT	On-roof Mounting Kit	- 1 extra CPK7210-N Flat Plate Collector
SOL151VMT	On-roof Mounting Kit	- 2 CVSKC-10 Vacuum Tube collectors
SOL153VMT	On-roof Mounting Kit	- 1 extra CVSKC-10 Vacuum Tube Collector
SOL822KIT	On-roof Mounting Kit	- 20 TZ58-1800 Heat Pipe Solar Collector
SOL832KIT	On-roof Mounting Kit	- 30 TZ58-1800 Heat Pipe Solar Collector

IN-ROOF

An in-roof installation kit is available for CPK7210-N Flat Plate collectors. Note that in-roof installation is not possible with CVSKC-10 Vacuum Tube collectors or TZ58-1800 Heat Pipe Solar collectors. With an in-roof kit the collectors are set lower on the roof giving a more aesthetically pleasing finish. Our in-roof kit comes with side, top and bottom flashings, collector mounting rails, coach bolts, rubber seals and installation instructions. Available in double and single collector configurations - for tiled and slate roof constructions.

Sales Code	Description	
SOL511TRF	In-Roof Mounting Kit Tile Roof	- 2 CPK7210-N Flat Plate collectors
SOL512TRF	In-Roof Mounting Kit Tile Roof	- 1 extra CPK7210-N Flat Plate Collector
SOL513SRS	In-Roof Mounting Kit Slate Roof	- 1 extra CPK7210-N Flat Plate Collector

FLAT ROOF INSTALLATION

If solar collectors have to be installed on a flat roof or surface, then a flat roof mounting kit is required. Flat roof kits are available for all collectors and come with mounting frame, coach bolts, rubber seals and installation instructions. Available in double and single collector configurations.

Sales Code	Description	
SOL102FMT	Flat Roof Kit	- 2 CPK7210-N Flat Plate collectors
SOL104FMT	Flat Roof Kit	- 1 extra CPK7210-N Flat Plate Collector
SOL152VMT	Flat Roof Kit	- 2 CVSKC-10 Vacuum Tube collectors
SOL154VMT	Flat Roof Kit	- 1 extra CVSKC-10 Vacuum Tube Collector
SOL174FRK	Flat Roof Kit	- 20 TZ58-1800 Heat Pipe Solar Collector
SOL172FRK	Flat Roof Kit	- 30 TZ58-1800 Heat Pipe Solar Collector

SOLAR CONTROLLERS & PUMP STATIONS

CONTROLLER

The Firebird solar controller ensures the efficient operation of the solar system, managing the efficient transfer of the solar energy from the collectors to the water storage tank. The controller is easy to use and displays key system data at the touch of a button, i.e.:

- Collector temperature.
- Upper and lower tank temperatures.
- Activation of solar circulating pump.
- Hours of operation.
- Alternative arrangement layouts.
- Pump speed efficiency.
- Emergency safety shut off.
- Additional anti-freeze functions.
- Easy to use holiday function.
- Anti-legionella control.

In addition the controller has a second available relay that facilitates features such as:

- Back-up heat source available for central heating or immersion connection.
- Timer set up for back up heat source heating.
- Surplus energy usage.

PUMP STATION

The Firebird solar pump station houses the key plumbing components for a solar system including solar circulating pump, non return gravitational values, flow rate regulator, pressure relief value, connection for expansion vessel as well as filling points.

Sales Code	Description
SOL414CTR	Deltasol BS4 Controller & Twin Pump Station

EAST / WEST CONTROLLER & PUMP STATION

For East / West installations, a special controller (BS4 Plus) is required along with an extra single line pump station to cater for the additional collector array.

Sales Code	Description
SOL424CTR	Deltasol BS4 Plus Controller, Twin Pump Station & Single

WATER STORAGE TANKS

The solar twin coil tank is used to store hot water heated by the solar system. The tank has two internal coils, the solar circuit provides heat through the lower coil while the back-up heating system (boiler) will heat the hot water via the upper coil.

Firebird water storage tanks are built from premium quality stainless steel and include an electric immersion as standard.

Sales Code	Description
SOL215TNK	Twin Coil Solar Tank, 215 litres
SOL305TNK	Twin Coil Solar Tank, 305 litres
SOL305TCT	Triple Coil Solar Tank, 305 litres

EXPANSION VESSELS

An expansion vessel is necessary to absorb the expansion of the solar fluid when high temperatures are reached in the solar collector.
Currently available sizes are 24 and 35 litres.

Sales Code	Description
SOL502EXP	24 litre Expansion Vessel
SOL503EXP	35 litre Expansion Vessel

SOLAR ANTI-FREEZE

The heat transfer fluid used in a solar circuit is normally a mixture of water and a polypropylene glycol anti-freeze. The glycol anti-freeze also contains an additive to protect against corrosion and evaporates at higher temperatures than water to allow higher system temperatures. Firebird recommends a 40% glycol to 60% water mix to ensure frost protection to circa -25°C.

Sales Code	Description
SOL506FFL	Tyfocor L Anti-freeze for CPK7210-N Flat Plate Collector
SOL507VFL	Tyfocor LS Anti-freeze for Tube System

INTERMEDIATORY VESSELS

Sales Code	Description
SOL005EXP	Intermediatory Vessel - 5 litre
SOL012EXP	Intermediatory Vessel - 12 litre

ANTI-SCALD MIXING VALVE

Anti-scald (mixing) valve must be fitted close to the hot water outlet of the solar tank so that delivery to the taps does not exceed 48°C.

Sales Code	Description
SOL504MIX	Anti-scald Mixing Valve

ACCESSORY KIT - EXPANSION VESSEL

Expansion vessel accessory kit includes check valve, wall bracket and 1 flexi hose.

Sales Code	Description
SOL521PPK	Expansion Vessel Accessory Kit

AIR VENT & ISOLATING VALVE

An automatic air vent should be fitted at the highest point in the solar circuit system in order to remove air from the system during commissioning. An isolating valve should be fitted before the air vent and isolated once the system has been commissioned.

Sales Code	Description
SOL530ASV	Air Vent & Isolating Valve

STAINLESS STEEL INSULATED TWIN PIPE

Flexible pre-insulated twin pipe with UV protection sheath for linking collectors to solar tank. Saves considerable installation time and money. (Fittings Included).

Sales Code	Description
SOL010TWP	Insulated Twin Pipe DIN16 – 10m
SOL015TWP	Insulated Twin Pipe DIN16 – 15m
SOL025TWP	Insulated Twin Pipe DIN16 – 25m

PIPE FLASHING

The pipe flashings provide a tidy solution for passing solar flow and return pipes through the house roof.

Sales Code	Description
SOL509TRF	Pipe flashing - tiled roof
SOL510SRF	Pipe flashing - slate roof
SOL524VTL	Glidevale G1 Vent Tile (BBA/IAB Approved)
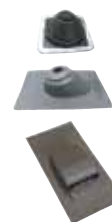
FLEXI PIPES, 1M

High grade 1m stainless steel flexi pipes which can be connected to the flow and return side of the collector array. This saves the installer having to make complicated pipe bends through the roof of the house. Fittings can be included to connect the pipe to the different solar collector types.

Sales Code	Description
SOL402FPP	1m Flexi Pipe
SOL001ELB & SOL001FEM	Fittings for CPK7210-N Flat Plate Collector
SOL075ELB & SOL075TAP	Fitings for CVSKC-10 Vacuum Tube and TZ58-1800 Heat Pipe Solar collectors

ACCESSORIES

Sales Code	Description
SOL514FPC	Weather-proof Cover for CPK7210-N Flat Plate Collector
SOL515VTC	Weather-proof Cover for CVSKC-10 Vacuum Tube Collector
SOL000FPS	Solar Filling & Flushing Pump
SOL527RFR	Refractometer
SOL528CFL	Solar Cleaning Fluid, 500ml
SOL000BOV	Blow-off Storage Vessel
SOL010TSV	TSV Lightning Protection (for controller)
SOL526RLY	Auxilary Relay HR230 (for controller)

Multifuel Backboiler and Dry Inset Stoves

Following on from the overwhelming success of our multifuel backboiler inset stove, we have now extended our range to include a multifuel dry inset stove.

Features

- 100% Irish.
- Designed to fit into a standard fireplace.
- Clean, easy operation.
- Solid multifuel options.
- Glass air wash design.
- Suitable for airtight dwellings* where underfloor, external air-in ducting is provided.
- HETAS approved.
- 16" and 18" models available.
- Easy to install.
- Flue adapter included free of charge.

Backboiler Inset Stove
- Up to 81.8% efficiency.
- Up to 12kW heat supplied to dwelling/radiators.

Dry Inset Stove
- Up to 75.6% efficiency.
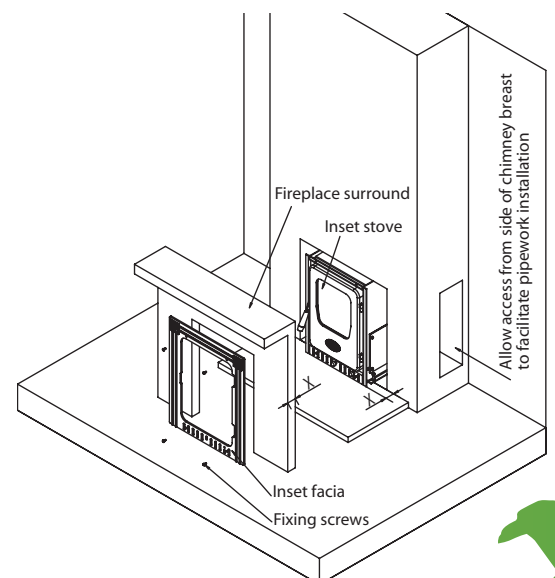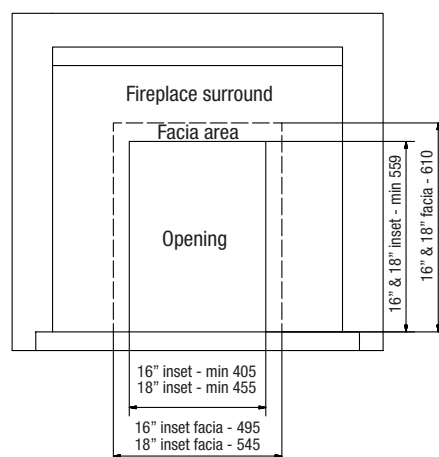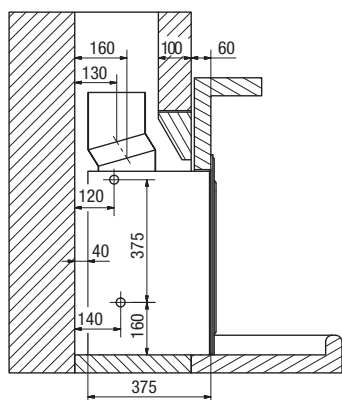- Up to 8.2kW heat supplied to space/room.

Specification

Backboiler Inset Stove	Product	Sales Code Matt	Sales Code Enamel	System Output	Room Output	Efficiency	No. of Standard Radiators	Height	Inset Width	Depth
	12kW	MAX016OOO	MAX016NML	8.3kW	3.6kW	80%	6	560	406-470	375
	16kW	MAX018OOO	MAX018NML	12.1kW	3.6kW	81%	9	560	455-520	375

Dry Inset Stove	Product	Sales Code	Room Output	Efficiency	Height	Inset Width	Depth
	6.9kW	MAX016DRY	6.9kW	74.4%	560	406-470	375
	8.2kW	MAX018DRY	8.2kW	75.6%	560	455-520	375

* Room seal kit available
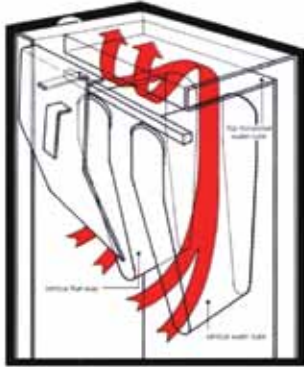- 16" - ACC016RSK
- 18" - ACC018RSK.

Note: The outline is similar for both the backboiler and the dry inset stove. The dimensions for the sockets are not relevant to the dry stove. All dimensions are relevant to stove/boiler section. Outer face framework is not taken into account. Dimensions are measured from pipe socket to socket, ie. 16" from outer pipe connection to outer pipe connection.

Dimensions (mm)

Fireplace surround
Facia area
Opening

16" & 18" inset - min 559
16" & 18" facia - 610

16" inset - min 405
18" inset - min 455

16" inset facia - 495
18" inset facia - 545

Fireplace surround
Inset stove
Inset facia
Fixing screws
Allow access from side of chimney breast to facilitate pipework installation

Backboilers

Challenger Backboiler

The Challenger backboiler is extremely efficient due to three unique design features:

a) Simplified straight-through flue-ways. The tapered shape is designed to extend the flame to cover the complete heat exchanger surfaces (see diagram).

b) Top water tube. This heating tube, positioned horizontally above flue-ways, collects much of the heat which would otherwise be lost into the chimney.

c) Dry-back, lift-off, radiant panel. Can rise to a higher temperature than the normal type cooled by water.

The Challenger backboiler can be easily cleaned by lifting off the radiant panel. This allows immediate access to the unique layout of flue-ways. Bearing in mind that 1.5mm soot reduces the efficiency by up to 25%.

The Challenger allows balanced performance via the dry-back radiant panel/damper. The panel can rise to a higher temperature than one cooled by water and the increased radiant heat minimises the drop in room-heating when the damper is opened to heat water/radiators.

Supreme Backboiler

Similar in design to the Challenger, the Supreme backboiler has a higher output due to the increased number of flueways.

Dimensions

Challenger Backboiler Dimensions			
Height		22 $^3/_8$"	(570mm)
Depth		12 $^3/_8$"	(317mm)
Width	16" model	20 $^1/_2$"	(520mm)
	18" model	22 $^1/_2$"	(570mm)

Supreme Backboiler Dimensions			
Height		22 $^3/_8$"	(570mm)
Depth		12 $^3/_8$"	(317mm)
Width	16" model	20 $^1/_2$"	(520mm)
	18" model	22 $^1/_2$"	(570mm)
	20" model	24 $^1/_2$"	(622mm)
	22" model	26 $^1/_2$"	(673mm)

Min. Builders Opening Dimensions		
Height		23" (585 mm)
Depth		14" (355 mm)
Width	16" model	25" (585 mm)
	18" model	27" (685 mm)
	20" model	29" (735 mm)
	22" model	31" (790 mm)

Sales Code	CHALLENGER BACKBOILER
CHL016OOO	16" model
CHL018OOO	18" model

Sales Code	SUPREME BACKBOILER
SUP016OOO	16" model
SUP018OOO	18" model
SUP020OOO	20" model
SUP022OOO	22" model

Sales Code	GRATES
GRA016RND	16" Round Grate
GRA016SQR	16" Square Grate
GRA016TPR	16" Tapered Grate
GRA018RND	18" Round Grate
GRA018SQR	18" Square Grate
GRA020RND	20" Round Grate
GRA020SQR	20" Square Grate
GRA022RND	22" Round Grate

Wood Pellet Boiler

Firebird's wood pellet boiler represents the very latest in carbon neutral heating for use in domestic and light commercial applications.

Features

High efficiency
Firebird wood pellet boilers have efficiencies in the high 80's due to their highly efficient operation and well insulated boiler shell. The large chamber design ensures that the boiler does not clog up with ash.

Heating comfort
This wood pellet boiler is fully automatic in its operation. On start up, an electric heater ignites the pellets and the digital controller manages the entire operation. The boiler is fully modulating in that the feed rate of pellets is varied, depending on the boiler temperature and heating demand.

Ease of cleaning
All maintenance points are easily accessible and a set of cleaning tools and brushes are supplied. The burner is on a hinged door and can be opened by hand. The burner grate, which should be cleaned weekly, is fully retractable.

Automated control
The digital controller located at the top of the boiler is designed to be user friendly. The main boiler functions can be controlled from here and key system parameters entered.

Fuel

Only certified wood pellets approved to EN14961 may be burned in the Firebird wood pellet boilers. The below fuel characteristics must be adhered to.

• calorific value > 5 kW/kg (18 MJ/kg)
• diameter = 6 mm • max. length = 35 mm
• max. humidity = 8% • max. dust = 0,5%

Flue

Ensuring the correct size flue is critical to the operation of any biomass boiler. The chart on the right outlines the minimum flue diameter and height required for the different boiler outputs.
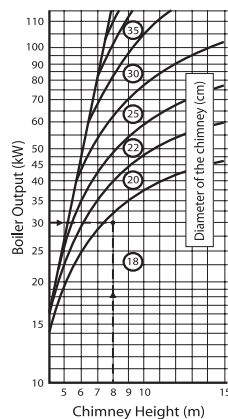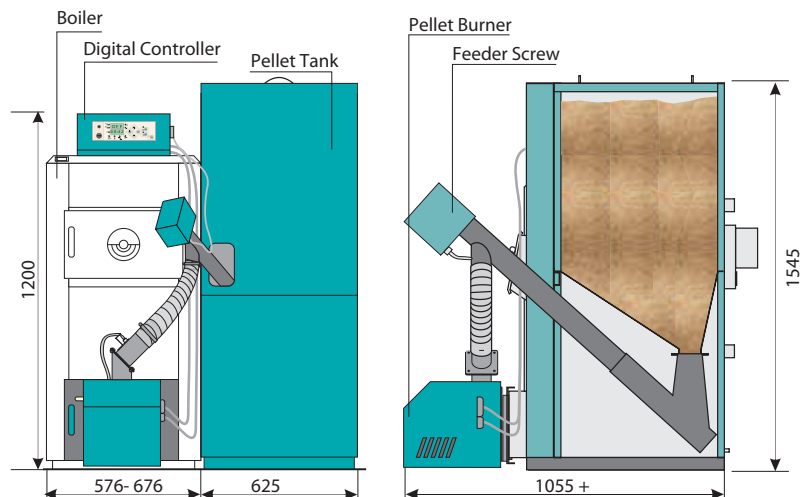
Technical Data

Model		25	35
Rated thermal output	(kW)	25	35
Boiler water content	(litres)	90	101
Boiler weight	(kg)	435	475
Flue diameter	(mm)	150	160
Power supply		230 V AC / 50Hz	
Outer dimensions (boiler & tank)			
Height	(mm)	1545	1545
Depth	(mm)	1055	1055
Width	(mm)	1201	1301

Sales Code	25	35
Wood Pellet Boiler	FWP025NKT	FWP035NKT
Wood Pellet Flue Kit	FWP025FLU	FWP035FLU
Wood Pellet Auger & Hopper	FWP000FED	FWP000FED

Boiler Output (kW) / Diameter of the chimney (cm) vs Chimney Height (m)

Boiler
Digital Controller
Pellet Tank
Pellet Burner
Feeder Screw

1200
576- 676
625
1055 +
1545

Wood Gasification Boiler

The Firebird wood gasification boiler represents the very latest in high efficiency wood burning.

Gasification is achieved in wood burning when gases released from the combusting wood are mixed with a regulated supply of oxygen to create a complete oxidation process. This results in extremely high combustion efficiencies and minimal ash waste.
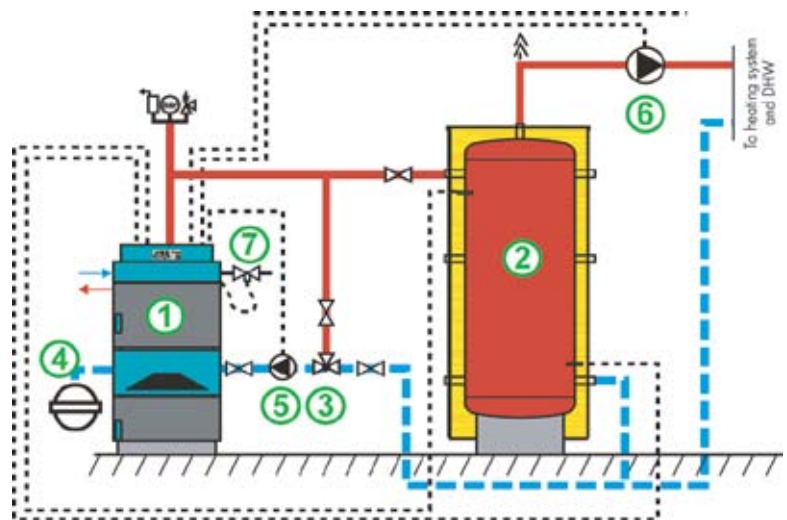
Wood gasification boilers can only be used to burn split logs or wood briquettes. Coal, peat, refuse, etc. can not be used in these boilers. The best woods are hard woods like Ash, Oak & Beech (moisture content must be 20% or less).
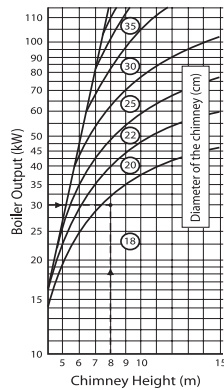
Accumulation Tank

An accumulation tank must be used in conjunction with the Firebird wood gasification boiler. The recommended sizing is a minimum 50 litres of water storage for every 1 kW of rated output. Firebird recommend a 2,000 litre tank.

Flue

Having the right draft and flue construction is critical to the operation of the wood gasification boiler. Flue height must be according to the chart (on right).

Boiler Output (kW) / Diameter of the chimney (cm) vs Chimney Height (m)

System layout

A suggested schematic diagram for a wood gasification boiler can be seen below. For an unvented (pressurised) system, a thermal safety valve must be installed.

1 - Wood Gasification Boiler
2 - Accumulation Tank
3 - Three Way Thermostatic Valve
4 - Expansion Vessel
5 - Boiler Pump
6 - Circulation Pump
7 - Thermal Safety Valve

Technical Data

Model		35
Rated thermal output	(kW)	35
Boiler water content	(litres)	96
Boiler weight	(kg)	515
Max. volume of wood	(litres)	132
Max. length of the log	(mm)	540
Flue diameter	(mm)	200
Depth	(mm)	1235
Height	(mm)	1300
Width	(mm)	685
Min. accumulator tank	(litres)	1750

Sales Code	
WGB035BLR	Wood Gasification Boiler 35
WGB200TNK	2000 Litre Accumulation Tank
WGB200KIT	200mm Wood Gas Twin Wall Flue Kit
WGB000PGS	Pump Changing System Ladomat 21
WGB000TSV	Thermal Safety Valve

WIDTH   DEPTH   HEIGHT
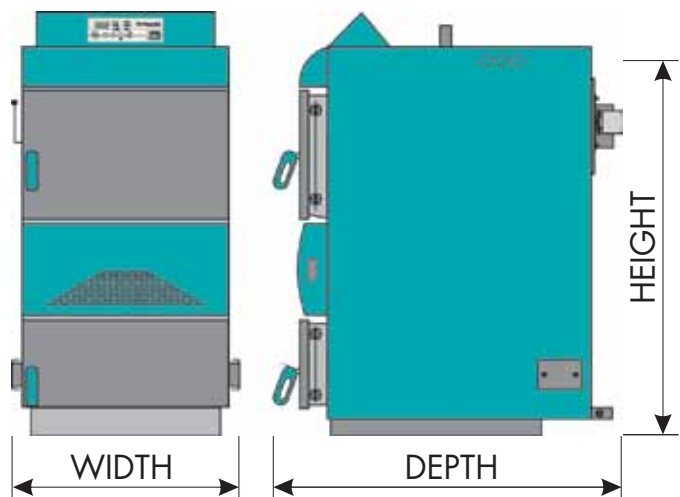
Warranty

Complete After-Sales Service

Firebird has always provided their customers with the highest levels of after sales care. All products are supported by a nationwide network of independent service engineers who are regularly trained on our appliances.

Boiler Passport

An OFTEC co-ordinated "Boiler Passport" booklet is included with every oil boiler shipped from our factory. This passport will stay with the boiler, much like a car's service log book. The commissioning certificate page is on multipart carbon paper and one copy must be completed by an OFTEC registered or competent, qualified engineer and returned to Firebird in the enclosed prepaid envelope within 10 days of commissioning.

Our Warranty Policy

OIL FIRED BOILERS

Firebird offers a 5 year warranty on the boiler shell and a 2 year warranty on all other parts from date of installation, provided installation has occurred within 12 months from date of purchase. The 5 year boiler shell warranty consists of labour and parts for the first 3 years and parts only in years 4 and 5. The warranty is conditional on the boiler being commissioned and operated correctly. To validate your warranty, Firebird require that the commissioning certificate page in the Boiler Passport is completed by an OFTEC registered or competent, qualified engineer and returned to Firebird within 28 days of installation and commissioning.

SOLAR

Firebird offers 5 years warranty on all solar collectors and 2 years warranty on all other parts from date of installation, provided installation has occurred within 12 months from date of purchase.

INSET STOVES

Firebird offers a 5 year warranty on the inset stove shell and a 2 year warranty on other parts from date of installation, provided installation has occurred within 12 months from date of purchase. The 5 year inset stove shell warranty consists of labour and parts for the first 3 years and parts only in years 4 and 5. The warranty is conditional on the stove being commissioned and operated correctly. To validate your warranty, Firebird require that the warranty registration form (at the back of the instruction manual) is completed by a competent, qualified engineer and returned to Firebird within 28 days of installation and commissioning.

BIOMASS BOILERS

Firebird offers 5 years warranty on the boiler shell and 2 years warranty on all other parts from date of installation, provided installation has occurred within 12 months from date of purchase.

Full terms and conditions of Firebird's warranty programme can be viewed on www.firebird.ie

www.firebird.ie
www.firebird-solar.com

REDUCE YOUR HEATING BILLS ?

FIREBIRD HAS YOUR HEATING SOLUTION

Energy Saving Heating Solutions

1 Enviromax Condensing Boilers
- Band A. • Biofuel compliant.
- Various models to choose from.
- Indoor & outdoor.
- **SAVE UP TO 25% ANNUALLY**

2 Envirosol Solar Thermal Systems
Solar energy is free and can deliver up to 70% of all hot water requirements. We have three models to choose from:
- CPK-7210N Flat Panel Collector.
- TZ58-1800 Heat Pipe Solar Collector.
- CVSKC-10 Vacuum Tube Collector.

Excelsior Twin Coil Tank - 215 Litre Tank / 305 Litre Tank

3 Oil Fired and Multifuel Range Cookers
- Central heating and room only models.
- Large main oven with even heat distribution.
- SEDBUK band A internal condensing boiler.

4 Biomass Range
- Wood Pellet Boiler.
- Wood Gasification Boiler.

5 Multifuel Backboiler and Dry Inset Stoves
- Highly efficient (up to 81% with backboiler and 75.6% for dry stove).
- Designed to fit into standard fireplace. • Solid multifuel options.
- 12kW - 16kW and 6.9kW - 8.2kW. • Glass air wash design.
- Solid Fuel Heat Exchanger to link your stove into a pressurised heating system.

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www.firebird.ie

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