



*The Boiler People*

## **INSTALLATION & SERVICING MANUAL FOR**

**50/70 – 70/90 – 90/120 – 120/150 – 150/200**  
BLUEBIRD BOILERHOUSE MODELS,  
GOLDBIRD KITCHEN MODELS  
& WHITEBIRD UTILITY ROOM MODELS

**50/90**

FRONT SERVICING BOILERS  
GOLDBIRD KITCHEN MODEL  
WHITEBIRD UTILITY ROOM MODEL

**200/250**

BLUEBIRD BOILERHOUSE MODEL

**50/70 – 70/90**

WHITEBIRD UTILITY ROOM SYSTEM BOILER

**50/70 – 70/90 – 90/120 – 120/150 – 150/200**  
KABIN PAK EXTERNAL BOILERHOUSE MODULES

**50/90**

SLIMLINE KABIN PAK  
EXTERNAL BOILERHOUSE MODULE

**50/70 – 70/90**

KABIN PAK BACK OUTLET  
EXTERNAL BOILERHOUSE MODULES

**300 – 400 – 500**

CONVENTIONAL FLUED  
INDUSTRIAL BLUEBIRD BOILERHOUSE MODELS

**LEAVE THESE INSTRUCTIONS WITH THE END USER**



*The Boiler People*

## **COMMISSIONING**

**\*THIS APPLIANCE MUST  
BE COMMISSIONED**

\*Failure to commission the boiler will invalidate the warranty.

After commissioning ensure that the pre-paid warranty registration card is completed and returned.

## **SERVICING**

To ensure continued reliable operation and fuel economy it is recommended that the boiler is serviced annually by an OFTEC registered technician.

## **NI CUSTOMERS ONLY**

Warmflow Engineering Service division (NI) provides an excellent back-up service, operating a team of OFTEC trained engineers who can meet all the servicing, commissioning and breakdown requirements for your appliance.

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# 1.0 User Instructions

## 1.1 Goldbird Models

### Thermostat Control

The recommended minimum thermostat setting is 65°C. Below this 'cold water corrosion' is likely to occur which can reduce the life of the heat exchanger and is not covered by the boiler warranty. The boiler thermostat is adjustable from 52°C to 88°C.

### Mains Indicator

The green mains lamp will be lit when there is power to the control box.

### H/L Reset

The yellow H/L reset lamp will be lit when the boiler has overheated and tripped the high limit thermostat, which then needs to be manually reset. If the high limit thermostat continues to trip, contact Warmflow or your service engineer/technician. The manual reset thermostat has a cut out point of 110°C.

### Lock-Out

The red lock out lamp will be lit when the burner has failed to fire and can be reset by pressing the illuminated red reset button on the burner control box.

## 1.2 Bluebird, Kabin Pak and Whitebird Models

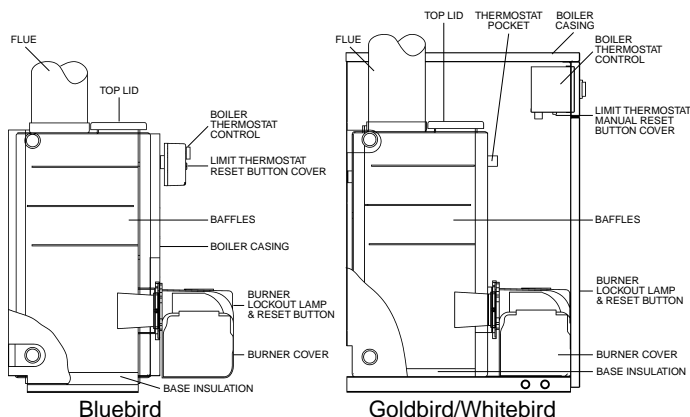
The recommended minimum thermostat setting is 65°C (thermostat setting 1). If the high limit thermostat operates it may be reset by removing the reset cover and pressing the reset button. If the burner goes to lockout it can be reset by pressing the illuminated red reset button on the burner control box. Combustible material must not be placed on top of the boilerhouse models or on top of the burner cover as the temperature of certain exposed components can occasionally reach 70°C. The boiler thermostat is adjustable from 60°C to 90°C and the manual reset limit thermostat has a set point of 110°C.

## 1.3 Servicing

It is recommended that the boiler is serviced annually by an OFTEC registered engineer.

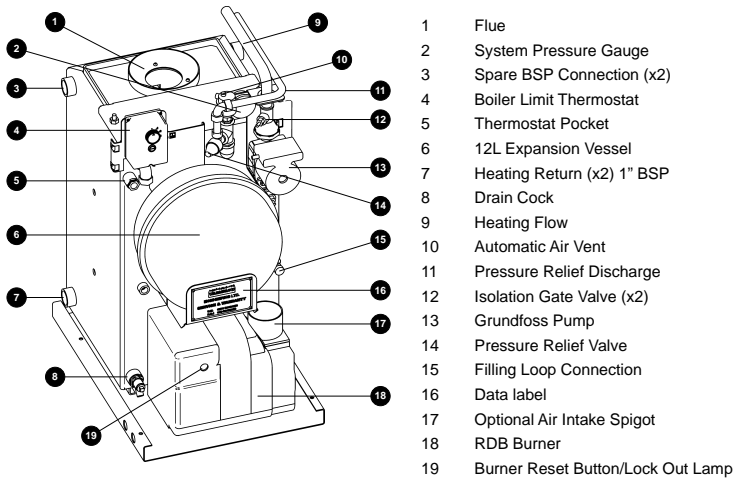
**WARNING:** No adjustments to externally situated boilers should be made where wet weather conditions prevail. In such conditions there may be a risk of ingress of water into the appliance, which could lead to component failure or electrocution.

## 1.4 Components – 50/70, 70/90, 90/120, 120/150, 150/200, 200/250

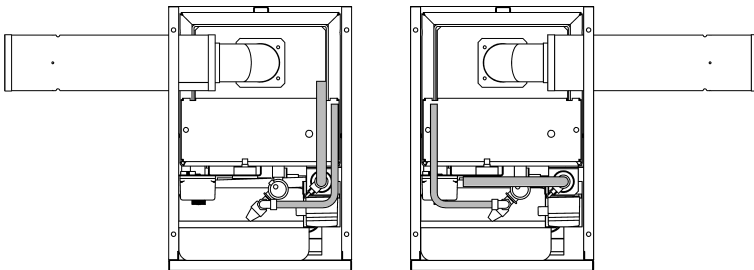


## 1.5 System Boiler

### 1.5.1 Components



### 1.5.2 Pipe Layout

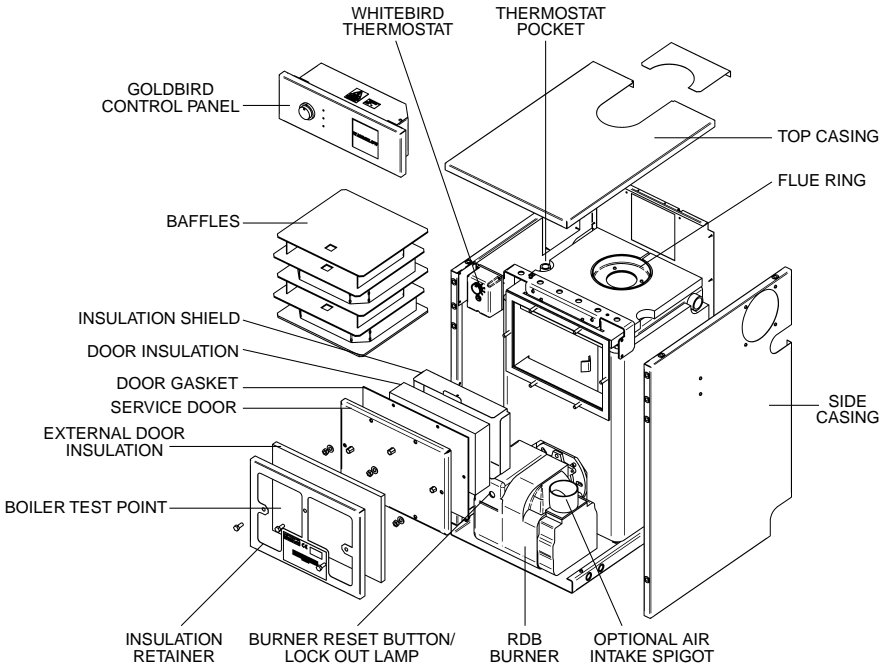


### 1.5.3 Mains Water Supply

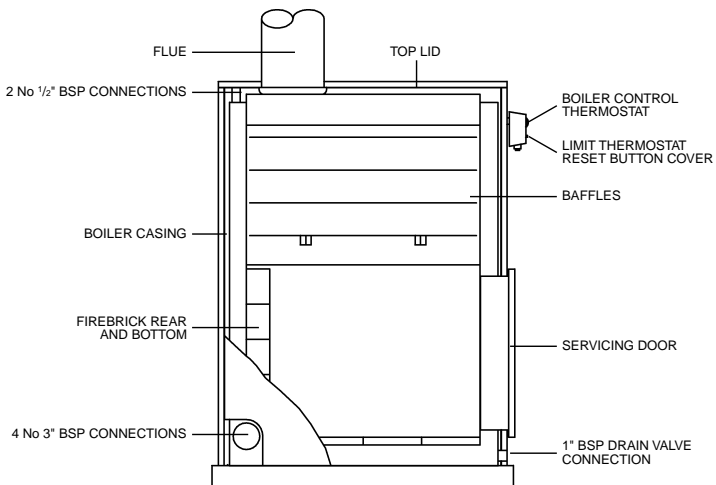
The mains water connection for the filling loop has been left free for the installer to fit a 15mm copper pipe. The pipe can be routed over the top of the boiler, down one of the side channels or through the cable entry grommets towards the front of the base tray.

**Note:** Also our domestic appliances have been independently tested and accredited as exceeding the minimum SEDBUK efficiency levels required for its type, in compliance with the Building Regulations Approved Document L1 2001 for England and Wales and the Building Standards (Scotland) Regulations 2001 Part J.

### 1.6 Components 50/90 Front Servicing Boiler

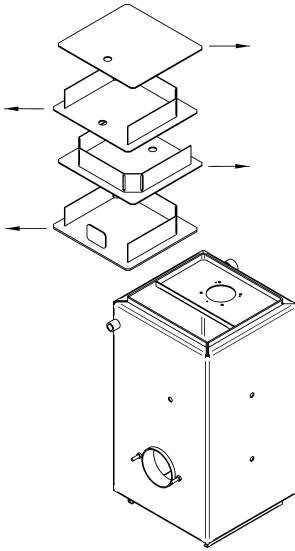


### 1.7 Components – 300, 400 and 500 BB Industrial Boilers (x 1000 Btu/hr)

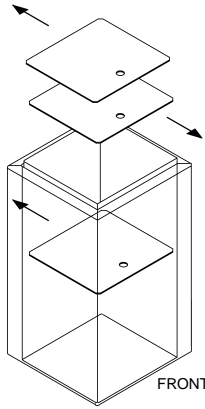


## 1.8 Baffles

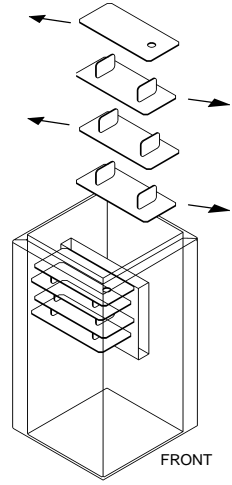
### 1.8.1 Top Servicing Boilers



50/90  
(4 in number)  
heavy baffle to the bottom

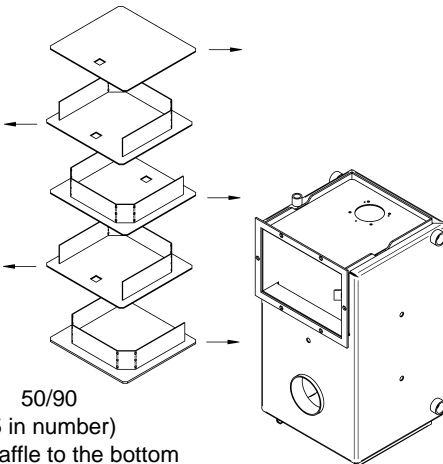


50/70  
(3 in number)



70/90 & 120/150 (8 in number)  
90/120, 150/200, 300, 400 & 500  
have a similar arrangement  
(12, 12, 12, 16 and 16  
baffles respectively)

### 1.8.2 Components 50/90 Front Servicing Boiler



50/90  
(5 in number)  
heavy baffle to the bottom

**Note:** Before firing make sure the baffles have not been dislodged in transit and are correctly positioned. To achieve maximum efficiency push the baffles in the direction of the arrows as shown.

## 2.0 Introduction

The boilers are fired by a pressure jet oil burner which is covered by the manufacturer's parts and labour warranty valid for one year (from boiler date stamp). Optional extended guarantees covering parts and labour are also available (although not applicable to the Republic of Ireland).

Warmflow oil fired boilers are designed to burn 28 second redwood No 1 (Kerosene Class C2) fuel or with some adjustment 35 second redwood No 1 (Gas Oil Class D). In order to comply with current building regulations only kerosene must be burned when used with low level flue or low level balanced flue. The 400 and 500 Bluebirds are only suitable for use with 35 second redwood No 1 (Gas Oil Class D).

The boiler shells are fabricated from the best quality mild steel plate electrically welded and pressure tested to 4.5 bar (65 PSI) making them suitable for either open or pressurised systems (max working pressure 1.5 bar). Note that all industrial boilers are tested to 6 bar (90 PSI). They incorporate two flow and return connections on each side of the boiler for connection to the central heating and domestic hot water systems. Each shell is covered by the manufacturer's warranty of 5 years (effective from date stamped on warranty label) but does not include burner, labour, handling or shipping.

The manufacturers guarantees are void if the appliance is not installed and commissioned and serviced in accordance with the recommendations made herein.

## 2.1 General Requirements

The installation of the boiler must be in accordance with the following regulations.

BS5410 : PART 1 : 1997 Code of Practice for oil firing.

BS5410 : PART 2 : 1977

BS5449 : PART 1 : 1977 Forced Circulation Hot Water Systems.

BS7593 : 1992 Treatment of water in domestic hot water central heating systems.

Current Building Regulations: Part J England and Wales  
Part F Section III Scotland  
Part L Northern Ireland

Current IEE Wiring Regulations:

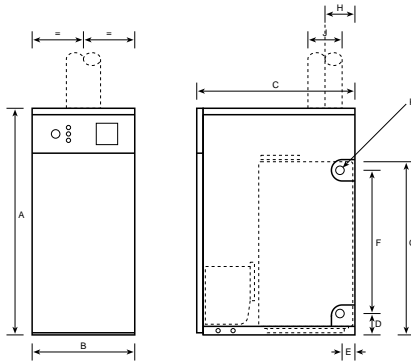
The heating system should be installed by a competent installer in accordance with the recommendations laid down by HVCA and a sound engineering practice.

**In order to comply with GB building regulations OFTEC forms CD10 for installations and CD11 for commissioning should be left with the customer.**



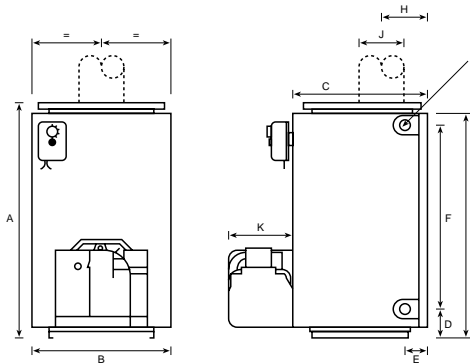
### 3.0 Dimensions

#### 3.1 Goldbird Kitchen, Whitebird and Whitebird System Utility Room Models (including front servicing boilers)



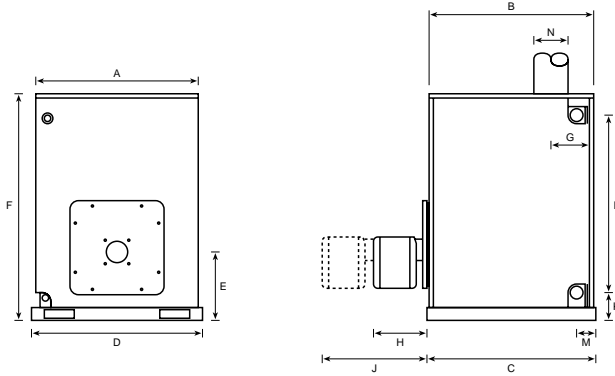
MODEL	OUTPUT (kW)	A	B	C	D	E	F	G	H	J	K
50-70	14.6-20.5	865	413	599	90	59	554	664	128	127	4x1"
70-90	20.5-26.4	865	413	599	90	59	554	664	128	127	4x1"
90-120	26.4-35.2	865	595	599	90	59	541	664	128	127	4x1 1/2"
120-150	35.2-44.0	1168	495	785	102	72	809	956	128	127	4x1 1/2"
150-200	44.0-58.6	1168	495	785	102	72	809	956	128	127	4x1 1/2"

#### 3.2 Bluebird Boilerhouse Models



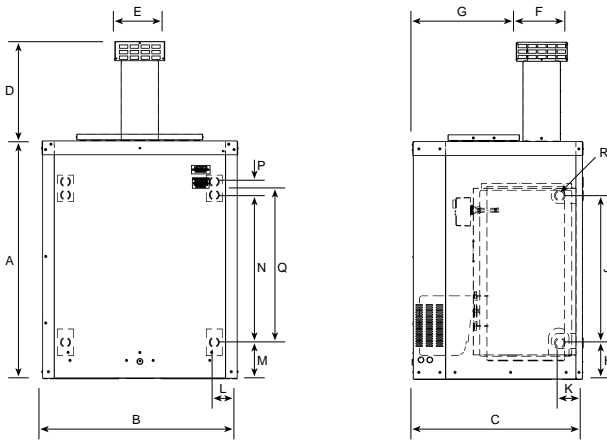
MODEL	OUTPUT (kW)	A	B	C	D	E	F	G	H	J	K	L
50-70	14.6-20.5	688	405	387	88	62	554	662	130	127	188	4x1"
70-90	20.5-26.4	688	405	387	88	62	554	662	130	127	188	4x1"
90-120	26.4-35.2	688	585	392	88	67	541	662	138	127	188	4x1 1/2"
120-150	35.2-44.0	965	490	530	102	72	809	956	119	127	188	4x1 1/2"
150-200	44.0-58.6	965	490	530	102	72	809	956	119	127	246	4x1 1/2"
200-250	58.6-73.3	965	490	530	102	72	809	956	139	152	246	4x1 1/2"

### 3.3 Industrial Bluebird Models



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N
300	814	824	864	864	432	1313	263	272	412	166	1032	111	203
400	934	934	974	974	407	1313	263	306	446	166	1032	111	203
500	1062	1072	1085	1085	464	1570	297	321	461	170	1466	102	203

### 3.4 Kabin Pak

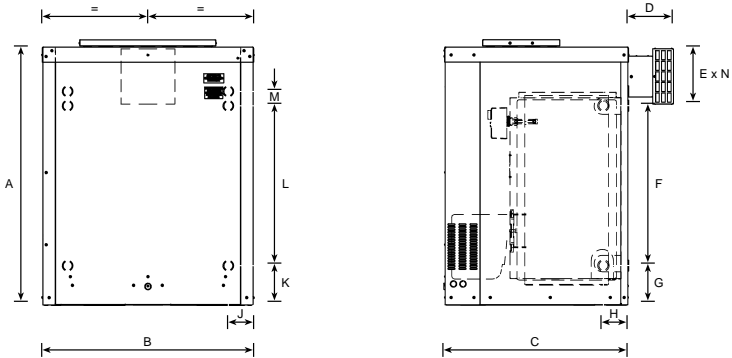


MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
50-70	892	732	636	373	188	191	390	137	554	84	86	137	554	50	—
70-90	892	732	636	373	188	191	390	137	554	84	86	137	554	50	—
90-120	892	942	636	373	188	191	390	137	541	84	86	137	554	50	—
120-150	1089	902	836	373	188	191	602	151	809	96	86	191	—	—	729
150-200	1089	902	836	373	188	191	602	151	809	96	86	191	—	—	729

The Kabin Pak comes factory fitted with a Warmflow Bluebird Boiler and insulated low level flue kit complete with a terminal guard.

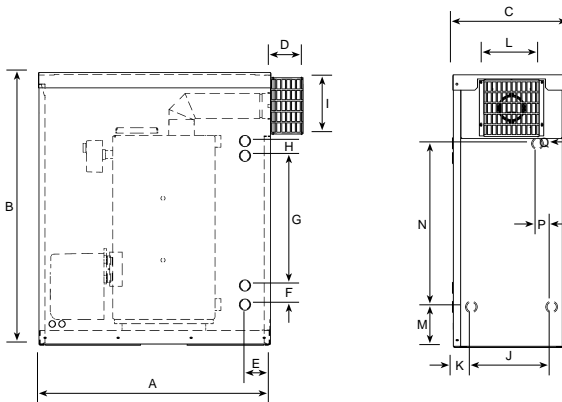
An adaptor is available to allow the low level flue to be extended using standard twin wall round flue. Only the outer flue and flue end cap need be removed.

### 3.5 Kabin Pak Back Outlet



MODEL	A	B	C	D	E	F	G	H	J	K	L	M	N
50-70	892	732	636	156	191	554	138	85	85	137	554	50	188
70-90	892	732	636	156	191	554	138	85	85	137	554	50	188

### 3.6 Slimline Kabin Pak



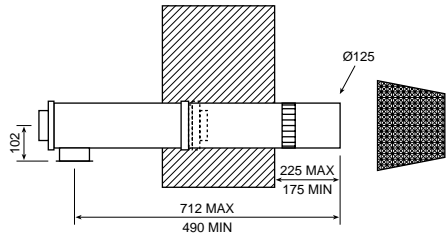
MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
50-90	784	925	398	109	86	65	440	50	190	272	61	188	134	554	48

When installing a Slimline Kabin Pak against a wall allow 600mm to the front and rear of the appliance for servicing.

### 3.7 Flue Options

#### 3.7.1 'Easy Fit' Low Level Balanced Flue

The horizontal dimension can be increased up to an additional 1200mm using a combination of long extension pieces (600mm) and short extension pieces (300mm).



#### 3.7.2 'Easy Fit' High Level Balanced Flue

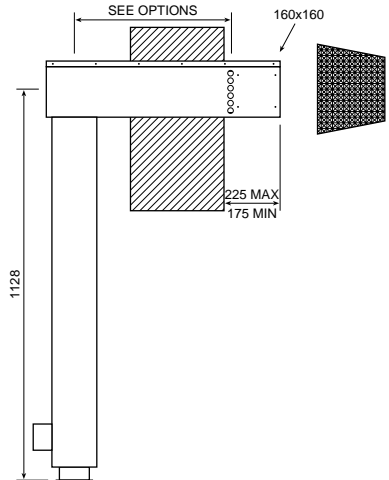
The HLBF is available in 4 fixed horizontal lengths which are:

Option 1 – 455mm

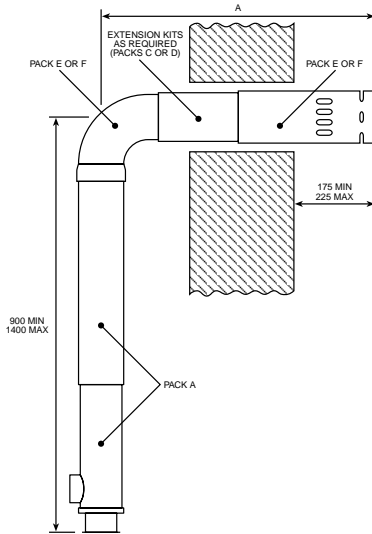
Option 2 – 655mm

Option 3 – 585mm

Option 4 – 785mm



### 3.7.3 Easy Fit Telescopic High Level Balanced Flue (HLBF-R)



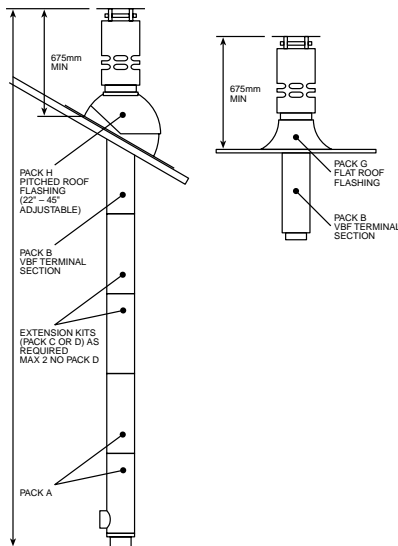
#### ALL MODELS

DIM A		FLUE PACKS
MIN	MAX	
435	610	A + E
560	860	A + F
735	910	A + C + E

#### 50/70, 70/90 & 90/120 MODELS ONLY

DIM A		FLUE PACKS
MIN	MAX	
860	1160	A + C + F
1035	1210	A + C + C + E
1160	1510	A + C + C + F
1385	1560	A + D + E
1510	1860	A + D + F

### 3.7.4 Easy Fit Vertical Balanced Flue (VBF)



#### ALL MODELS

FLUE HEIGHT		FLUE PACKS
MIN	MAX	
1340	1840	A + B
1640	2140	A + B + C
1940	2440	A + B + C + C
2290	2740	A + B + D
2590	3040	A + B + D + C
2890	3340	A + B + D + C + C
3240	3740	A + B + D + D

**Note:** When using a VBF or HLBF-R on a 120/150 or 150/200 model ensure that the boiler is fitted with a RDB3 burner.

## 4.0 Installation

The boiler installation must be in compliance with BS 5410 and the Building Regulations.

**Failure to install and commission in accordance with the instructions contained within this booklet will invalidate the warranty.**

## 4.1 Service Access

24" (600mm) clearance should be provided above and in front of the boiler (and the rear for Slimline Kabin Paks) to allow for routine servicing. When top servicing boilers are placed under a worktop ensure that the worktop is easily removed.

## 4.2 Hearth

The boiler hearth temperature is between 50°C and 85°C to comply with the Building Regulations. The boiler should be stood on a rigid, non-porous, non-combustible base, which is not softened by warmth. For the heavier industrial boilers it would be advisable to have a level concrete base raised 50mm above floor level.

## 4.3 Heating System

The heating system should be installed to HVCA current codes of practice and the recommendations made in the relevant British Standards.

The use of inappropriate pipe sizes and incorrect plumbing leading to system and boiler noise is not covered under the boiler warranty.

It is recommended that the flow and return pipes are connected on opposite sides of the boiler.

It is recommended that new and existing systems are commissioned in accordance with BS7593 : 1992 'Treatment of water in central heating systems'. It is recommended that a non-corrosive commissioning cleanser is used when flushing the system.

We would also recommend that the system is further treated with a corrosion inhibitor.

These products should be used strictly in accordance with the manufacturers instructions.

In areas of hard water a suitable water softener would also be recommended.

## 4.4 Sealed Systems

All Warmflow boilers are suitable for use on a sealed heating system. It is recommended that a CE approved pressure relief valve (PRV) set at 3 bar is fitted to the system. The industrial bluebirds can be fitted with a 4 bar PRV. On the system boiler a 3 bar PRV has been factory fitted.

#### 4.5 Air Vents

On the system boiler an automatic air vent complete with its own check valve is fitted to the top of the boiler heat exchanger. It is recommended that an air vent is fitted at the highest point in the system. However where the pipework comes off the boiler and drains down an automatic airvent should be fitted to the top of the boiler.

#### 4.6 Drain Cock

Drain cock(s) should be fitted to the lowest points in the system to enable the system to be fully drained. On the system boiler a drain cock has been fitted to the system boiler heat exchanger.

#### 4.7 Expansion Vessels

Refer to BS 7074: part 1 or BS 5449 for details of the pressure vessel sizing. The values given in the table are for a total system values which includes the primary water capacity. On the system boiler a 12 litre expansion vessel charged to 0.5 bar is supplied. This can accommodate a maximum system volume of approximately 150 litres. If this volume is exceeded an additional vessel will be required.

VESSEL VOLUMES													
INITIAL CHARGE	0.5	2.1	4.2	6.3	8.3	10.5	12.5	14.6	16.7	18.7	20.8	22.9	25.0
	1.0	2.7	5.4	8.2	10.9	13.6	16.3	19.1	21.8	24.5	27.2	30.0	32.7
	1.5	3.9	7.8	11.7	15.6	19.5	23.4	27.3	31.2	35.1	39.0	42.9	46.8
TOTAL SYSTEM VOLUME	25	50	75	100	125	150	175	200	225	250	275	300	

#### 4.8 System Filling

Water loss from a sealed system, as indicated by a reduction in pressure on the pressure gauge, may be made up through a filling loop, however the cause of the water loss should be fully investigated and corrected.

After filling, vent all air from the system. Ensure the caps on the automatic air vents are loose, bleed the circulating pump and disconnect the temporary filling loop.

As standard, a filling point complete with a filling loop has been included within the system boiler. A system pressure, when cold, of 1 bar is recommended.

#### 4.9 System Pressure

The pressure relief discharge shall be positioned away from any electrical components. No other valves should be positioned between the relief valve and the discharge, and the discharge pipes should not be used for any other purposes. The discharge pipe must be plumbed to an external drain in a position where the discharge can be seen but cannot cause any injury or damage.

Where there is a catastrophic loss of water from the system the boiler thermostats may fail to operate which would result in serious damage to the appliance. To prevent this it is recommended that a low pressure cut out switch set at 0.2 bar is fitted to the system and wired in series with the boiler thermostats.

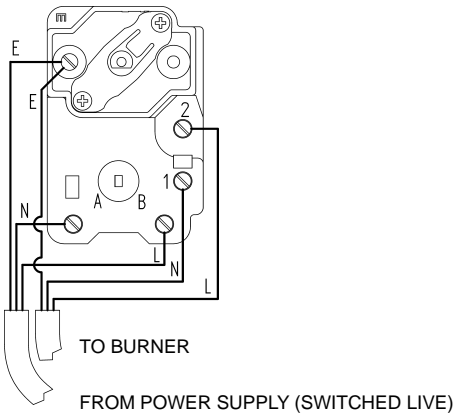
## 5.0 Electricity Supply

220 – 240V. 1PH, 50 Hz

The boiler/burner and other external electrical equipment should be wired with heat resistant cable via a fused double pole isolating switch which should be fitted with a 5 amp fuse.

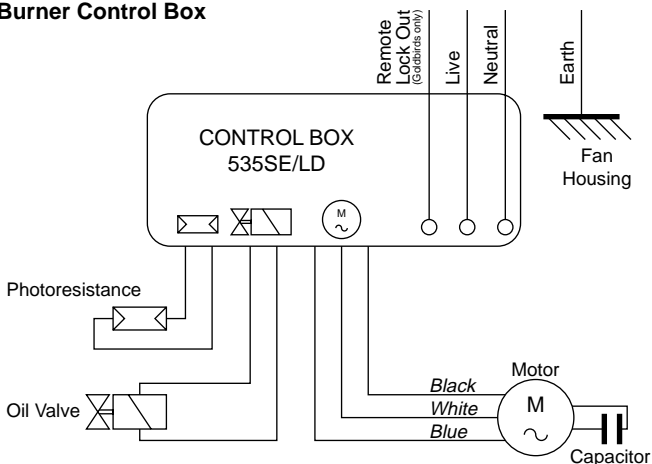
The appliance must be effectively earthed and all external wiring should comply with current IEE Regulations.

### 5.1 Dual Immersion Thermostat (Bluebird and Whitebird Boilers)



**Warning:** Do not fit any other wires or loop wires to this stat as this will bypass the thermostats.

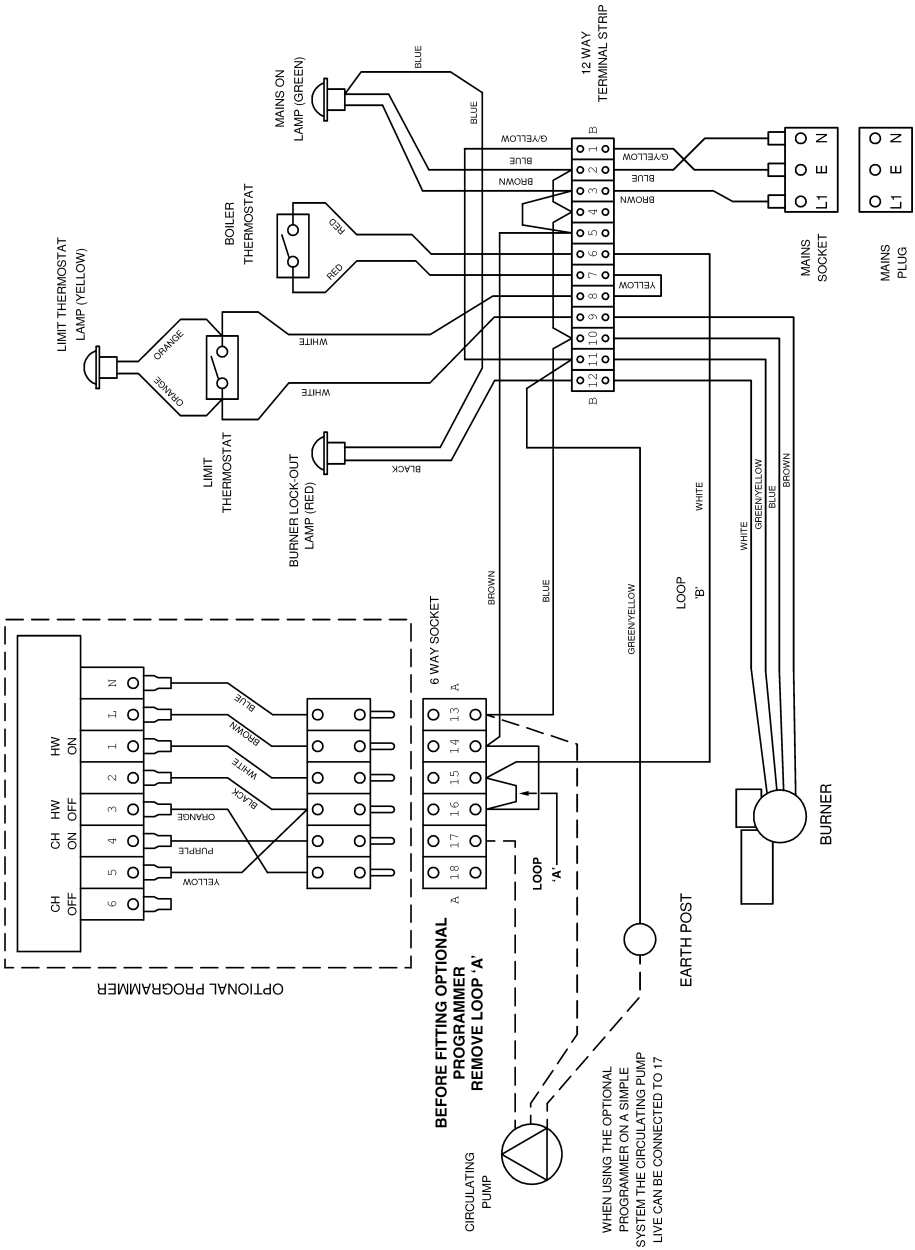
### 5.2 RDB Burner Control Box



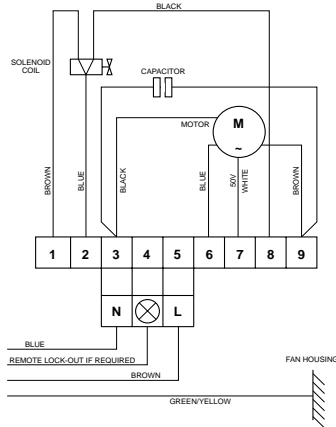
**Note:** A remote lock out lamp is only factory fitted wired on Goldbird models.



### 5.3 Control Panel Wiring (Goldbird Boilers)

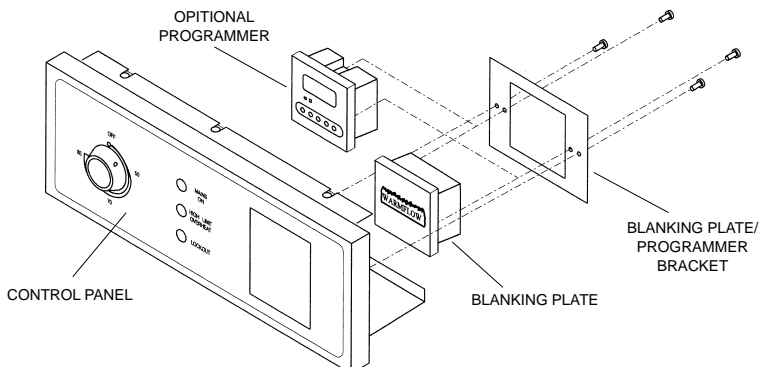


## 5.4 R40 Burner Control Box (G10 & G20S Burners)



## 5.5 Installation of Warmflow Optional Programmer (Goldbird Boilers only)

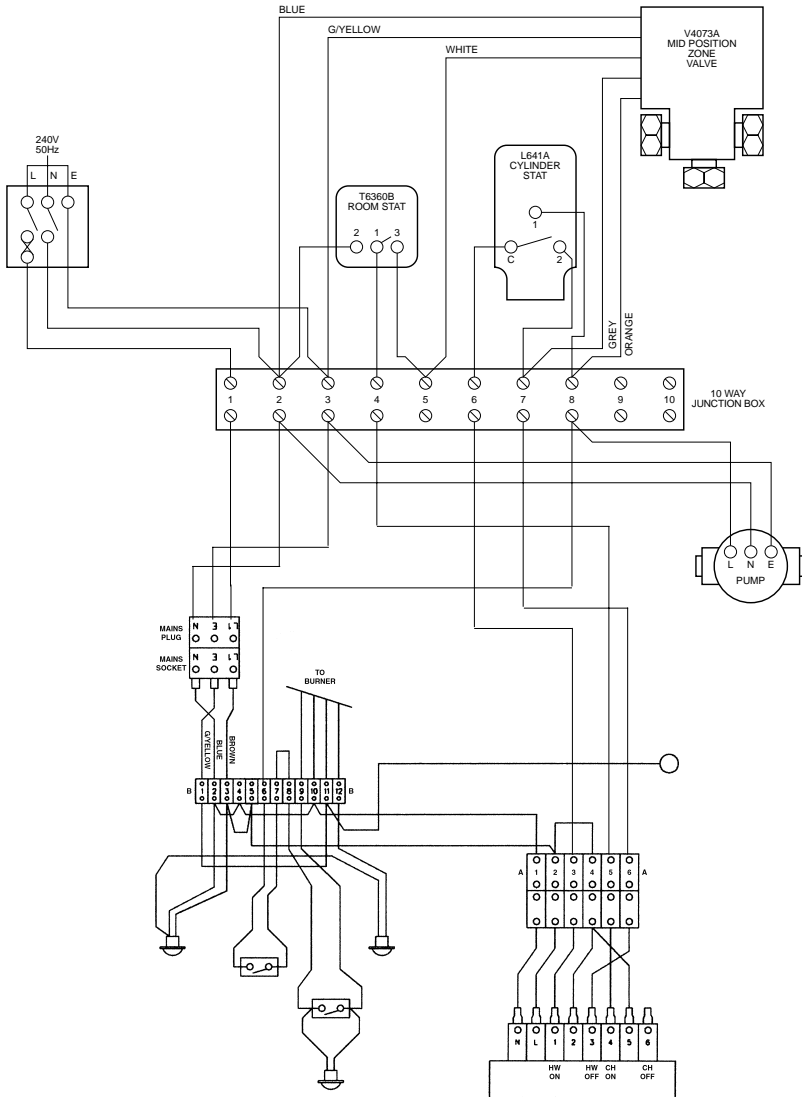
1. Isolate power supply.
2. Remove top casing (4 studs) and control panel cover (1 screw).
3. Remove 2 screws securing blanking plate/programmer bracket. Remove bracket and blanking plate from the control panel.
4. Disconnect the blanking plate from bracket (2 screws).
5. Feed programmer harness through the hole in the bracket. The programmer is secured to the bracket with 2 screws.
6. Remove loop 'A' between 15 and 16 on the wiring block.
7. Connect the 6 pin plug into the socket.
8. Locate the programmer into the hole in the fascia and secure the bracket to the control panel (2 screws).
9. Set the time switch on the rear of the programmer to 'G' or 'P' (see programmer instructions).
10. Replace the control panel cover and reconnect electrical supply.
11. Operational instructions are included in this handbook.



## 5.6 System Wiring Diagrams – Goldbird Boilers with Internal Programmer

**Note:** Bluebirds and Whitebirds should be treated as simple boilers and wired as per the control pack manufacturers instructions.

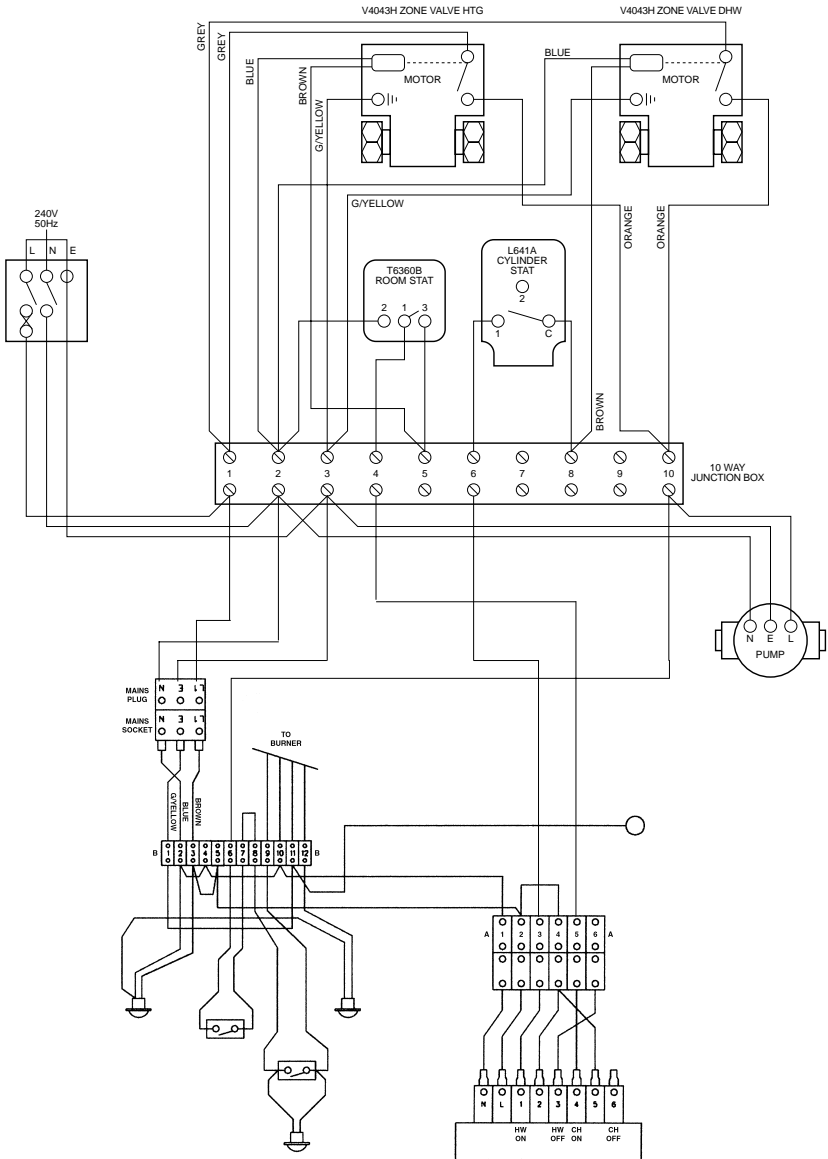
### 5.6.1 Honeywell 'Y' Plan – Independant CH&DHW (fully pumped)



Before fitting the programmer remove loop 'A' from A3 and A4 and loop 'B' from A3 and B6 on the terminal block. The switch on the programmer is to be set to 'P'.

### 5.6.2 Honeywell 'S' Plan – Independant CH&DHW (fully pumped)

**Note: Bluebirds and Whitebirds should be treated as simple boilers and wired as per the control pak manufacturers instructions.**



Before fitting the programmer remove loop 'A' from 15 and 16 and loop 'B' from 15 and 6 on the terminal block. The switch on the programmer is to be set to 'P'.

## 6.0 Technical Data

### 6.1 Domestic Bluebirds, Whitebirds and Goldbirds

MODEL	50/70			70/90			90/120			TOP SERVICING			FRONT SERVICING		
	Output Range	kw	14.6 – 20.5	mid	max	20.5 – 26.4	mid	max	26.4 – 35.2	mid	max	14.6 – 26.4	mid	max	14.6 – 26.4
<b>RANGE SETTING</b>															
Nominal Heat	kw	20.0	23.3	26.1	29.3	36.2	39.5					23.3	29.3		
Input	Btu	68,200	79,600	88,900	100,000	126,600	134,800					79,600	100,000		
Nominal Heat	kw	17.6	20.5	23.4	26.4	32.2	35.2					17.6	26.4		
Output	Btu	60,000	70,000	80,000	90,000	110,000	120,000					70,000	90,000		
Burner		RDB1		RDB1		RDB1		RDB1				RDB1		RDB1	
Head		LD2		LD3		LD3A		LD3				LD3		LD3	
Flue Size	mm	100 or 127		100 or 127		127		100 or 127				100 or 127		100 or 127	
Dia	in	4 or 5		4 or 5		5		4 or 5				4 or 5		4 or 5	
NFGT (max output)	°C	220		225		220		220				230		200	
Max CO <sub>2</sub>	%	11 – 11.5		11 – 11.5		11 – 11.5		11 – 11.5				11 – 11.5		11 – 11.5	
Smoke	Bacarach	0 – 1		0 – 1		0 – 1		0 – 1				0 – 1		0 – 1	
Nozzle	make			Danfoss 60°S				Danfoss 60°S				Danfoss 60°S		Danfoss 60°S	
(Kerosine)	size	0.5	0.6	0.65	0.75	0.85	1.0					0.6	0.75	0.6	0.75
Pump	bar	8	8	8	8	9	8					8	8	8	8
Pressure	psi	116	116	116	116	145	116					116	116	116	116
Nozzle	make			Danfoss 60°S				Danfoss 60°S				Danfoss 60°S		Danfoss 60°S	
(Gas Oil)	size	0.4	0.5	0.5	0.6	0.65	0.75					0.4	0.6	0.4	0.6
Pump	bar	10	11	12	12	12	12					11	12	11	12
Pressure	psi	145	160	175	175	175	175					160	175	160	175
Approx Fuel	L/h	1.91	2.43	2.73	3.15	3.50	4.11					2.43	3.15	2.43	3.15
Flow Rate	gals/h	0.42	0.53	0.60	0.69	0.77	0.90					0.53	0.69	0.53	0.69
Water Connections		1" BSP x 4		1" BSP x 4		1 1/2" BSP x 4		1" BSP x 4				1" BSP x 3		1" BSP x 4	
Water	litres	19		21		29		19				19		19	
Content	gallons	4.2		4.6		6.4		4.2				4.2		4.2	
Max Water	mbar	3.1		3.1		3.1		3.1				3.1		3.1	
resistance at 20°C T															
Max Water	mbar	21.0		21.0		21.0		21.0				21.0		21.0	
resistance at 10°C T															
Boiler Weight (dry)	kg	90		110		130		95				100		100	
Boiler Weight (wet)	kg	110		132		159		115				115		115	
Sedbuk Band		C		C		C		C				C		C	

<b>MODEL</b>		<b>120/150</b>		<b>150/200</b>		<b>200/250</b>	
Output Range	kW	35.2 – 44.0		44.0 – 58.6		58.6 – 73.3	
<b>RANGE SETTING</b>		<b>mid</b>	<b>max</b>	<b>mid</b>	<b>max</b>	<b>mid</b>	<b>max</b>
Nominal Heat	kW	43.7	48.4	55.1	65.1	71.7	81.4
Input	Btu	149,000	165,000	188,000	222,222	244,525	277,870
Nominal Heat	kW	39.6	44.0	49.8	58.6	64.5	73.3
Output	Btu	135,000	150,000	170,000	200,000	220,000	250,000
Burner F		RDB2		RDB3		RDB4	
Head Position		—		2		2.5	
Flue Size	mm	127		127		152	
Dia	in	5		5		6	
NFGT (max output)	°C	190		195		205	
CO <sub>2</sub>	%	11.0 – 11.5		11.0 – 11.5		11.0 – 11.5	
Smoke	Bacarach	0 – 1		0 – 1		0 – 1	
Nozzle	make	Danfoss 60°S					
(Kerosine)	size	1.1	1.25	1.35	1.5	2.0	2.5
Pump	bar	8	8	10	8	8	8
Pressure	psi	116	116	145	116	116	116
Nozzle	make	Danfoss 60°S					
(Gas Oil)	size	0.85	1.0	1.25	1.35	1.5	2.0
Pump	bar	12	12	12	13	12	12
Pressure	psi	174	174	190	190		
Approx Fuel	L/h	45	5.1	5.7	6.8	8.0	10.2
Flow Rate	gals/h	1.0	1.12	1.25	1.5	1.75	2.25
Water Connections		1 1/2" BSP x 4		1 1/2" BSP x 4		1 1/2" BSP x 4	
Water	litres	45		50		50	
Content	gallons	9.9		11		11	
Max Water	mbar	3.1		3.1		3.1	
resistance at 20°C T							
Max Water	mbar	21.0		21.0		21.0	
resistance at 10°C T							
Weight (empty)	kg	165		180		180	
Weight (full)	kg	210		230		230	
Sedbuk Band		C		C		—	

## 6.2 Industrial Bluebirds

MODEL		300	400	500
Output Range	kW	88.0	117.2	146.6
Nominal Heat	kW	97.7	130.2	162.8
Input	Btu	333,333	444,444	555,555
Nominal Heat	kW	88.0	117.2	146.6
Output	Btu	300,000	400,000	500,000
Burner		G10	G20S	G20S
Head		3.5	2	3.5
Flue Size	mm	203	203	203
Dia	in	7 or 8	7 or 8	7 or 8
NFGT (max output)	°C	195	190	190
CO <sub>2</sub>		11.0	11.0	11.0
Smoke	Bacarach	0 – 1	0 – 1	0 – 1
Nozzle	make	Danfoss 60°S		
(Kerosine)	size	2.5	—	—
Pump	bar	10	—	—
Pressure	psi	145	—	—
Nozzle	make	Danfoss 60°S		
(Gas Oil)	size	2.0	2.5	3.5
Pump	bar	12	12	12
Pressure	psi	175	175	175
Approx Fuel	L/h	10.2	13.6	17.0
Flow Rate	gals/h	2.25	3.0	3.75
Water Connections x 4		3" BSP	3" BSP	3" BSP
Water	litres	188	272	411
Content	gallons	41.4	59.8	90.5
Max Water	mbar	3.1	3.1	3.1
resistance at 20°C T				
Max Water	mbar	21.0	21.0	21.0
resistance at 10°C T				
Weight (empty)	kg	782	1,045	1,431
Weight (full)	kg	970	131	1,842

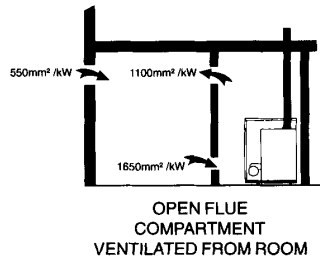
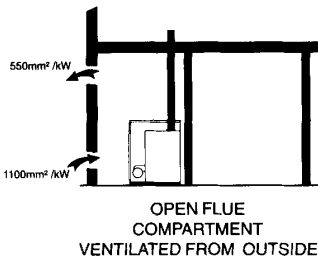
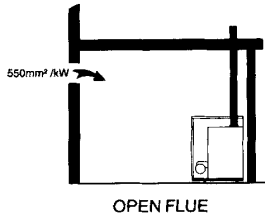
## 7.0 Air supply for combustion and ventilation (see BS 5410)

### 7.1 Open Flue Boilers

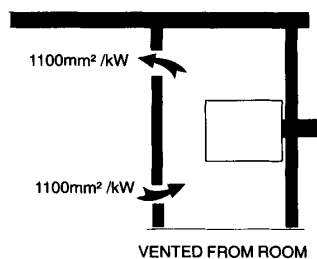
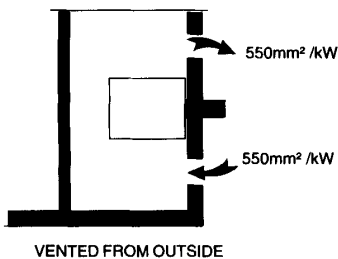
When the boiler is sited in a cellar where the only access for combustion and ventilation air is at high level then the combustion air should be ducted to low level.

#### Combustion Air Supply

##### Boiler in Room



### 7.2 Balanced Flue Boilers



#### Air Supply for Ventilation

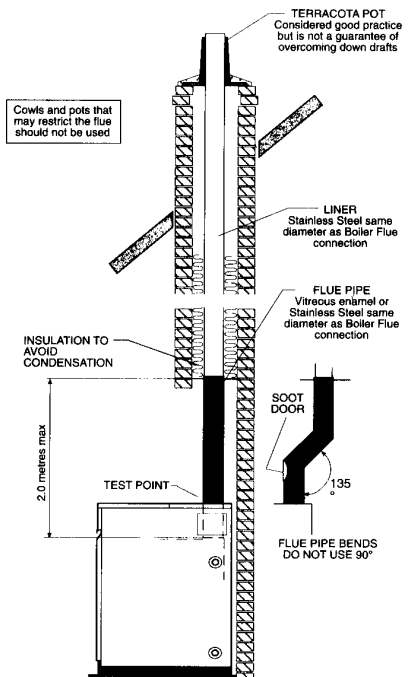


## 8.0 Flues

### 8.1 Conventional Flues

The flue should be designed in accordance with the local bye-laws and the Clean Air Act. Draught stabilisers are not recommended for oil fired boilers. Sharp bends or horizontal runs should be avoided and the flue should terminate 2 feet (600mm) above the ridge of the dwelling. Terminals which restrict the discharge or allow ingress of water should be avoided.

It is recommended that when connecting to an existing masonry chimney a flexible stainless steel liner should be used. The annular space must be sealed top and bottom and loosely filled with insulation.



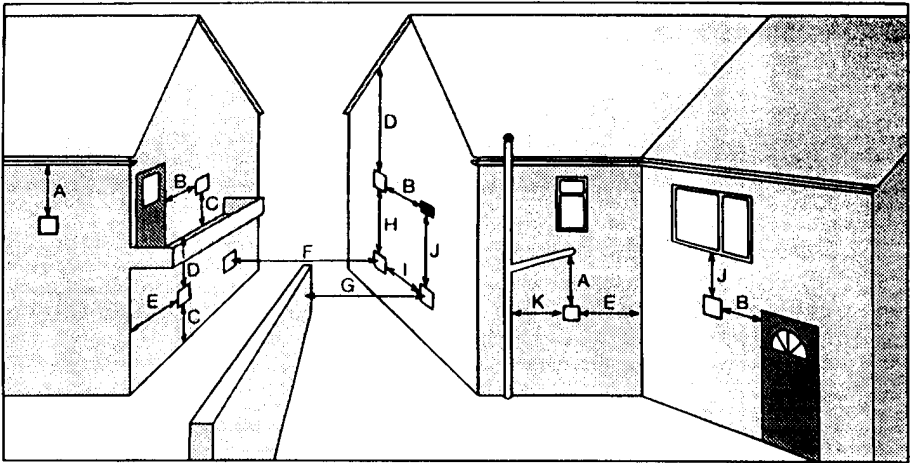
Typical Conventional Flue with Brick Chimney

### 8.2 Low Level Balanced Flues/Kabin Pak Flues

Attention should be given to the position of the flue discharge; we recommend the following guidelines be adopted.

1. The flue should not discharge beneath opening windows or within 2 metres of other accesses to the building.
2. The flue should not discharge near internal/external corners of the building where turbulent wind conditions could occur.
3. The terminal should not discharge over property boundaries.
4. Discharge into narrow passageways should be avoided.
5. In positioning the flue the wind direction should be considered.
6. The actual siting of the flue should be determined by the installer after consultation with the householder.

**INSTALLATION IN EXPOSED POSITIONS IS NOT RECOMMENDED**

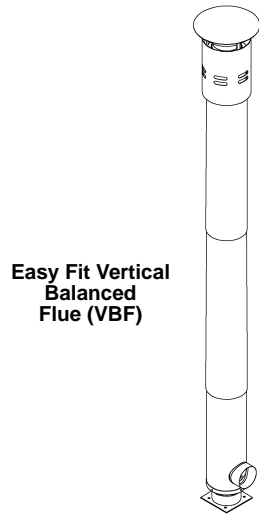
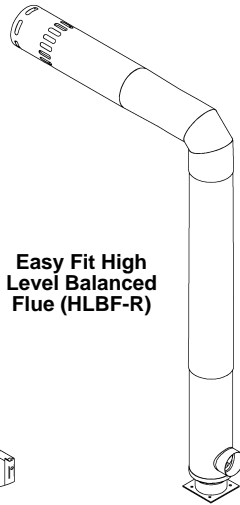
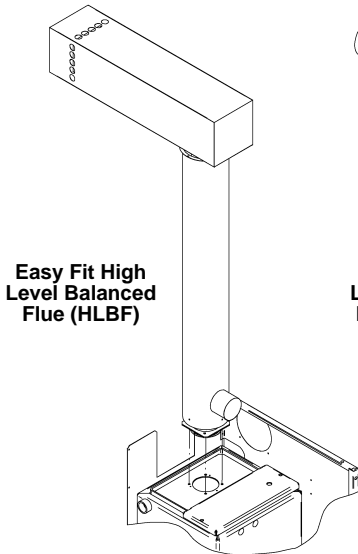
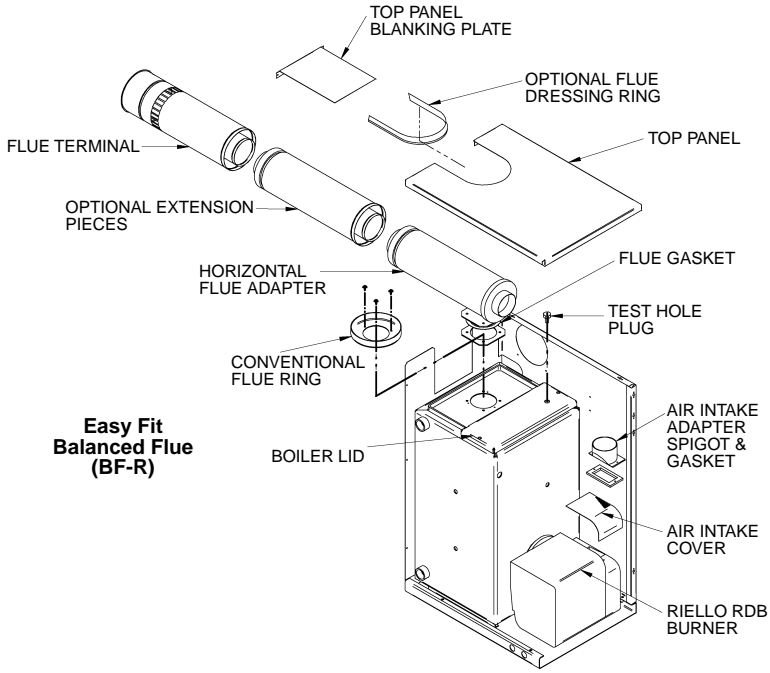


Terminal Position	Min Distance	
A	Below gutters, soil pipes or drain pipes	1,000
B	From a door, window or air vent	600
C	Above ground, flat roof or balcony level	600
D	Below eaves or balconies	1,000
E	From an internal or external corner	600
F	From a terminal facing the terminal	600
G	From a surface facing the terminal	600
H	Vertically from a terminal on the same wall	1,500
I	Horizontally from the terminal on the same wall	600
J	Directly below an opening, air brick, window, etc.	600
K	From a vertical drain pipe or soil pipe	1,000
L	From a vertical structure on the side of the terminal	750

**These are minimum dimensions and are only quoted as a guideline but they will satisfy the requirements of all UK Building regulations.**

**Where the flue terminal is within 1 metre of any plastic material, such material should be shielded from the effects of the combustion products of the flue.**

### 8.3 Installation of Flue



### 8.3.1 Installation of a Flue (BF-R, HLBF-R, VBF)

1. Make a suitable sized hole in the wall or ceiling for the flue kit. Add the dimensions given on pages 7 (Dimension G) and 10 (Flue Vertical Dimension). The cavities around the opening must be sealed and protected by a non-combustable sleeve.
2. Remove the top panel (kitchen and utility models) and the combustion chamber lid.
3. Remove the flue ring from the top of the boiler (3 screws) ensuring that any remaining silicone sealant has been cleaned away.
4. Carefully fit the inner and out seals to the flue adaptor.

**Note:** After fitting the seals to the flue smear them with soap or any suitable lubricant which does not react with the silicone rubber.

5. Place the gasket correctly on the boiler and locate the flue adaptor over this, fixing it in position using the nuts and bolts provided. For BF-R side outlet options on white case boilers it will be necessary to manoeuvre the adaptor through the side panel before fixing it to the boiler after the blanking plate has been removed. Push boiler into position against the wall.
6. If fitting extension pieces ensure the seals are correctly fitted and lubricated before pushing through the wall and attaching to the flue adaptor.

**Note:** Any combination of short (300mm) and long (600mm) extension pieces for the BF-R can be used up to a maximum additional length of 1200mm.

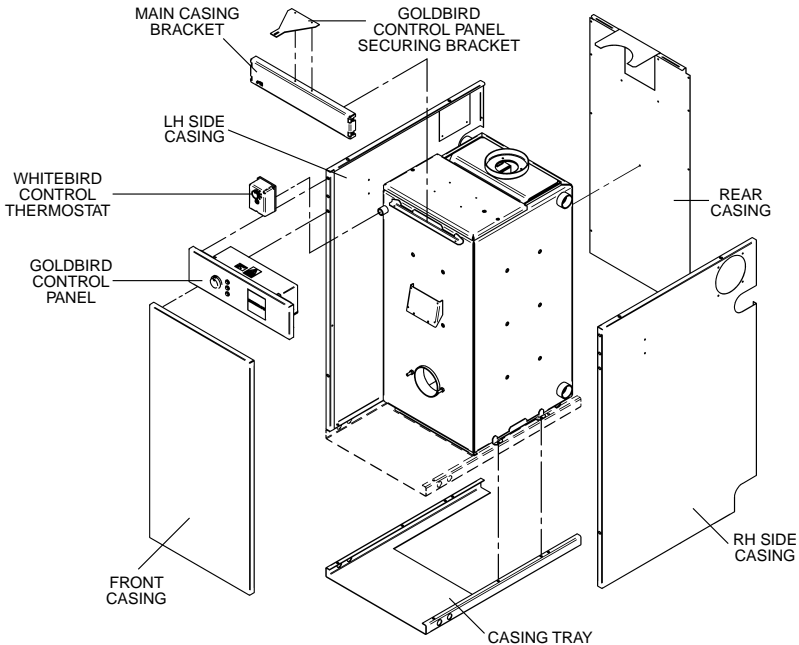
7. Slide the flue terminal into position with a twisting movement ensuring that it protrudes through the wall by a minimum of 175mm and a maximum of 225mm or through the roof by a minimum of 665mm.
8. Seal the gap between the flue and the wall both inside and out after which the protective basket must be fitted to the wall over the flue terminal.
9. After removing the air inlet cover fit the air intake adaptor spigot and gasket to the burner. Connect one end of the air duct to the flue and the other end to the air intake spigot on the burner. Both ends should be securely fastened with the jubilee clips.
10. The boiler is now ready to be connected to the plumbing, oil supply and mains electricity.
11. The baseplate of the Goldbird and Whitebird has been designed to allow the oil pipe and electric cable to pass unnoticed inside the unit from the rear of the installation. Alternatively the grommets either side, towards the front of the baseplate, can be used.
12. A test hole for commissioning purposes has been provided on the boiler lid.

### 8.3.2 Installation of High Level Balanced Flue (HLBF)

Installation instructions as per the balanced flue except there are no seals involved as the flue is not telescopic. There are no extension pieces available for these units and only 2 rearward facing options are recommended for the 90/120 range of boilers.

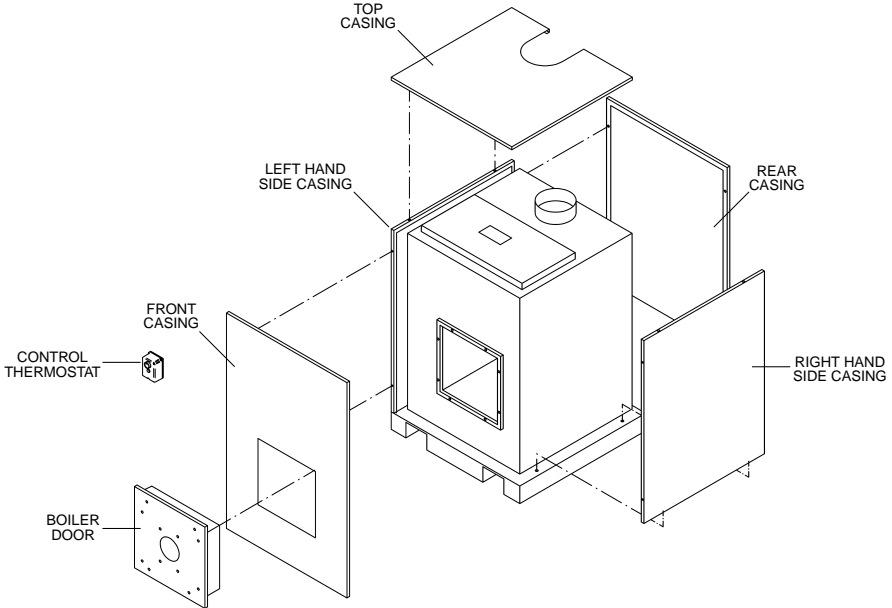
## 9.0 Installation of Boilers

### 9.1 Installation of 120/150 and 150/200 White Casings



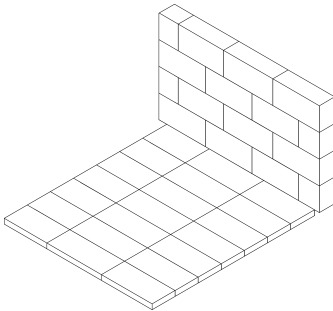
Attach the casing tray to the boiler. Fix the casing bracket to the boiler, the control panel securing bracket is fixed to the casing bracket. Attach the side casings to the tray and casing bracket. Fit the rear casing then fit the control panel (or thermostat) and clip on the front and top panel.

## 9.2 Installation of Industrial Bluebird Casings



Remove the boiler door (8 bolts) and place the 2 side panels onto the boiler plinth locating the studs on the bottom edge of the casing into the corresponding holes on the plinth. Then clip the rear, front and top casing onto the sides. Finally bolt the door to the boiler ensuring that all firebricks are in position.

## 9.3 Industrial Boiler Firebrick Installation

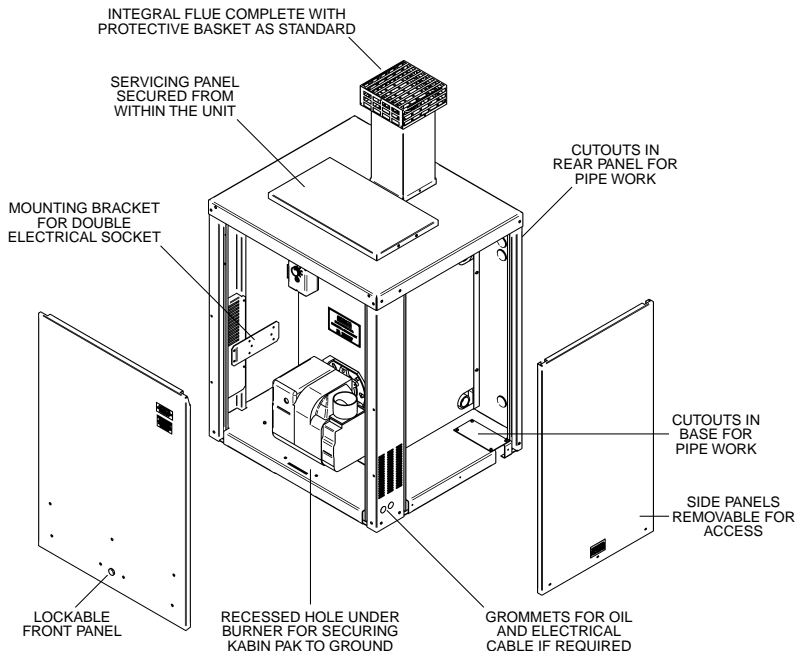


As an additional measure to ensure the longevity of the boiler, the 300, 400 and 500 Bluebirds are supplied with thin flat bricks fitted in the base of the boiler. A pack of larger bricks is supplied separately. The larger bricks are placed on their sides at the rear of the boiler. Each row should be interleaved. No cement or adhesive is required to fix the bricks in position.

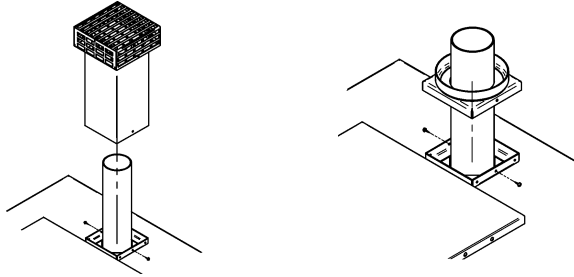
## 9.4 Kabin Pak Installations

1. Although the Standard and Slimline Kabin Paks are manufactured from galvanised steel, it is recommended that after a period of weathering (approx 4-8 weeks) that the Kabin Pak is painted with a suitable primer and finish coat to prevent corrosion.
2. When using the Kabin Paks with the integral low level flue only 28 second redwood number 1 (kerosine) may be used in order to comply with building regulations.
3. The Kabin Pak is fully insulated, although it is recommended that a frost thermostat is fitted within the Kabin Pak unit.
4. On the Standard Kabin Pak the two main side panels secured by 3 self tapping screws are designed to be easily removable for access. In addition there is sufficient space either side of the boiler to fit a circulating pump or pressure vessel as required.
5. On the Slimline Kabin Pak the rear door is easily removable (2 screws) for access and there is sufficient space to fit a circulating pump.
6. By removing the protective basket and end cap from the integral flue an adaptor can be fitted which allows the flue to be extended vertically using standard round twin wall flue pipe. The vertical flue adaptor is not suitable for use with a Kabin Pak back outlet flue.

## 9.5 Standard Kabin Paks

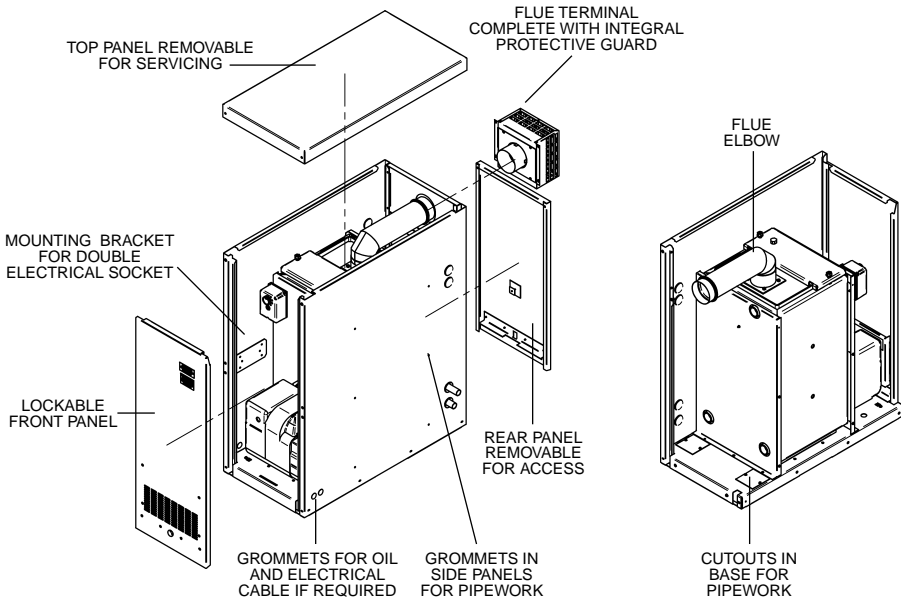


## 9.6 Fitting a Standard Kabin Pak Vertical Flue Adaptor



1. Remove the 2 screws connecting the flue main body to the Kabin Pak and lift off. It may be necessary to break the seal between the flue main body and the top of the flue pipe.
2. Ensure that the gap between the existing flue pipe and top of the Kabin Pak is properly sealed with high temperature silicone sealant.
3. Once the flue main body has been removed fit the Kabin Pak adaptor (KPA) into position and secure with the 2 screws. A 5" conventional flue can now be attached.

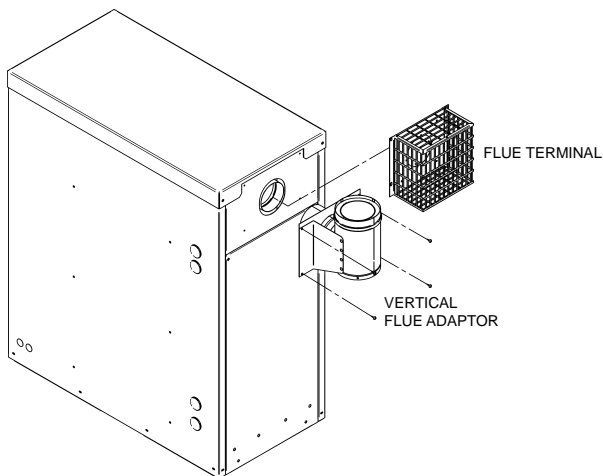
## 9.7 Slimline Kabin Pak





## 9.8 Fitting a Slimline Kabin Pak Vertical Flue Adaptor

Remove the flue terminal (4 screws) and fit the adaptor as shown (4 screws).



**Note:** Where there is a possibility of air being trapped in the boiler the installer must ensure that the automatic air vent is fitted to the boiler.

## 10.0 Oil Supply

### 1. Oil Tank

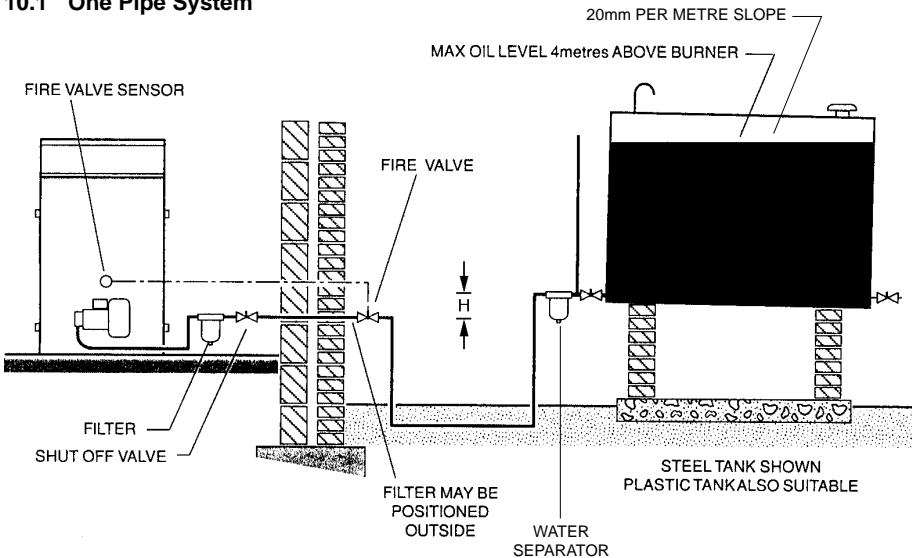
Steel tanks constructed to BS 799 Part 5 1987 should be painted on the outside only and mounted on piers to prevent corrosion. Plastic oil tanks are also available and can be suitable for installation at ground level. However, kerosene should never be stored in translucent plastic containers.

- The pipe from the oil tank to the burner should be run in copper, steel or aluminium pipework. Galvanised pipe and fittings should not be used. The pipework should terminate close to the boiler and be fitted with an isolating valve and filter. It is also recommended that a remote sensing fire valve should be fitted to the oil line where the oil line enters the building (BS5410).

The fire valve can be connected to the warranty label bracket on Deluxe and Whitebird boilers using 2 cable ties or by attaching a clip to the boiler casing on Bluebird models.

Depending on the position of the tank a two pipe system may be required. One and two pipe oil systems are shown below. As an alternative to a two pipe system a Tigerloop or other approved de-aerator may be used.

### 10.1 One Pipe System

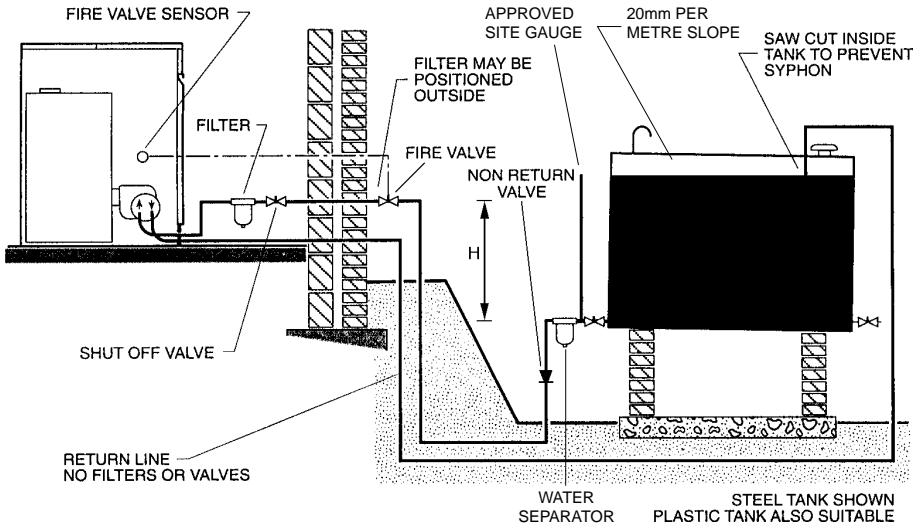


**Total Maximum Pipe Length (m)**

Head H <sub>(m)</sub>	0.5	1	1.5	2
I.D. 8 mm	10	20	40	60
I.D. 10 mm	20	40	80	100

**Note:** Plastic oil level gauges may shrink when exposed to kerosene thus allowing the ingress of water. Pump failures due to water contamination are not covered under the warranty.

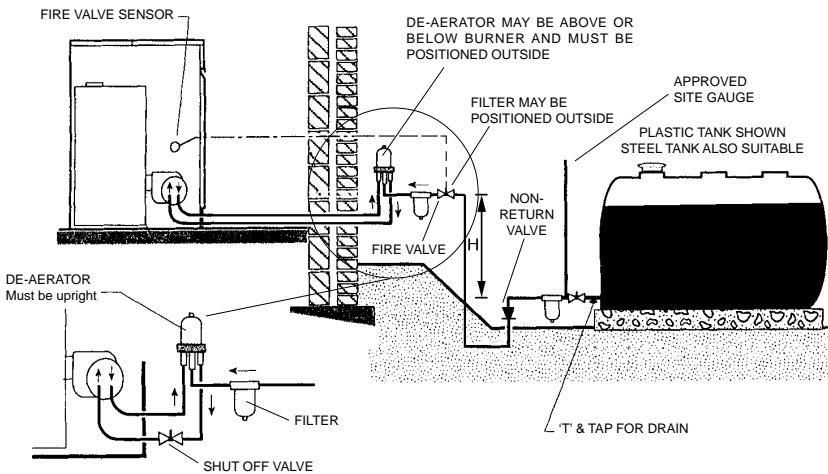
## 10.2 Two Pipe System



Total Maximum Pipe Length (m)

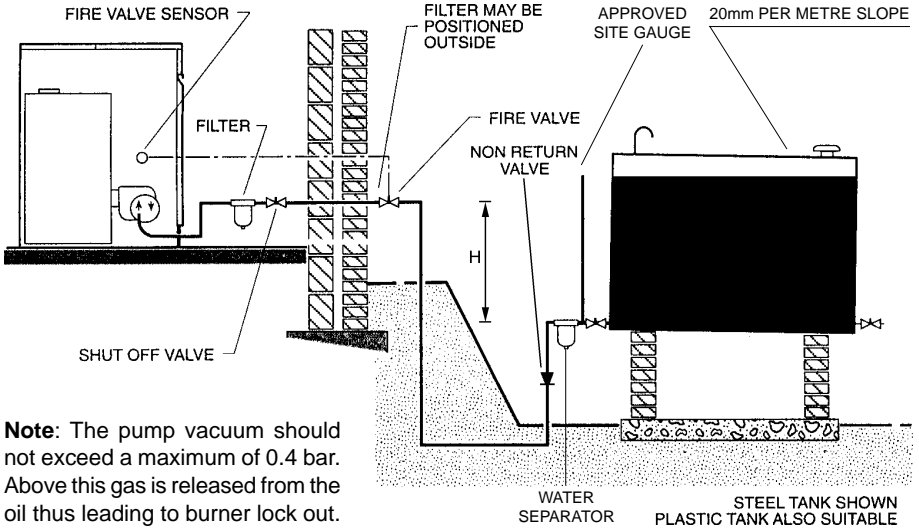
Lift H <sub>(m)</sub>	0.5	0.5	1	1.5	2	3	3.5
I.D. 8 mm	35	30	25	20	15	8	6
I.D. 10 mm	100	100	100	90	70	30	20

## 10.3 De-aerator System



For maximum pipe length and lift contact de-aerator manufacturer.

## 10.4 One Pipe Lift



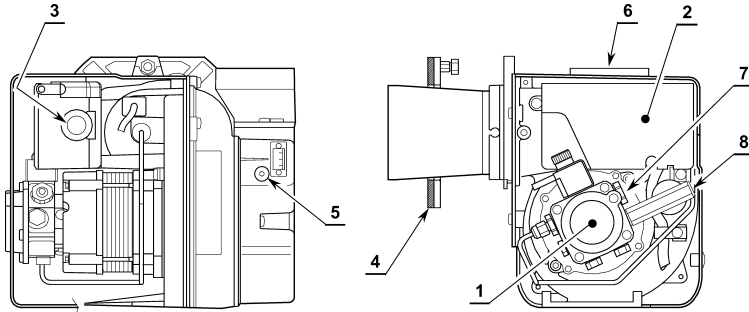
**Total Maximum Pipe Length (m)**

Lift H <sub>(m)</sub>	0.5	0.5	1	1.5	2	3	3.5
ID 8mm	35	30	25	20	15	8	6
ID 10mm	100	100	100	90	70	30	20

## 11.0 Burners

### 11.1 RDB Burner

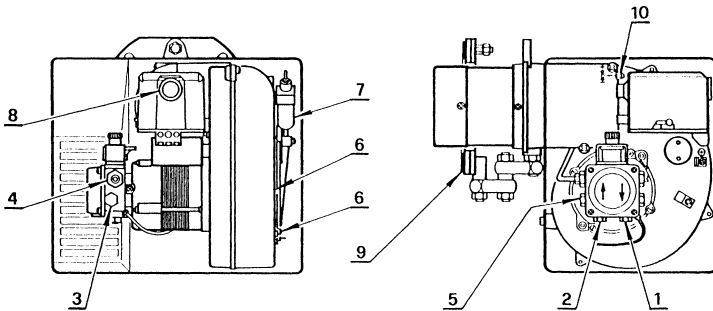
The burner is fitted with the correct nozzle and the pressure set. All that is further required before commissioning, is to connect the oil and electricity supply.



1. Pump
2. Control box
3. Reset button with lock-out lamp
4. Flange with insulating gasket

5. Air damper adjustment screw
6. Air tube connection (B/F) or inlet cover
7. Pump pressure adjustment screw
8. Pressure gauge port

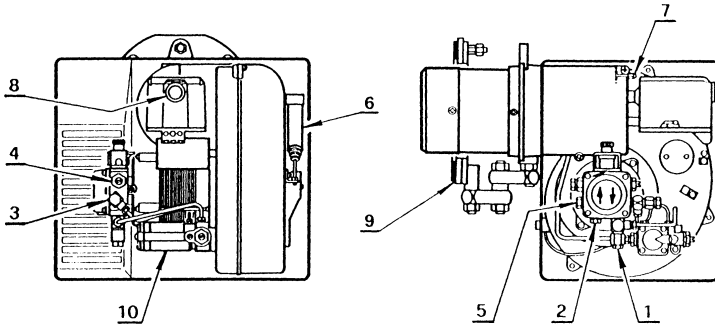
### 11.2 G10 Burners



1. Return line
2. Suction line
3. Gauge connection
4. Pump pressure regulator
5. Vacuum gauge connection

6. Screw fixing air-damper
7. Hydraulic jack with air-damper
8. Lock-out lamp and reset button
9. Flange with insulating shield
10. Combustion head adjustment screw

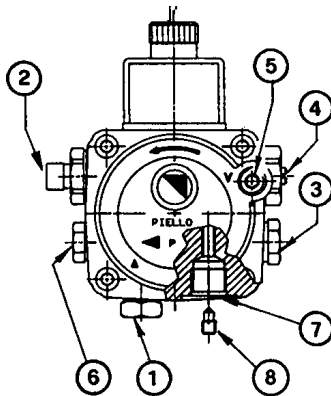
### 11.3 G20S Burner



- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Return line</li> <li>2. Suction line</li> <li>3. Gauge connection</li> <li>4. Pump pressure regulator</li> <li>5. Suction gauge connection</li> </ol> | <ol style="list-style-type: none"> <li>6. Hydraulic jack with air-damper</li> <li>7. Combustion head adjustment screw</li> <li>8. Lock-out lamp and reset button</li> <li>9. Flange with insulating shield</li> <li>10. Start delaying device</li> </ol> |
|---|--|

### 11.4 Oil Supply (Pump)

The burner is supplied for use with a one pipe system. For use on a two pipe system, it is necessary to remove the return port plug and fit a small by-pass plug as shown.



1. Suction port
2. To nozzle
3. Pressure gauge port/air bleed
4. Pump pressure adjustment
5. Vacuum port
6. To hydraulic ram (if fitted)
7. Return port
8. By-pass plug

**Note:** When the burner locks out due to oil starvation it will be necessary to bleed air from the oil pump whenever the oil supply has been re-established. All call-outs and component failures due to oil starvation are not covered under the warranty and are therefore chargeable.

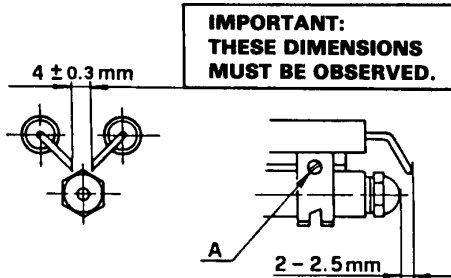
## 11.5 Air Damper Adjustment

The setting is purely indicative.

Each installation however, has its own unpredictable working conditions: actual nozzle output; positive or negative pressure in the combustion chamber, the need of excess air, etc.

All these conditions may require a different air-damper setting.

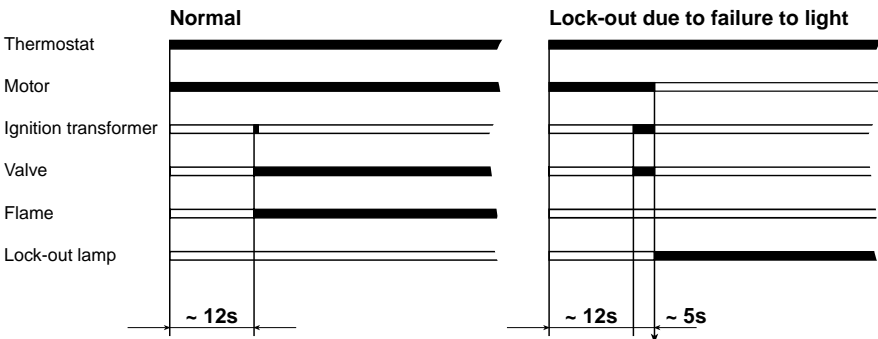
## 11.6 Electrode Setting



### Attention

Before assembling or removing the nozzle, loosen the screw (A) and move the electrodes away from the nozzle.

## 11.7 Burner Start-up Cycle



## 12.0 Servicing and Commissioning

### 12.1 Commissioning

**Note:** IT IS RECOMMENDED THAT AN OFTEC TRAINED AND REGISTERED TECHNICIAN SHOULD BE USED.

**IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE BOILER IS PROPERLY COMMISSIONED. SEE BS 5410. FAILURE TO DO SO MAY INVALIDATE THE WARRANTY.**

Combustion tests must be carried out using a Combustion Analyser. The pump pressure can be checked by fitting a manifold and a pressure gauge to the oil pump.

Before firing ensure that all the baffles and base insulation are in place as they may have been displaced during transit as shown on page 5. Set the boiler control to 80°C switch on, ensuring all controls are calling for heat. Typical burner settings and test data are shown in section 2.2.

Check the smoke reading, CO<sub>2</sub> content and flue gas temperature with the boiler up to temperature. Testing while the boiler is still relatively cold gives inaccurate results and leads to incorrect adjustments being made.

Where a balanced flue has been fitted ensure the air duct connecting the flue and burner has been properly connected before commissioning. On the Kabin Paks refit the front door panel before doing a flue gas analysis.

**The commissioning details should be included in OFTEC form CD11 and left with the householder.**

### 12.2 Servicing

#### 12.2.1 General Requirements

It is recommended that the appliance is serviced annually by an OFTEC registered service technician in accordance with the recommendations laid out in OFTEC's technical information book 2 – 'Pressure Jet Appliances – Commissioning Requirements for Technicians'.

Additionally when servicing special attention should be paid to the condition of the oil nozzle, flexible oil line, fuel filter and lid and base insulation all of which will need to be replaced on a regular basis.

**Note:** Second year or other extended warranties will be invalidated if the appliance is not serviced annually.

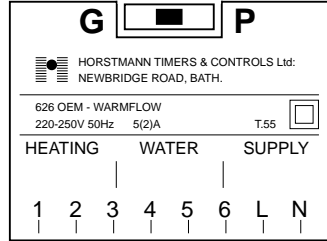
#### 12.2.2 Kabin Pak & External Boilerhouses

1. The boiler must be provided with a suitable well drained hard standing area to prevent the formation of pools of water in order to eliminate any risk to the service engineer or end user.
2. The boiler must not be serviced or the panels removed where there is a risk of the ingress of water.



### 13.0 Horstmann 626 Electronic Programmer User Instructions (Goldbirds only)

The 626 Boiler Mounted Programmer is an electronic, 7 day central heating and hot water control; extremely reliable and easy to operate. Properly programmed it will help you save energy and create a comfortable environment in your home.



**Note:** Ensure selection switch on the rear of the programmer is at the correct setting 'G' for gravity systems 'P' for fully pumped systems. The programmer is factory set at its mid-position.

The 626 Electronic Programmer has the following features:

- 3 ON and 3 OFF periods every 24 hours with a choice of different programmes for each day of the week.
- Override programme options of AUTO, ALL DAY, 24 HOUR and OFF.
- A choice of HOT WATER and CENTRAL HEATING.

**Note:** When the select switch is at 'G' the only choice is HW only or HW and central heating.

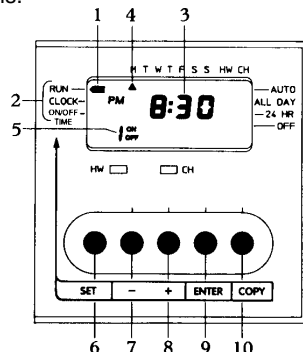
- A central heating ADVANCE button allowing an instant switch from ON to OFF, or from OFF to ON, without affecting normal settings.

Most of the control buttons on your programmer are dual purpose buttons.

They can be used as SET buttons for inputting time of day, ON/OFF times, etc, or as SELECT buttons for using the advance facility and choosing override programme options.

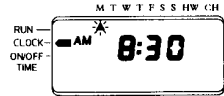
The diagram below can be used to identify the SET buttons, indicators and symbols referred to in the following sections of these instructions.

1. Set indicator.
2. Set positions.
3. Time-of-Day.
4. Day-of-Week indicator.
5. ON/OFF switch period symbol.
6. SET button.
7. Minus(-) adjust button.
8. Plus(+) adjust button.
9. ENTER button.
10. COPY button.



## Setting the Time of Day

Press the SET button so that the SET indicator is pointing to the CLOCK position on the front of the programmer. The DAY OF THE WEEK indicator will now flash.



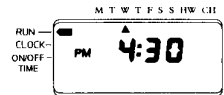
Use the PLUS(+) or MINUS(-) buttons to move the DAY OF THE WEEK Indicator to the current day of the week. Numbers relating to the days of the week are printed along the top of the programmer display, i.e. 1 = Monday, 2 = Tuesday, etc.



Press the ENTER button. The TIME OF DAY will now flash.

Now use the (+) or (-) buttons to alter the display to the correct time of day, making sure that the AM/PM SYMBOL is also correct (see figure 4).

**Note:** By pressing and releasing the (+) and (-) buttons you advance or retard the time in 1 minute steps. If you keep the button depressed the display will fast cycle and the time can be changed more rapidly.



Press the ENTER button and then use the SET button to return the SET indicator to the RUN POSITION.

## Setting the 'ON' and 'OFF' Times

**Note:** The minimum ON/OFF time that can be set is TEN MINUTES.

The programmer already has a factory pre-set programme of ON/OFF times in its memory. These are based on the most commonly used settings and are as follows.

Monday to Friday:

Saturday/Sunday:

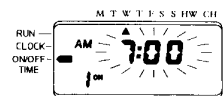
1st ON: 7.00am	1st OFF: 10.00am	1st ON: 7.30am	1st OFF: 11.30am
2nd ON: 12.00pm	2nd OFF: 12.00pm	2nd ON: 12.00pm	2nd OFF: 12.00pm
3rd ON: 5.00pm	3rd OFF: 11.00pm	3rd ON: 5.00pm	3rd OFF: 11.00pm

If these settings do not meet your own requirements then they can be easily changed as follows:

Press the SET button so that the SET indicator is in the position shown. The display will indicate 'DAY' and the DAY OF THE WEEK indicator will now flash.



Use the (+) and (-) buttons to move the indicator to the day of the week you wish to change the times for. Press ENTER.



The display will now show '1 ON' and the first ON time for that day will flash.

Adjust the flashing time as required by using the (+) AND (-) BUTTONS THEN PRESS ENTER.

The display will now show '1 OFF' and the first programmed OFF time for the day will flash.

This can be altered in the same way as the '1 ON'.

Follow the same procedure for the 2nd and 3rd ON/OFF times remembering to press ENTER after each change to the programme. If you do not wish to alter a particular time then simply press ENTER and the display will move on to the next ON/OFF time leaving the previous one unchanged.



When the 3rd OFF time has been entered the programmer will display the word COPY and the DAY OF THE WEEK indicator will flash (see figure 8).

You can now copy the ON/OFF times you have just input for one day onto any other days that you wish them to apply. This saves you having to separately programme days with identical switching times.

Use the (+) and (-) buttons to move the DAY OF THE WEEK indicator to the next day that you wish the times to apply and press the COPY button, the display will indicate 'IN'.

Continue in this way until the programme has been copied to all the days that you wish it to apply to.

When you have finished copying simply press ENTER. The word COPY will be replaced with 'DAY' and the DAY OF THE WEEK indicator will flash.

You can now programme those days that require different times to the ones that you have just copied by following the same procedure as described at the start of this section, parts (ii) to (v).

**Note:** Your programmer allows you to have up to three ON/OFF periods each day. If you do not want to use all of these, a switch period can be cancelled by programming the ON operation the same time as the OFF operation, eg 2nd ON at 12.00pm and 2nd OFF at 12.00pm.

The next diagram can be used to identify the SELECT buttons and indicators referred to in the following sections of this leaflet.

### Using the Advance

The ADVANCE facility allows you to bring forward the next ON or OFF period without having to alter the programmed ON/OFF times.



Press the ADVANCE button once and release. The word ADVANCE will appear in the display.

If the programmer was originally ON it will now switch OFF and stay OFF until the next programmed ON time.



The opposite will apply if the programmer was originally OFF.

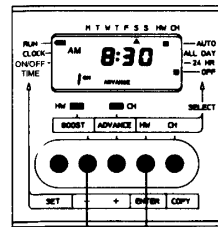
In both cases the unit will then revert to the normal programme times.

If you wish to cancel the advance simply press the ADVANCE button again and the word ADVANCE will disappear from the display.

**Note:** The ADVANCE facility has no effect when the CH PROGRAMME indicator is in either the 24 HOUR or OFF position.

Electronic equipment can, in exceptional circumstances be affected by electrical interference.

If your programmers' display or switching programme becomes frozen or scrambled, or you wish to revert to the factory pre-set programme you can RESET your programmer by pressing the MINUS(-) adjust button and the ENTER/HW SELECT button together.



After using the RESET procedure you will need to re-programme the day and time of day plus any changes you wish to make to the factory pre-set programme.

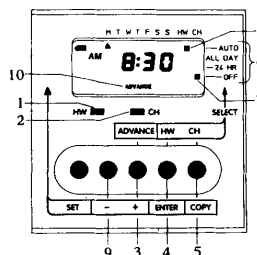
### Reserve Battery

Your programmer is fitted with a NON-RECHARGEABLE NON-REPLACEABLE LONG LIFE battery which will maintain the programmed ON/OFF settings for a period in excess of two years. This is more than sufficient to cover all the expected power interruptions during the life of the unit.

### Heating Systems

Three of the most common systems used in conjunction with the 626 programmer are shown schematically in the installation manual. Information for use with various systems is available from Warmflow on (028) 9262 1515 on request.

1. Hot water ON indicator.
2. Central heating ON indicator.
3. Advance button.
4. Hot water programme select button.
5. Central heating programme select button.
6. Programme positions.
7. Central heating programme indicator.
8. Hot water programme.



## Programme Selection

The following programmes can be selected for either HOT WATER by itself, CENTRAL HEATING by itself or HOT WATER and HEATING together.

### AUTO

When AUTO is selected the programmer will switch ON and OFF according to the switching times held in the memory, i.e. up to three ON/OFF periods per day.

### ALL DAY

When ALL DAY is selected the programmer will switch the system on at the 1st ON TIME and OFF at the 3rd OFF TIME.

### 24 HOUR

When 24 HOUR is selected the system remains on continuously, ignoring all time settings.

### OFF

When OFF is selected the programmer clock continues to operate but the system remains off.

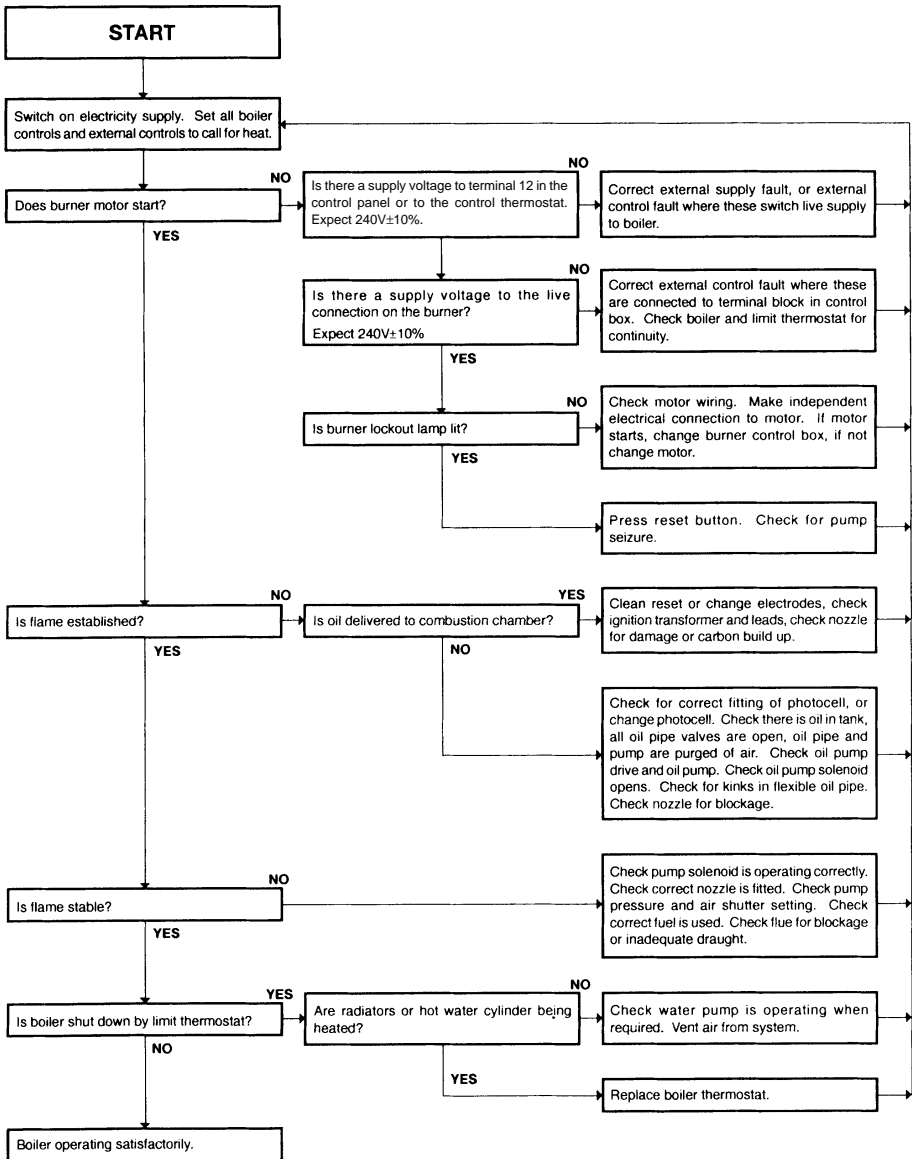
To select a programme for hot water press the HW PROGRAMME SELECT button until the HW (HOT WATER) PROGRAMME indicator is pointing to the required programme, eg AUTO.



To select a central heating programme follow the same procedure using the CH PROGRAMME SELECT button.

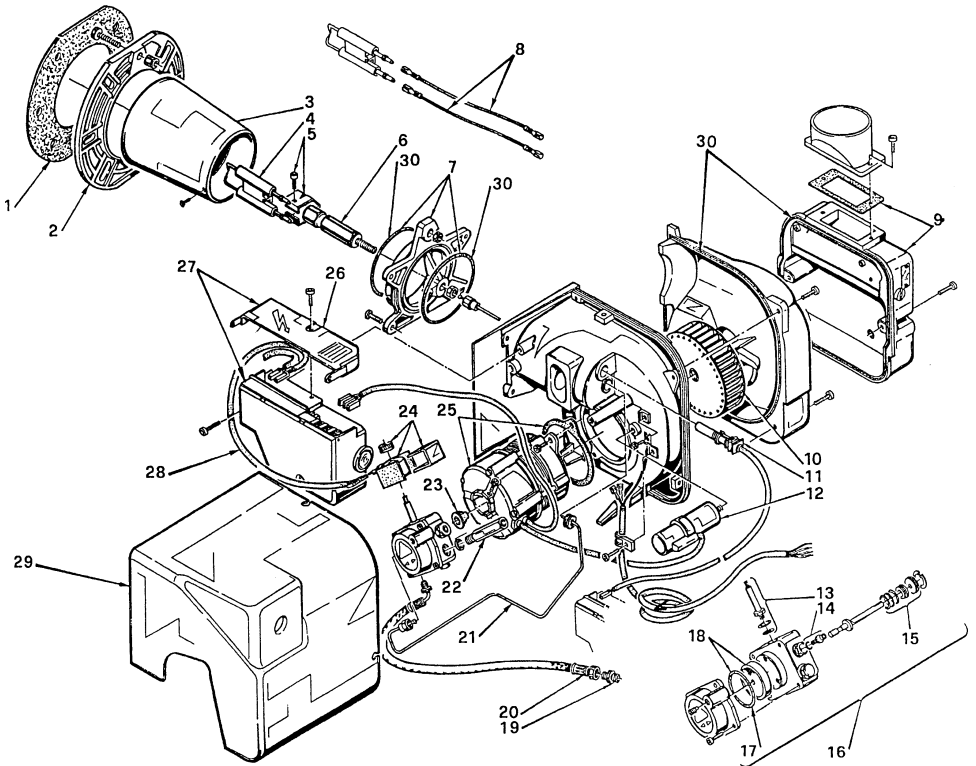
**Note:** When HOT WATER or HEATING is switched to ON the relevant indicator light will be illuminated.

## 14.0 Fault Finding



## 15.0 Spares

### 15.1 Riello RDB Burners 1&2

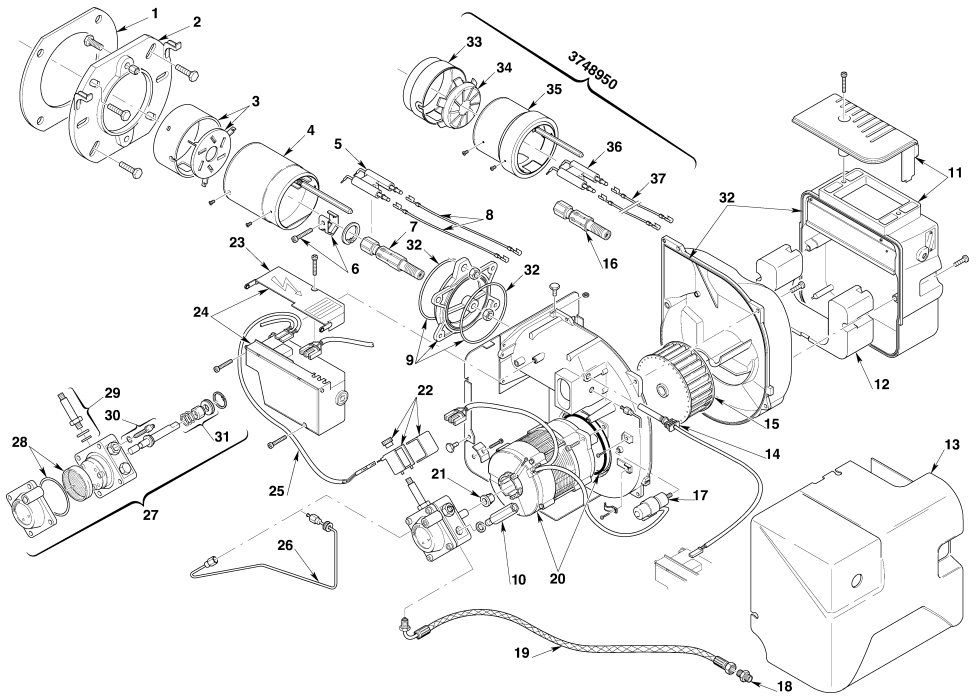


NO	CODE	3748357	3748557	3748757	DESCRIPTION
1	3005787	•	•	•	Gasket
2	3006384	•	•	•	Flange
3	3008768	•	•	•	Cup-shaped Head
3	3008724	•	•	•	Cup-shaped Head
3	3008769	•	•	•	Cup-shaped Head
4	3007513	•	•	•	Electrode Assembly
5	3006552	•	•	•	Electrode Bracket
6	3008642	•	•	•	Nozzle Holder
7	3008643	•	•	•	Collar
8	3008794	•	•	•	High Voltage Lead
9	3008647	•	•	•	Air Damper Assembly
9	3008839	•	•	•	Air Damper Assembly
10	3005709	•	•	•	Fan
10	3008645	•	•	•	Fan
11	3008646	•	•	•	PE Cell
12	3007479	•	•	•	Capacitor 4 $\mu$ F
12	3002837	•	•	•	Capacitor 4 $\frac{1}{2}$ $\mu$ F
13	3007582	•	•	•	Needle Valve

NO	CODE	3748357	3748557	3748757	DESCRIPTION
14	3008651	•	•	•	Regulator
15	3000439	•	•	•	Pump Seal
16	3008654	•	•	•	Pump
17	3007162	•	•	•	'O' Ring
18	3008653	•	•	•	Filter 'O' Ring
19	3003602	•	•	•	Connector
20	3005720	•	•	•	Flexible
21	3008644	•	•	•	Tube
22	3008876	•	•	•	Pressure Gauge
23	3000443	•	•	•	Joint
24	3008648	•	•	•	Coil
25	3008650	•	•	•	Motor
25	3002836	•	•	•	Motor
26	3008649	•	•	•	Protection
27	3008652	•	•	•	Control Box 535 RSE/LD
28	3008877	•	•	•	Lead Coil
29	3008879	•	•	•	Cover
30	3008878	•	•	•	Kit Seal

Note: The 4 $\frac{1}{2}$  $\mu$ F capacitor is only suitable for use with the 3002837 motor and the 4 $\mu$ F capacitor is only suitable for use with the 3008650 motor.

## 15.2 RDB3 and RDB4 Burner

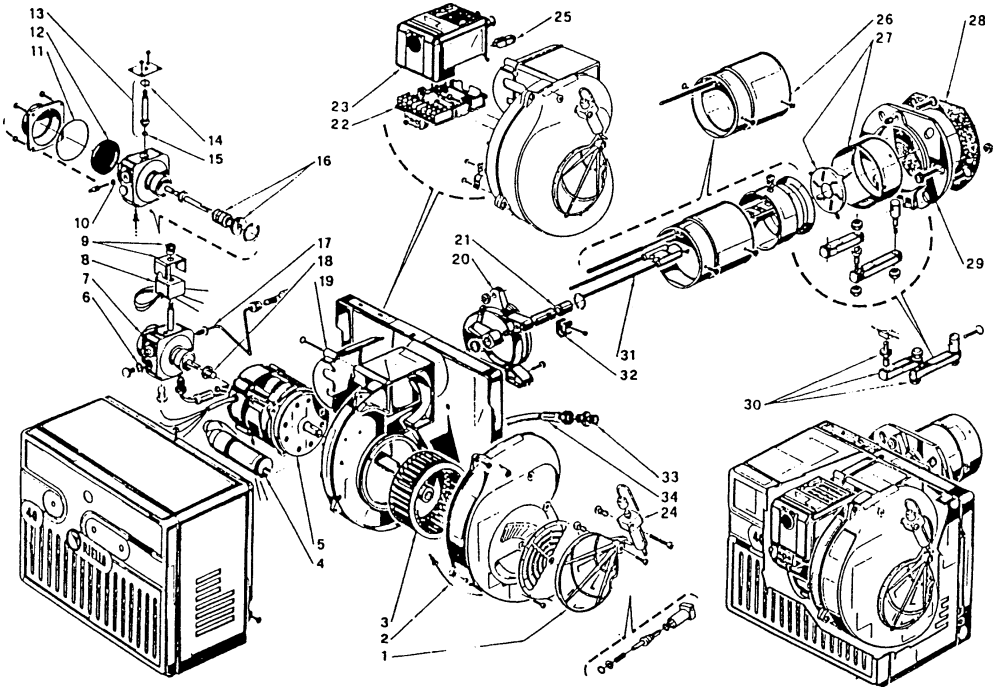


NO	CODE	3748950	3748850	DESCRIPTION
1	3005795	•	•	Gasket
2	3008637	•	•	Flange
3	3006392	•	•	End Ring and Diffuser Disc
4	3006151	•	•	Blast Tube Assembly
5	3008538	•	•	Electrode Assembly
6	3006552	•	•	Electrode Bracket
7	3008954	•	•	Nozzle Holder
8	3008956	•	•	High Voltage Lead
9	3008957	•	•	Collar
10	3008876	•	•	Pressure Gauge
11	3008839	•	•	Air Damper Assembly
12	3008958	•	•	Deadening
13	3008962	•	•	Cover
14	3008646	•	•	PE Cell
15	3005799	•	•	Fan
16	3008955	•	•	Nozzle Holder
17	3008960	•	•	Capacitor 5µF
18	3003602	•	•	Connector
19	3005720	•	•	Flexible

NO	CODE	3748950	3748850	DESCRIPTION
20	3008964	•	•	Motor
21	3000443	•	•	Joint
22	3008648	•	•	Coil
23	3008649	•	•	Protection
24	3008652	•	•	Control Box 535SE/LD
25	3008851	•	•	Lead Coil
26	3008961	•	•	Tube
27	3008654	•	•	Pump
28	3008653	•	•	Filter O-Ring
29	3007582	•	•	Needle Valve
30	3008651	•	•	Regulator
31	3000439	•	•	Pump Seal
32	3008963	•	•	Kit Seals
33	3005714	•	•	End Ring
34	3005713	•	•	Diffuser Disc
35	3007714	•	•	Blast Tube Assembly
36	3007513	•	•	Electrode Assembly
37	3008794	•	•	High Voltage Lead
38	3008959	•	•	Snorkel



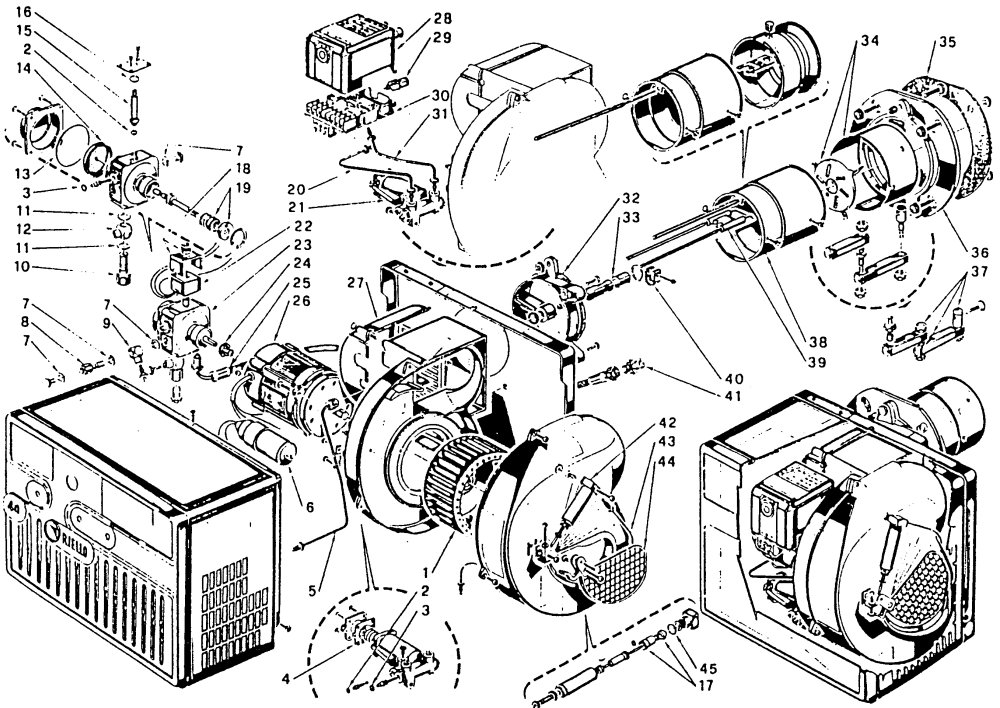
### 15.3 Burner Spares Riello 40 – G10



NO	CODE	DESCRIPTION
1	3000879	Air Shutter Assembly
2	3006913	Tube
3	3005788	Fan
4	3005798	Condenser
5	3007355	Motor
6	3007077	Washer
7	3007450	Pump
8	3002279	Coil
9	3006553	Cover
10	3007028	'O' Ring
11	3007162	'O' Ring
12	3005719	Filter
13	3006925	Valve Stem
14	3007029	'O' Ring
15	3007156	'O' Ring
16	3000439	Pump Seal
17	3005789	Tube
18	3000443	Joint

NO	CODE	DESCRIPTION
19	3006557	Access Plate
20	3005791	Collar
21	3005764	Nozzle Holder
22	3002278	Control Box Base
23	3001156	Control Box
24	3002297	Igniter
25	3002280	Photocell
26	3005792	Head
27	3006392	Disc with Ring Pressed
28	3005795	Flange Gasket
29	3005796	Flange
30	3000640	Hinge
31	3005790	Electrode
32	3006552	Electrode Clamp
33	3009068	Connector
34	3005720	Flexible Pipe
35	3006911	Hydraulic Ram

## 15.4 Riello 40 – G20S



NO	CODE	DESCRIPTION
1	3005799	Fan
2	3007156	'O' Ring
3	3007028	'O' Ring
4	3005801	Washer
5	3005800	Tube
6	3005802	Condenser
7	3007077	Washer
8	3005771	Pivot
9	3005803	Washer
10	3005804	Pivot
11	3007079	Washer
12	3005805	Connector
13	3007162	'O' Ring
14	3005719	Filter
15	3006925	Valve
16	3007029	'O' Ring
17	3002297	Igniter
18	3006553	Cover
19	3000439	Pump Seal
20	3005808	Tube
21	3006500	Retarder
22	3002279	Coil
23	3006924	Pump

NO	CODE	DESCRIPTION
24	3000443	Joint
25	3005720	Flexible Pipe
26	3005820	Motor
27	3006558	Access Plate
28	3001156	Control Box
29	3002280	Photocell
30	3002278	Control Box Base
31	3005809	Tube
32	3005810	Collar
33	3005764	Nozzle Holder
34	3006264	Ring
35	3005813	Flange Gasket
36	3005814	Flange
37	3000640	Hinge Assembly
38	3006265	Head
39	3005816	Electrodes
40	3006552	Clamp
41	3009068	Connector
42	3006499	Hydraulic Ram
43	3006501	Tube
44	3000645	Air Shutter
45	3007161	'O' Ring
46	3007165	Valve Piston 'O'

<b>15.5 Boiler Parts List</b>	<b>Code</b>
Dual Immersion Thermostat (Bluebird, Whitebird, Kabin Pak Boilers)	WDS1
Dual Immersion Thermostat (System Boilers)	WDS2
Boiler Control Thermostat (Goldbird)	2131
Boiler Limit Thermostat (Goldbird)	281
Automatic Air Vent c/w Check Valve	614
Drain Cock	618
Pressure Relief Valve	2132
Grundfos 15/60 Pump	602
Low Pressure Switch	2270
50/70 Baffle and 50/90 Slimline Top Baffle	1910
50/90 Slimline Middle Baffle	2799
50/90 Front Servicing Top Baffle	2814
50/90 Front Servicing Middle Baffle	2817
50/90 Bottom Baffle (Front Servicing & Slimline)	2816
70/90 Baffle	2351
70/90 Top Baffle	1911
90/120 Baffle	2368
90/120 Top Baffle	2293
120/150 Baffle	1236
120/150 Top Baffle	1235
150/200 and 200/250 Baffle	2549
150/200 and 200/250 Top Baffle	2393
Pressure Gauge c/w Capillary	2169
12 Litre Pressure Vessel	2128
Vertical Flue Adaptor (Std Kabin Pak)	VFA
Vertical Flue Adaptor (Slimline Kabin Pak)	VFA-WMA
Air Intake Duct Kit	AID

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When ordering replacement white casing panels it should be noted that due to the painting process there may be some variation in colour.



*The Boiler People*

**WEB: [www.warmflowboilers.co.uk](http://www.warmflowboilers.co.uk)**

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TECHNICAL &  
WARRANTY CONTACT**

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& N IRELAND**

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Fax: (028) 9262 0869  
E-mail: [sales@warmflow.co.uk](mailto:sales@warmflow.co.uk)  
[technical@warmflow.co.uk](mailto:technical@warmflow.co.uk)  
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[technical@warmflowgb.co.uk](mailto:technical@warmflowgb.co.uk)  
[service@warmflowgb.co.uk](mailto:service@warmflowgb.co.uk)

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Balbriggan Industrial Estate,  
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Fax: (01) 841 6614



This manual is accurate at the date of printing (E&OE) but will be superseded and should be disregarded if specifications and/or appearances are changed in the interests of continued product improvement.