



CONDENSING RANGE

TECHNICAL MANUAL

For use with No. 2 Oil

Includes Homeowner Instructions



MANUFACTURED BY:
FIREBIRD,
BALLYMAKEERA,
COUNTY CORK,
IRELAND.

DISTRIBUTED BY:
QUINCY HYDRONIC TECHNOLOGY, INC.
3560 LAFAYETTE RD., BLDG 2, UNIT A
PORTSMOUTH, NH 03801
PHONE: 800-501-7697
FAX: 877-334-6401

This manual must remain with the homeowner on completion of installation

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Foreword

We would like to thank you for purchasing a high efficiency Firebird condensing domestic central heating oil fired boiler. This instruction manual is produced for the reference and guidance of qualified installation technicians. Our boilers and burners are supplied as matched units tested and approved to International Standard.

Firebird condensing boilers are built in accordance with the ASME boiler and pressure vessel code and bear the "H" stamp.

You should ensure that all installation, servicing and commissioning work is carried out by a competent person. It should be noted that it is the responsibility of the Installer/Homeowner to ensure that the boiler is properly commissioned. Failure to do so may invalidate the boiler guarantee.

SERVICING

The boiler requires servicing on an annual basis to ensure it maintains its efficiency, continues to perform reliably and as a regular check on its safety features. It is important that servicing should be conducted by a competent oil burner technician.

All appropriate manuals should be studied and their requirements adhered to and used in conjunction with these instructions.

We realize that it is not possible to answer all questions about the Firebird boiler system in this manual. Reading this installation manual does not make the reader an expert in all aspects of installation and operation, and does not replace the need for a qualified licensed heating contractor. We urge you to contact your installing contractor or distributor if you are in question about any aspect of your boiler's performance. Our main concern is that you are satisfied with your boiler and its performance. We require that your contractor complete efficiency tests using instruments.

As reading of this manual alone for installation and servicing procedures cannot replace the critical advantage provided by training and years of experience.

How a condensing boiler works

Firebird domestic oil fired condensing boilers are highly efficient and are all independently certified to ENERGY STAR AFUE Standards. They use less fuel and have lower running costs than non-condensing boilers. Because of their increased efficiency they emit less carbon dioxide than non-condensing boilers, which will contribute to efforts to reduce global warming. The incredible efficiency of the Firebird Condensing Boiler is due to the development of a single boiler unit with two unique heat exchanger units. This gives a exchange surface greater than non-condensing boilers.

This additional surface area increases the amount of heat extracted from the combustion process and thus reduces the heat wasted to atmosphere. So much heat is extracted from the combustion gases that their water vapor element condenses into liquid form, releasing the latent heat that was used to create the vapor in the first place. It is this heat gain that gives the condensing boiler its significant advantage over a non-condensing model. In order to enable this high level of heat extraction to take place, the water in the boiler's heat exchanger must be cooled down to about 140°F / 55°C or less, this means that the boiler is working at its maximum efficiency

The Firebird Condensing Boiler is suitable for under floor heating provided the return temperature is above 110°F / 40°C. at all times.

The Firebird Condensing Boiler even when not working in condensing mode will still operate at extremely high efficiencies making it suitable for fitting to an existing heating system without alteration to the radiator sizes.

The burner is factory set for use with No.2 Fuel Oil.

POPULAR BOILER**Popular Operating Procedure**

(All outputs)



CONFIRM HEATING SYSTEM IS FILLED WITH WATER AND VALVES ARE OPEN

TO START THE BOILER FOLLOW THIS SEQUENCE:

- Turn on fuel supply.
- Switch on power supply to boiler.
- Set the boiler operating high limit control stat to the required temperature. The boiler high limit control stat controls the boiler operation by automatically maintaining the required boiler water temperature output upon call for heat. Safe operation is also maintained by the burner control system which provides the required ignition and shut off sequence.
- Turn on room thermostat.

THE BOILER CAN BE TURNED OFF BY ANY OF THE FOLLOWING MEANS:

- Turn the switch to OFF (mounted on side of boiler).
- Turn OFF the main emergency switch to the boiler.

Note: Burner ignition is delayed until oil line heater is satisfied (1 to 2 min)

UTILITY BOILER**Utility Operating Procedure**

(All outputs)



CONFIRM HEATING SYSTEM IS FILLED WITH WATER AND VALVES ARE OPEN

TO START THE BOILER FOLLOW THIS SEQUENCE:

- Turn on fuel supply.
- Switch on power supply to boiler.
- Set the boiler operating high limit control stat to the required temperature. The boiler high limit control stat controls the boiler operation by automatically maintaining the required boiler water temperature output upon call for heat. Safe operation is also maintained by the burner control system which provides the required ignition and shut off sequence.
- Turn on room thermostat.

THE BOILER CAN BE TURNED OFF BY ANY OF THE FOLLOWING MEANS:

- Turn the switch to OFF (mounted on side of boiler).
- Turn OFF the main emergency switch to the boiler.

Note: Burner ignition is delayed until oil line heater is satisfied (1 to 2 min)

BURNER LOCKOUT

The boiler is factory fitted with a burner control box lockout safety feature which operates automatically if a fault occurs in the burners operation. Should this occur, the light on the front of the burner (**see photo below or burner manual**) will illuminate and its cause must be investigated.

This could be caused by:

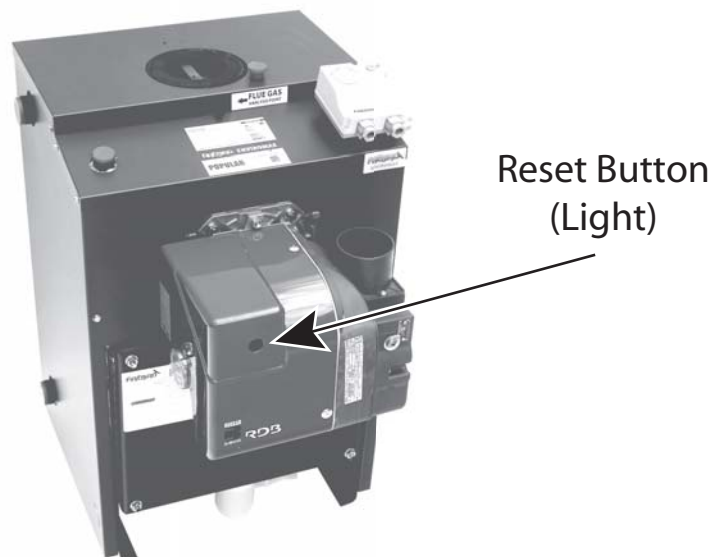
- A. An interruption in the fuel supply. (Eg. empty oil supply tank)
- B. An electrical supply fault.
- C. A fault with the burner or its safety control system.
- D. The failure of a component. (Eg. photo cell)
- E. Worn or dirty oil nozzle.

Before attempting to restart the boiler the front panel and the burner cover should be removed and a visual check should be made for any obvious problems such as oil leaks, loose connections etc.

ENSURE OIL TANK CONTAINS CORRECT GRADE FUEL NO. 2 OIL

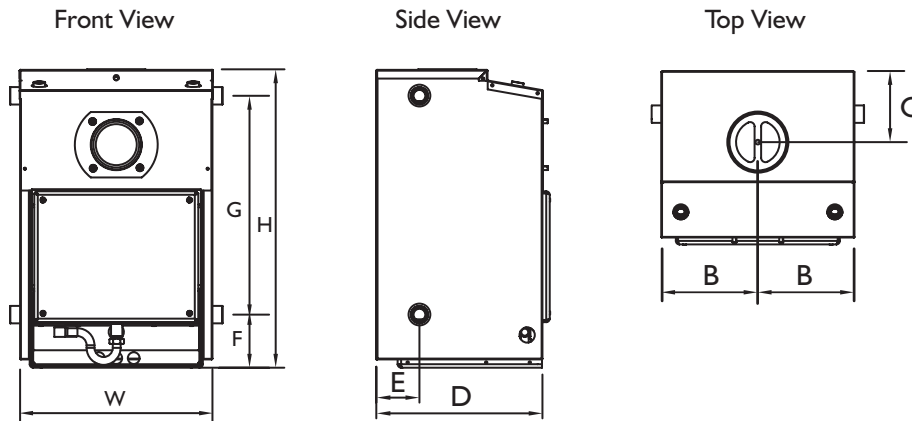
TO RESTART THE BOILER

1. Press reset button **See Burner Manual or see photo below.**
2. Ensure that the boiler thermostat, room thermostat and any external controls connected to the boiler are set to call for heat.
3. Check that the oil tank valves are open and there is sufficient oil in the tank.
4. Check that the burner lockout light is unlit and with the 'main switch ON', the boiler will be ready to begin its start sequence.



2 2.1 - POPULAR BOILER - TECHNICAL DETAILS

Firebird Condensing Range



Model	Output Kw/hr	Weight lbs (incl. Burner)	Dimensions (inches)								
			H	W	D	BURNER DEPTH	B	C	E	F	G
Popular P90	90,000	247	27	17.4	15	10	8.7	6.4	3.9	4.8	19.75
Popular P120	120,000	254	27	17.4	15	10	8.7	6.4	3.9	4.8	19.75

Steel or Copper Pipe Not Plastic to be used for a minimum of 4 ft off the boiler supply & return

Boiler Model		P90	P120
Max Heat Output	Kw Btu/h ('000)	26 90	35 120
CONNECTIONS			
Heating Flow		1" NPT	1" NPT
Heating Return		1" NPT	1" NPT
Drain Off Cock		3/4" NPT	3/4" NPT
Condense Drain Off Connection.		3/4" PLASTIC	3/4" PLASTIC
WATER CONTENT			
Water Content Boiler		6 Gallons	6 Gallons
FLUE (Indoor Boilers) Concentric Flue			
Balanced Flue Assembly		5"	5"
Conventional flue Socket		5" id.	5" id.
Flue Draught Req'd. (Min W.C.)		0.040"	0.040"
Conventional Flue (Max W.C.)		0.15"	0.15"
TEMPERATURE CONTROL			
Boiler Central Heating Control		110°F - 200°F	
HEATING SYSTEM (SEALED)			
Safety Valve Operating Pressure		30 psi.	
Pressure Jet Oil Burners		RIELLO RDB 2.2R	
Fuel		No. 2 Oil	
Electrical Supply		110v. AC 60Hz To be fused at main panel	

ELECTRICAL SUPPLY

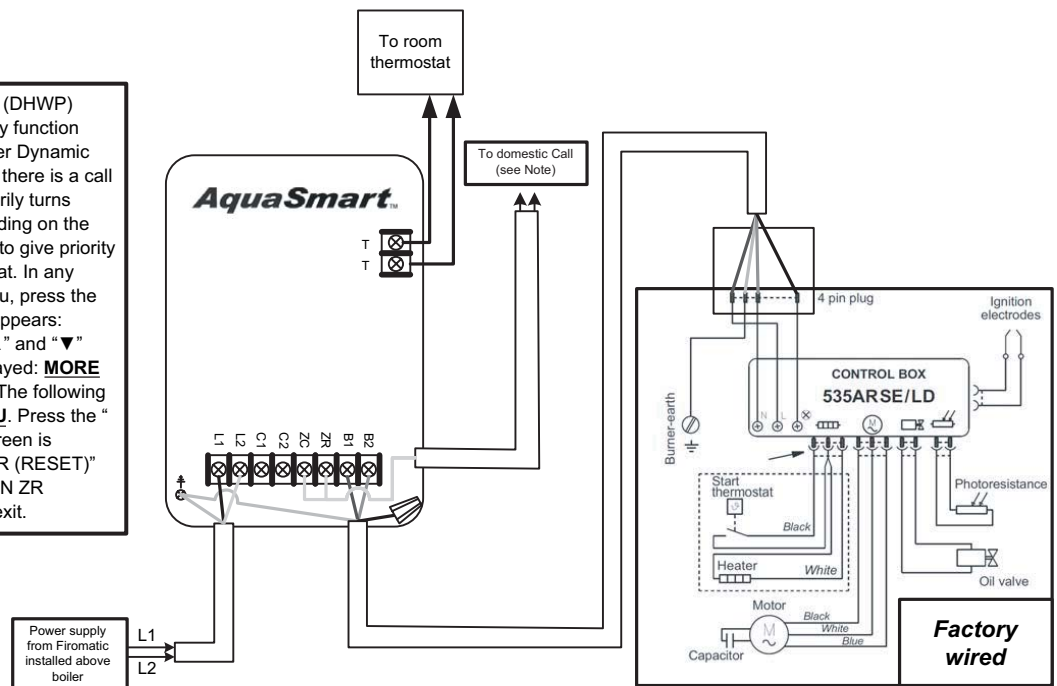
The boiler and controls require 110V 1 phase 60Hz mains electric supply protected with a 15amp fuse.

The guarantee on this product will be rendered void if damaged by power from a stand by electricity supply. i.e. (Generator.)

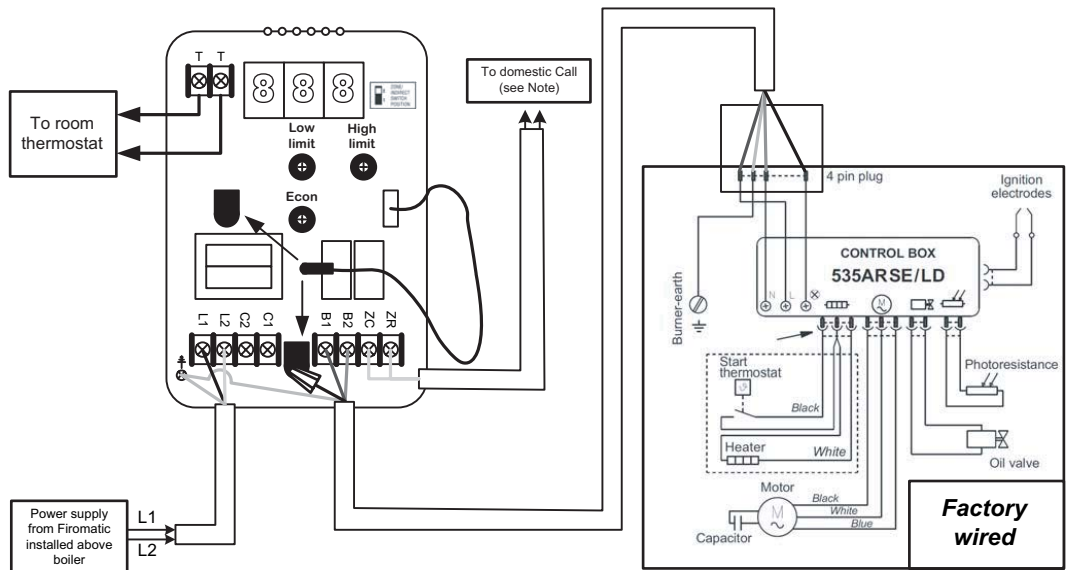
THIS APPLIANCE MUST BE GROUNDED.

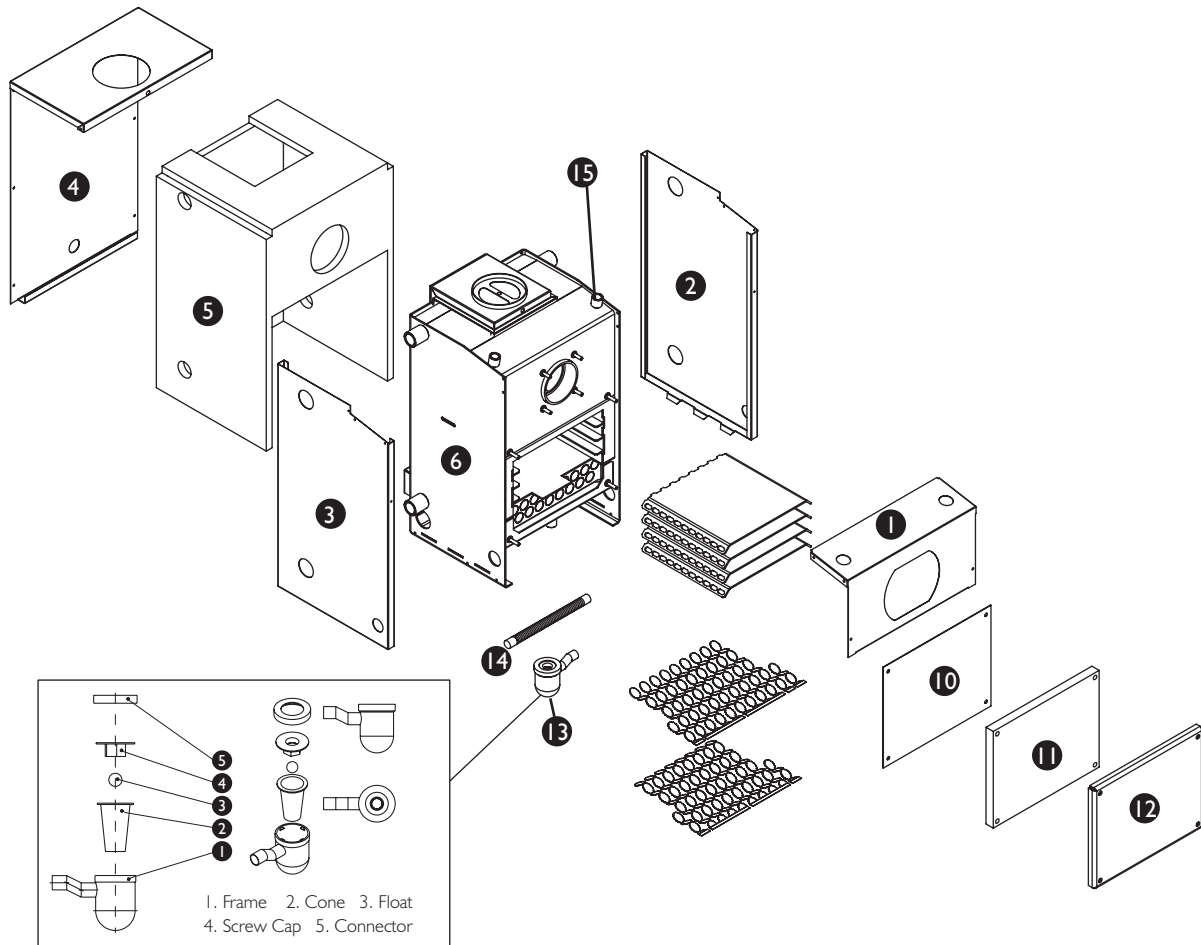
The electricity to the boiler shall come from a dedicated breaker in the electric service box. A service switch should be mounted on the side of the boiler so the burner technician can service the burner and controls. The electrical wiring should be routed so as not to interfere with normal servicing of the boiler. Wiring done in the field between devices not attached to boiler shall conform with the temperature limitations for type T wire (63F/35C) or other specified wire as applicable when installed in accordance to manufacturer's instructions and wiring diagrams. If an external electrical source is utilized, the boiler, when installed, must be electrically bonded to ground in accordance with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the National Electrical Code, ANSI/NFPA 70 and/or the Canadian Electrical Code Part 1, CSA C22.1, Electrical Code.

Changing Domestic Hot Water Priority (DHWP)
Setting The Domestic Hot Water Priority function temporarily overrides the Heat Manager Dynamic Temperature Reset functionality when there is a call for domestic hot water. It also temporarily turns off either the C1 or ZC outputs (depending on the DHWP and circulator source settings) to give priority to the DHWP zone when it calls for heat. In any mode other than an OPTION sub-menu, press the "OPTION" key. The following screen Appears: **HEATMANAGER MENU** Press the "▲" and "▼" keys until the following screen is displayed: **MORE OPTIONS**. Press "ENTER (RESET)". The following screen will be displayed: **LWCO MENU**. Press the "▲" and "▼" keys until the following screen is displayed: **DHWP, OFF**. Press "ENTER (RESET)" to toggle between OFF, ON TT, and ON ZR settings. Press "CANCEL (BACK)" to exit.



Note : For boiler priority
Connect end switch from heating circulator relays or multi-zone panel to T-T. Connect end switch from indirect circulator relay to ZC-ZR. Move Zone/ Indirect Switch to I.
To use a multi-zone panel for both heating and indirect zone connections, connect the zone panel end switch to T-T and install a wire from ZR to the hot terminal of the indirect circulator in the multi-zone box.
Move Zone/Indirect Switch to I.

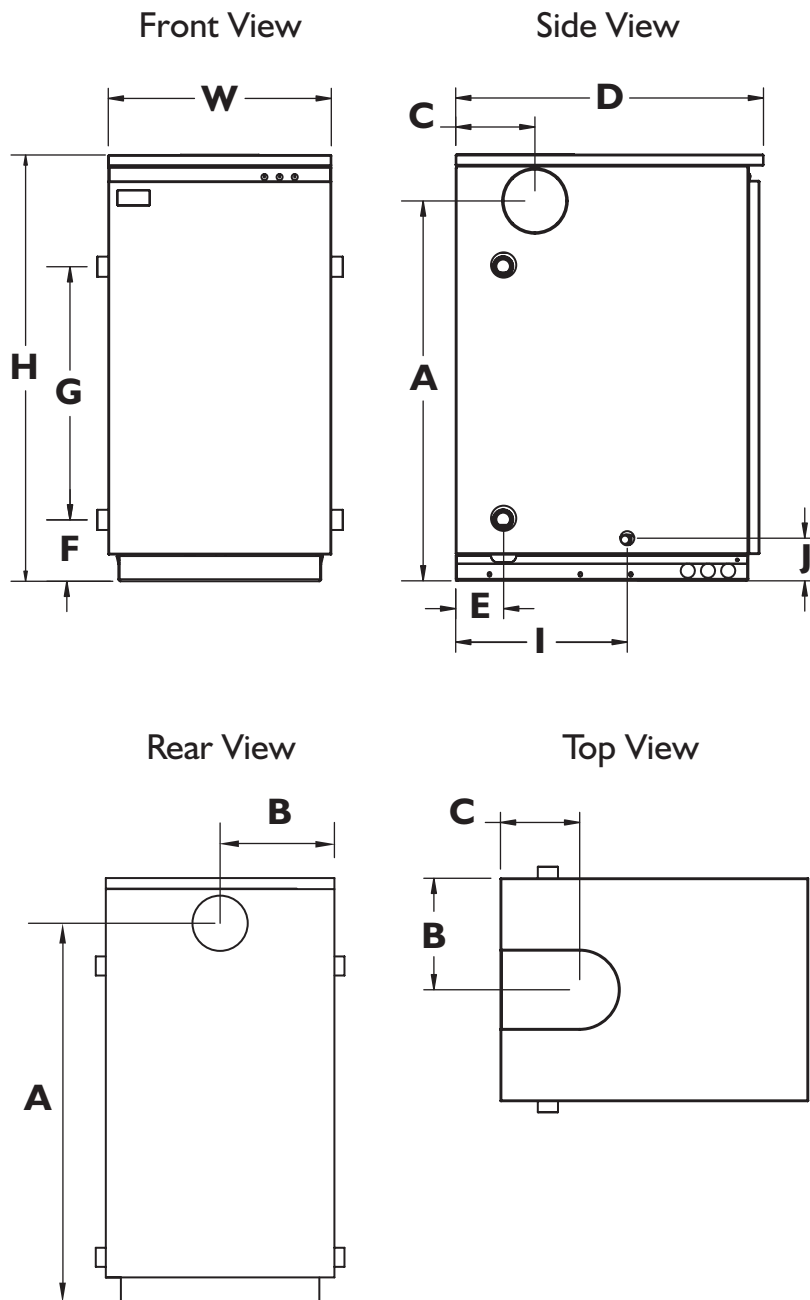




POPULAR BOILER - Models P90 & P120

No.	Description	C26 & C35
1	Burner panel	211545
2	Right Side Panel	211542
3	Left Side Panel	211543
4	Back Panel	211544
5	Insulation	110917
6	Shell	310921
7	Burner (not shown)	Riello RDB 2.2R
10	Graphite Door Seal	111314
11	Door Gasket	110918
12	Boiler Door	210910
13	Condense Trap	110935
14	Condensate Hose	111537
15	Boiler Control Kit	FB Kit

2 2.2 - UTILITY BOILER - DIMENSIONS



Model	Output Btu/h	Weight lbs	Dimensions (inches)								
			H	W	D	A	B	C	E	F	G
Enviromax											
Utility U90	90,000	282	33.25	17.5	24	29.75	8.75	6.2	3.7	4.9	19.75
Utility U120	120,000	288	33.25	17.5	24	29.75	8.75	6.2	3.7	4.9	19.75

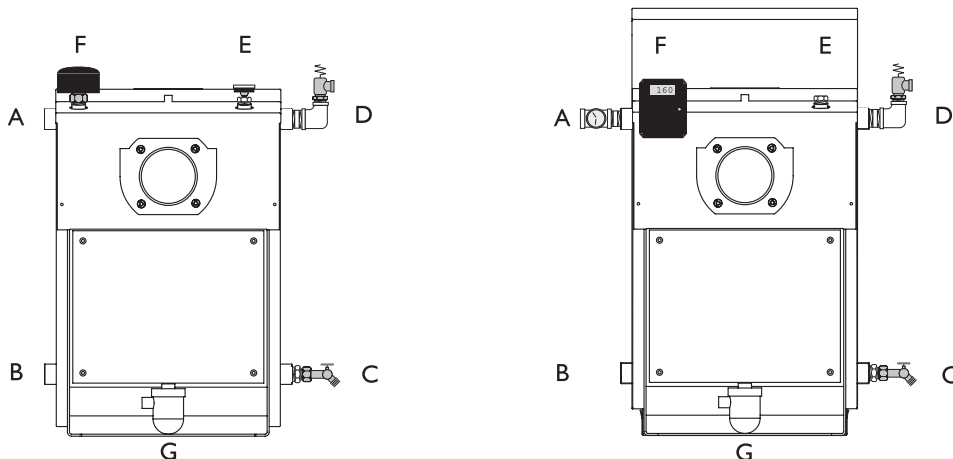
2 2.2 - UTILITY BOILER - TECHNICAL SPECIFICATION

Firebird Condensing Range

Boiler Model		U90	U120
Max Heat Output	Kw	26	35
	Btu/h ('000)	90	120
CONNECTIONS			
Heating Flow		1" NPT	1" NPT
Heating Return		1" NPT	1" NPT
Drain Off Cock		3/4" NPT	3/4" NPT
Condense Drain Off Connection.		3/4" PLASTIC	3/4" PLASTIC
WATER CONTENT			
Water Content Boiler		6 Gallons	6 Gallons
FLUE (Indoor Boilers) Concentric Flue			
Balanced Flue Assembly		5"	5"
Conventional flue Socket		5" id.	5" id.
Flue Draught Req'd. (Min WG.)		0.040"	0.040"
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TEMPERATURE CONTROL			
Boiler Central Heating Control		110°F - 200°F	
HEATING SYSTEM (SEALED)			
Safety Valve Operating Pressure		30 psi.	
Pressure Jet Oil Burners		RIELLO RDB 2.2R	
Fuel		No. 2 Oil	
Electrical Supply		110v. AC 60Hz To be fused at main panel	

Steel or Copper Pipe Not Plastic to be used for a minimum of 4 ft off the boiler supply & return

TRIM COMPONENT INSTALLATION LOCATIONS



POPULAR MODEL

UTILITY MODEL

(SHOWN WITH FRONT COVER REMOVED)

MODEL	A	B	C	D	E	F	G
POPULAR	1" SUPPLY		3/4" DRAIN MOUNTED W/ BUSHING PROVIDED	3/4" PRV MOUNTED W/ NIPPLE AND ELBOW PROVIDED	1/4" TRIDICATOR MOUNTED W/ BUSHING	HYDROLEVEL MOUNTED W/ 3/4" IMMERSION WELL PROVIDED	CONDENSATE TRAP
UTILITY	1" SUPPLY TRIDICATOR MOUNTED W/ REDUCING TEE AND BUSHING PROVIDED	1" RETURN			3/4" PLUG	HYDROLEVEL MOUNTED VERTICALLY ON BRACKET. SENSOR INSTALLED IN 3/4" WELL PROVIDED	

NOTE: TAPPINGS A & D ARE INTERCHANGABLE AND TAPPINGS B & C ARE INTERCHANGABLE

ELECTRICAL SUPPLY

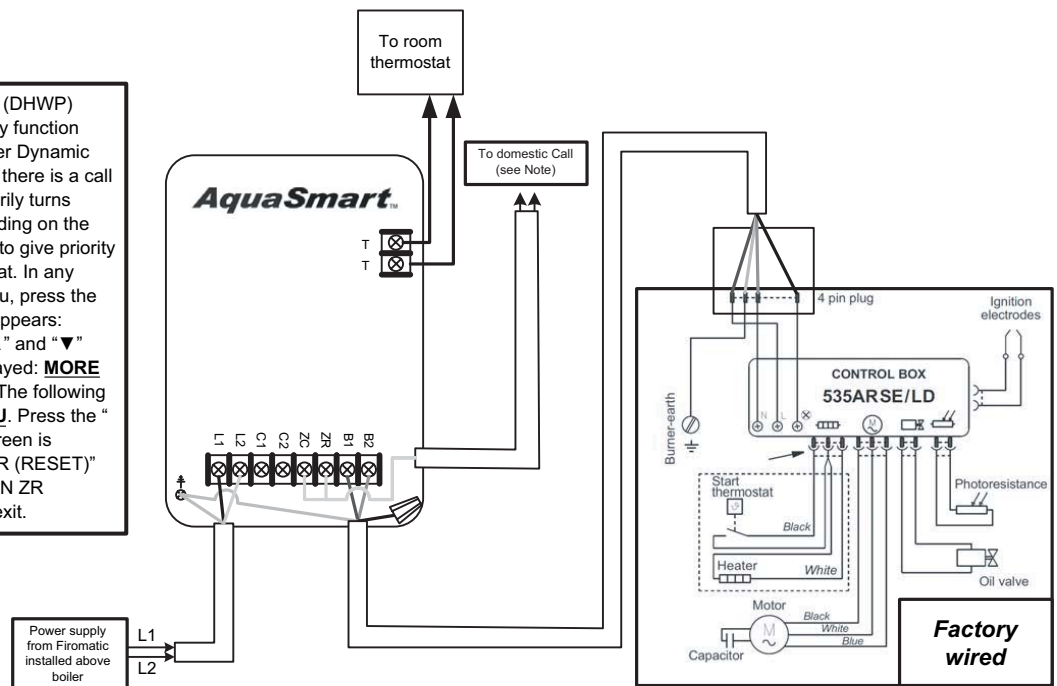
The boiler and controls require 110V 1 phase 60Hz mains electric supply protected with a 15amp fuse.

The guarantee on this product will be rendered void if damaged by power from a stand by electricity supply. i.e. (Generator.)

THIS APPLIANCE MUST BE GROUNDED.

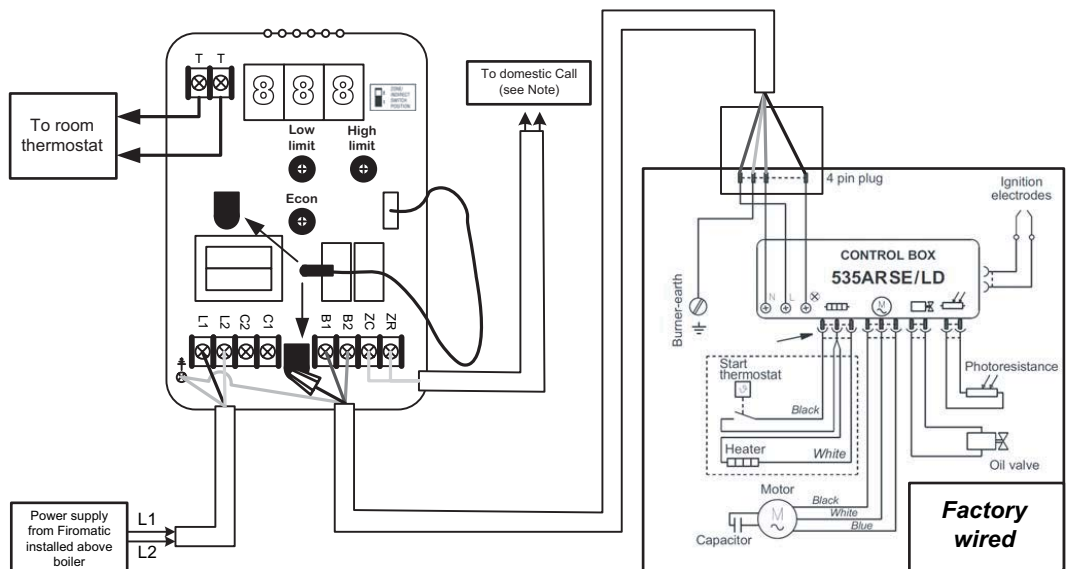
The electricity to the boiler shall come from a dedicated breaker in the electric service box. A service switch should be mounted on the side of the boiler so the burner technician can service the burner and controls. The electrical wiring should be routed so as not to interfere with normal servicing of the boiler. Wiring done in the field between devices not attached to boiler shall conform with the temperature limitations for type T wire (63F/35C) or other specified wire as applicable when installed in accordance to manufacturer's instructions and wiring diagrams. If an external electrical source is utilized, the boiler, when installed, must be electrically bonded to ground in accordance with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the National Electrical Code, ANSI/NFPA 70 and/or the Canadian Electrical Code Part 1, CSA C22.1, Electrical Code.

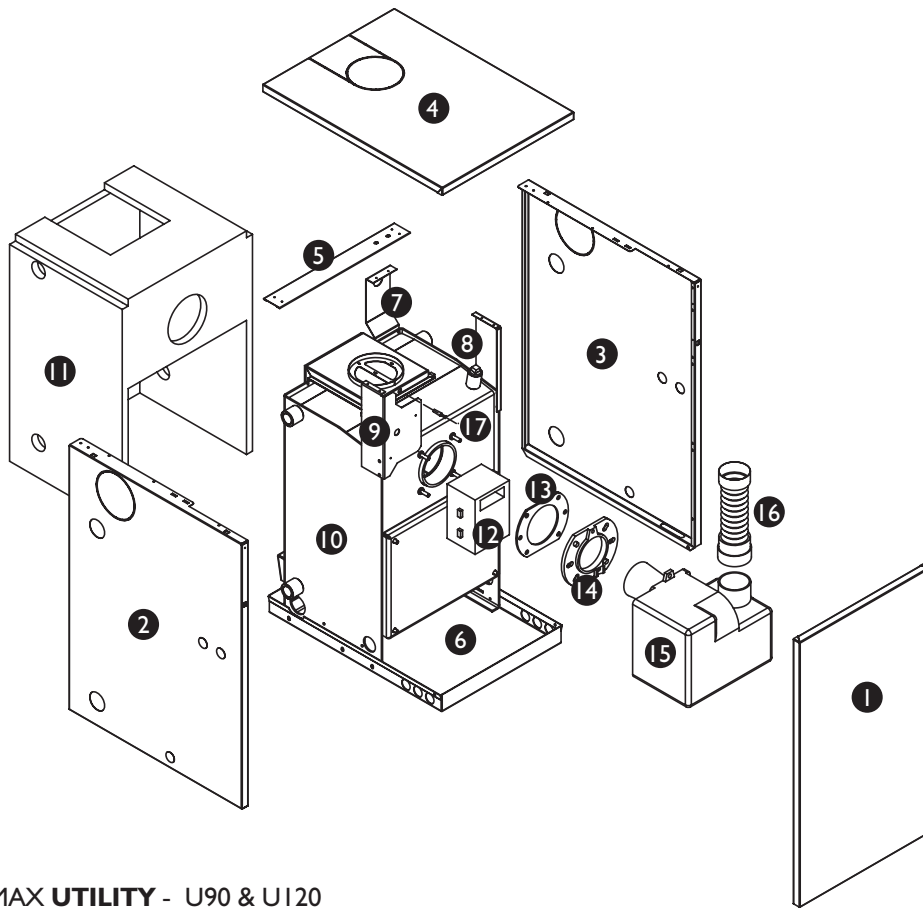
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Note : For boiler priority

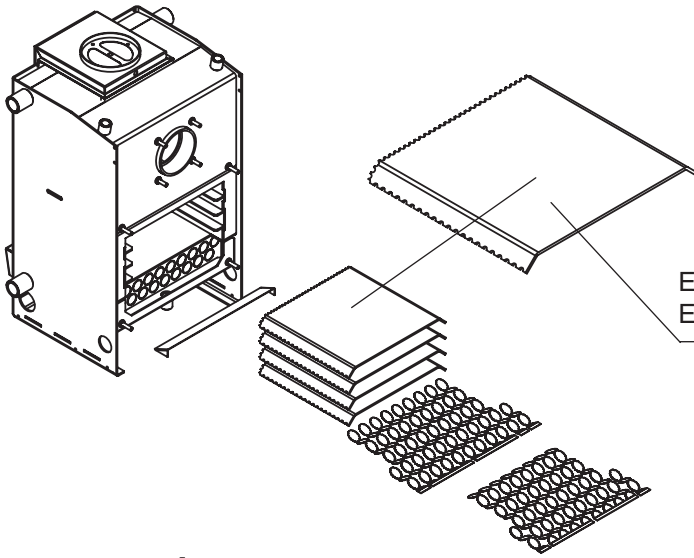
Connect end switch from heating circulator relays or multi-zone panel to T-T. Connect end switch from indirect circulator relay to ZC-ZR. Move Zone/ Indirect Switch to I. To use a multi-zone panel for both heating and indirect zone connections, connect the zone panel end switch to T-T and install a wire from ZR to the hot terminal of the indirect circulator in the multi-zone box. Move Zone/Indirect Switch to I.



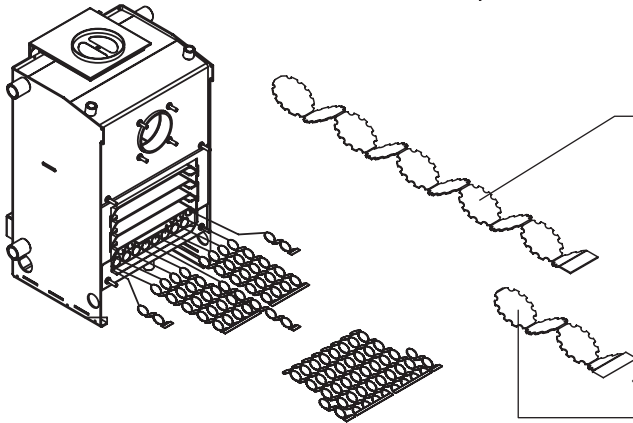


ENVIROMAX UTILITY - U90 & U120

No.	Description	U90 & U120
1	Front panel	212336
2	Left side panel	212343
3	Right side panel	212344
4	Top panel	212337
5	Back Support	212338
6	Base	211874
7	Back support Bracket	210916
8	Right support Bracket	210915
9	Left Support Bracket	213012
10	Boiler Shell	110921
11	Insulation Jacket	110910
12	Hydrostat Operation Control	113026
13	Burner Gasket	3005787
14	Burner Flange	3006384
15	Burner Riello RDB2.2R 90'000btu.	412977
	Burner Riello RDB2.2R 120'000btu.	412978
16	Air Hose.	111902
17	Flue Gas Analysis Blank.	110923

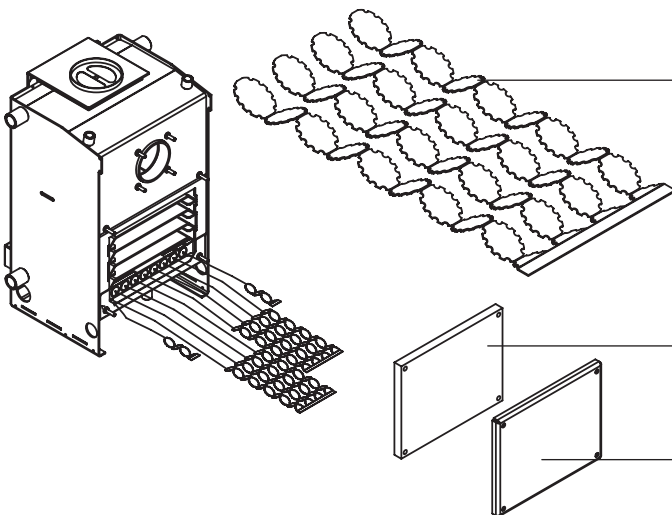


E26 Smoke Baffle R4 - Part No. 212028
E35 Smoke Baffle oblong - Part No. 212122



Tube Baffle (1 Off) E26 & E35 Part No. 110908

Tube Baffle (4 Off) E26 & E35 - Part No. 110909



Tube Baffle (4 Off) E26 & E35 - Part No. 110907

E26 & E35 Door Gasket. - Part No. 110918

E26 & E35 Door. - Part No. 210910

• • • PATENTED BOILER DESIGN • • •

IMPORTANT INFORMATION**Please read this page carefully.**

- **ALL BOILERS MUST BE INSTALLED IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL PLUMBING, HEATING AND ELECTRICAL CODES AND ORDINANCES, AS WELL AS THE REGULATIONS OF THE SERVING ELECTRICAL, WATER AND GAS UTILITIES.**
- **All systems should be designed by competent contractors, and only persons knowledgeable in the layout and installation of heating systems should attempt the installation of any boiler. It is the responsibility of the installing contractor to see that all controls are correctly installed and operating properly when the installation is completed.**
- **Do not burn volatile garbage, gasoline, naphtha or other flammable liquids other than No. 2 fuel oil. All flammable liquids (especially gasoline), chemicals, rags, paper, wood scraps, debris, etc., should be kept away from the boiler at all times. Keep the boiler area clean and free of all fire hazards.**
- **Please read the literature and warranties supplied by the manufacturers of the various accessory equipment. This equipment is warranted by the respective manufacturers, not by Quincy Hydronic Technologies, Inc. Each piece of equipment must be installed and used according to the recommendations of the manufacturer.**

Codes and Regulations:

Installation of the boiler, burner, oil tank and related equipment must conform to national, state and local regulating agencies and codes applicable to the installation of the equipment. In the absence of local requirements, the following codes apply:

A.	NFPA	- #31 Installation of Oil Burning Equipment
B.	NFPA	- #70 National Electric Code
C.	NFPA	- #211 Chimneys and Vents
D.	ANSI	- #Z223.1 National Fuel Gas Code
E.	ANSI	- Domestic Gas Conversion Burner
F.	CAN/CGA	- B149 Installation Codes
G.	ANSI	- CSD-1
H.	CSA	-C22.1 Canadian Electrical Code, Part 1

The above codes are available from:

National Fire Protection Association (NFPA)
 Battery March Park
 Quincy, MA 02269
<http://www.nfpa.org>

CSA International
 8501 East Pleasant Valley Road
 Cleveland, OH 44134
<http://www.csa-international.org>

PRE- INSTALLATION CHECKS

The installer should also be aware of his/her responsibilities under regarding aforementioned act. The interests of safety are best served if the boiler is installed and commissioned by a competent trained licensed technician.

WARNING

Any appliance that burns natural gas, propane gas, fuel oil, or coal is capable of producing carbon monoxide (CO). Carbon Monoxide (CO) is a gas which is odorless, colorless and tasteless but is very toxic. CO is lighter than air and thus may travel throughout the building.

BRIEF EXPOSURE TO HIGH CONCENTRATIONS OF CO, OR PROLONGED EXPOSURE TO LESSER AMOUNTS OF CO MAY RESULT IN CARBON MONOXIDE POISONING. EXPOSURE CAN BE FATAL AND EXPOSURE TO HIGH CONCENTRATIONS MAY RESULT IN THE SUDDEN ONSET OF SYMPTOMS INCLUDING UNCONSCIOUSNESS.

Symptoms of CO poisoning include the following:

- dizziness
- headache
- nausea
- vision problems
- loss of muscle control
- weakness
- shortness of breath
- unclear thinking
- unconsciousness

The symptoms of CO poisoning are often confused with those of influenza, and the highest incidence of poisoning occurs at the onset of cold weather or during flu season. A victim may not experience any symptoms, only one symptom, or a few symptoms. **Suspect the presence of carbon monoxide if symptoms tend to disappear when you leave your home.**

The following signs may indicate the presence of carbon monoxide:

- Hot gasses from appliance, venting system pipes or chimney, escaping into the living space.
- Flames coming out around the appliance.
- Yellow colored flames in the appliance.
- Stale or smelly air.
- The presence of soot or carbon in or around the appliance.
- Very high unexplained humidity inside the building.

IF ANY OF THE SYMPTOMS OCCUR, OR IF ANY OF THE SIGNS OF CARBON MONOXIDE ARE PRESENT, VACATE THE PREMISES IMMEDIATELY AND CONTACT A QUALIFIED HEATING SERVICE COMPANY, OR THE FIRE DEPARTMENT.

ONLY QUALIFIED, LICENSED SERVICE CONTRACTORS SHOULD PERFORM WORK ON YOUR FIREBIRD BOILER.

FUEL SPILLAGE

1. Switch off all electrical and other ignition sources.
2. Remove all contaminated clothing to safeguard against fire risk and skin damage. Wash affected skin thoroughly with soap and water and remove clothing to a safe well ventilated area and allow to air before cleaning.
3. Contain and smother the spill using sand or other suitable oil absorbent media or non-combustible material.
4. Do not allow fuel to escape into drains. If this happens, contact the relevant authorities in your area.
5. Consult local Authority about disposal of contaminated soil.

SAFETY

Safe use of Fuel Oil.

These fuels give off a flammable vapour when heated moderately. Vapour ignites easily, burns intensely and may cause explosion. The vapour can follow along at ground level for considerable distances from open containers and spillages collecting as an explosive mixture in drains, cellars, etc.

Fuels remove natural oils and fats from the skin and this may cause irritation and cracking of skin. Barrier cream containing lanolin is highly recommended together with good personal hygiene and where necessary appropriate personal protection equipment. (P.P.E.)

Fuel oil may also cause irreversible damage to health on prolonged or repeated skin contact.

Always store fuels in a properly constructed and labelled tank. Always handle fuel in open air or well ventilated space away from sources of ignition and refrain from smoking.

Always drain fuel using a proper fuel retriever, funnel or mechanical siphon. Never apply heat to a fuel tank, container or pipework. Never siphon fuel through tube by mouth. If accidentally swallowed contact doctor immediately and do **NOT** induce vomiting. Avoid inhaling fuel vapour as this can cause light headedness and seriously impair judgement.

FIRST AID

If fuel is accidentally swallowed:-

- * Seek medical attention immediately. Do **NOT** induce vomiting.

If fuel is splashed into eyes:-

- * Wash out with running water for at least ten minutes and seek medical attention.

Please note following important points before commencing installation. Failure to do so will invalidate warranty

INSTALLATION & COMMISSIONING:

Boilers must be installed, commissioned and serviced by qualified and experienced persons and as set out in the installation manual, using correct test equipment.

PLASTIC PIPING - WARNING

The boiler thermostat control and safety system is not designed, and must not be relied on, to protect plastic pipe (PEX) from overheating. Plastic pipe must never be connected directly to the boiler. If you choose to use plastic pipe anywhere on your heating circuits, then please consult the plastic pipe manufacturer for their instructions on how to ensure their product never overheats. Our boiler control and safety high limit thermostats are not designed to fulfil this function. (They may suggest the fitting of independent pipe thermostats, or thermostatic mixing valves linking flow and return).

• QHT accepts no responsibility for failure of plastic piping and fittings for what ever reason.

WARNING:

The manufacturer cannot accept responsibility for any damage to persons, animals or property due to error in installation or in the burner adjustment or due to improper or unreasonable use or non observance of the technical instruction enclosed with the burner, or due to the intervention of unqualified personnel.

BOILER OPERATING AND HIGH LIMIT CONTROLS

The HIGH LIMIT CONTROL on the boiler allows the homeowner to vary the water flow temperature from a low of 110°F to a high of 200°F, depending on the model.

In cases where the water level in the heating system is below elevation to boiler a low water cut off is supplied. This is to prevent the boiler from being dry-fired.

BURNER

The burner is factory set for use with No. 2 Oil.

ROOM SEALED BALANCED FLUES.

“The flue terminal should be mounted so that it is separated from any combustible material forming a part of the building by a minimum of 2”

Such combustible material may take the form of cladding on the surface of a non-combustible wall through which the flue outlet passes. In such a case, the cladding adjacent to the flue outlet should be replaced by non-combustible material extending not less than 2” beyond the outside dimensions of the flue outlet.

The wall through which the flue outlet passes may itself be of combustible material, and if so the flue outlet, where it passes through the wall, should be surrounded by non-combustible insulating material not less than 2” thick (**see diagram on Page 16**). The insulating material itself should be contained in a steel liner to provide the necessary structural rigidity and to prevent moisture reaching the insulating material.”

Ensure that adequate clearance is available for making the water and flue connections.

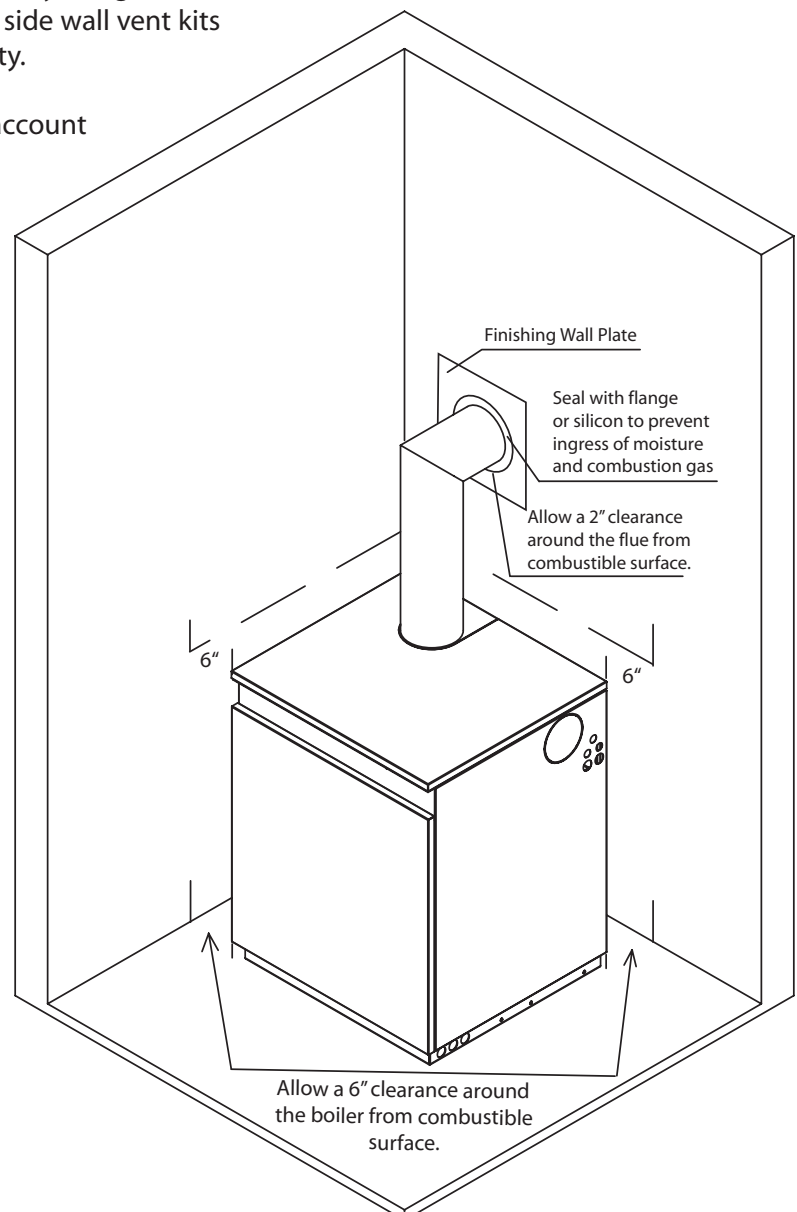
As the boiler is serviced from the front, no headroom clearance is necessary but a clearance of 3 ft must be available at the front of the boiler.

The boiler must be installed on a level non-combustible floor capable of supporting the weight of the boiler and its water contents.

Sound levels must also be a consideration. Whilst Firebird Enviromax boilers are one of the quietest boilers on the market, some householders are particularly sensitive and the following points should be considered:

1. Tiled surfaces in a small room will amplify noise - particularly if the wall construction is hollow.
2. If a conventional flue passes through a bedroom it is capable of transmitting noise.
3. Side wall balanced flue terminals can produce exhaust noise on the outside terminal and this should be considered when siting near adjacent property.
4. The Firebird Balanced Flue Kit has been specifically designed for Firebird's indoor boilers. The use of third party side wall vent kits is not recommended and will affect its warranty.
5. The placement of the boiler should take into account the disposal of condensate products.

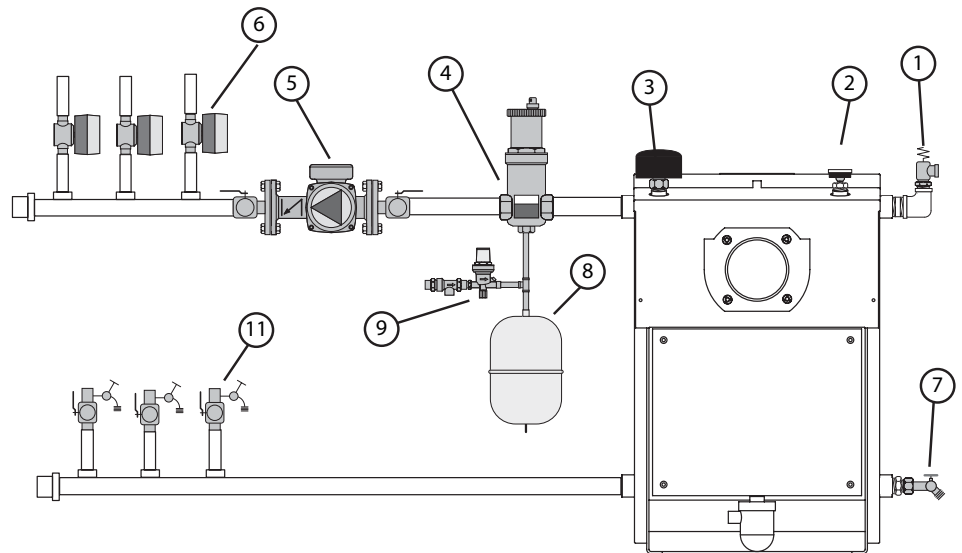
- It is recommended that a suitable corrosion inhibitor is added to the heating system.
- New and existing systems should be treated with chemical cleaner and properly flushed before the boiler is fitted and corrosion inhibitor added.
- In areas of hard water a suitable descaler would also be required.



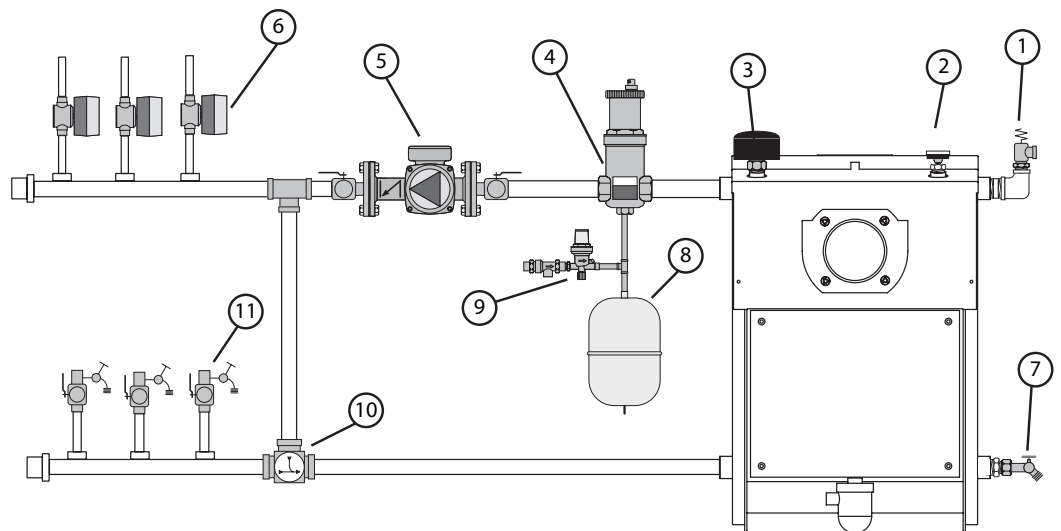
Firebird boilers are supplied with high limit control, PRV, tridicator and boiler drain. These components should be installed in the locations indicated in Figure on page 9 of this manual. The supply piping should be piped from either the top right or left hand tapping of the boiler. The return piping should be piped to the lower right or left hand tappings. Air elimination must be provided from a air scoop or air separator for proper noise free operation. It is always preferred to pump away from the air elimination and expansion tank as shown in the diagrams below. The expansion tank must be sized properly to allow for expansion of the entire central heating system. A back flow preventor and auto fill must also be installed onto the system. It is recommended to install the cold water auto fill at the same point as the expansion tank. Zoning for the system may be done using zone valves or individually zoned circulators. It is important if zoning with circulators to ensure that the system is not over pumped. Over pumping can cause system noise and inconsistent heating of the heating elements. Each individual zone should be equipped with a purging station. This will allow the installer to individually isolate each zone and remove air upon initial filling of the system. If the Firebird boiler is being installed into a high temperature system, i.e. baseboard, it is acceptable to install the boiler in a supply return scenario. However, if the boiler will be installed in a system where sustained low water temperatures could be returned to the boiler special precautions must be taken. In a low temperature system a system bypass should be installed so that the return water temperature to the boiler never falls below 110°F. Failure to do this could cause inconsistent heating as well as premature failure of the boiler body. Below are general piping diagrams which show basic layouts for proper installation of the boiler. These are not the only acceptable manner in which the boiler can be piped, but are supplied as a guideline.

High Temperature Central Heating System

- Legend:**
- 1 - Pressure relief valve
 - 2 - Hydrostat Operating Control
 - 3 - Tridicator
 - 4 - Air Elimination
 - 5 - System Circulator
 - 6- Zone Valves
 - 7- Boiler Drain
 - 8- Expansion Tank
 - 9- Back Flow Preventer and Auto Fill
 - 10- Thermostatic Boiler Protection Valve
 - 11- Purging Stations



Low Temperature Central Heating System



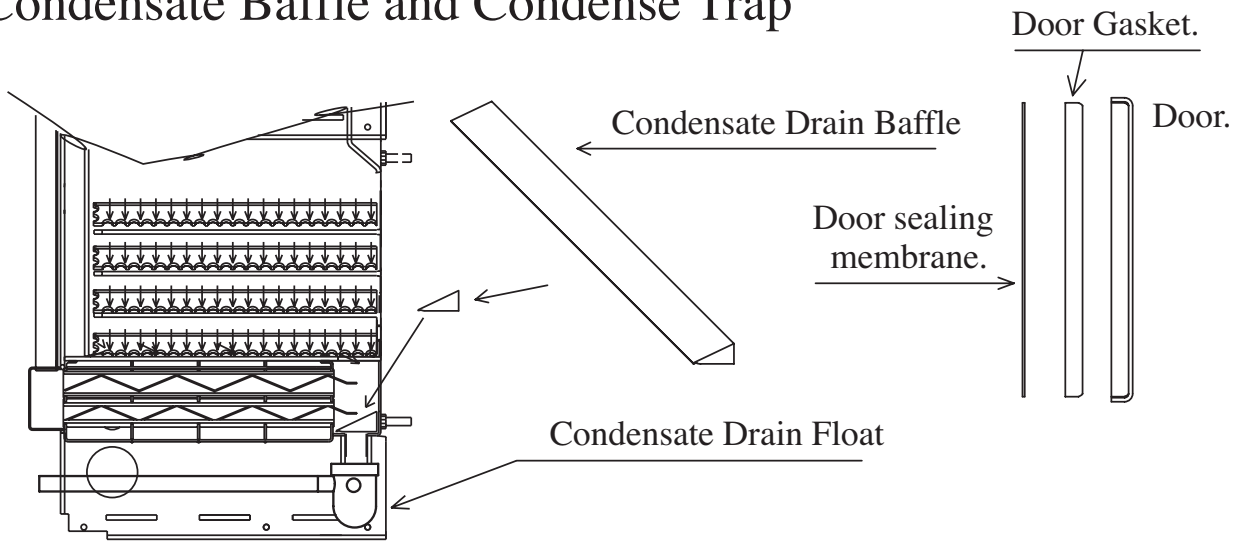
IMPORTANT
Always prime condensate trap
and install condensate neutralizer

Fig. 1



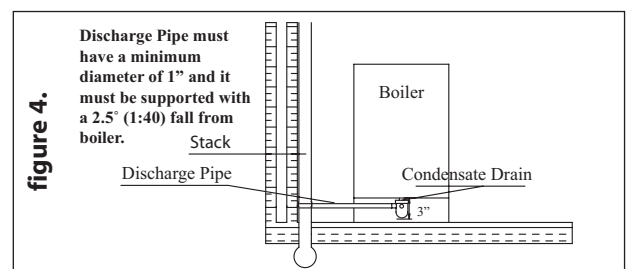
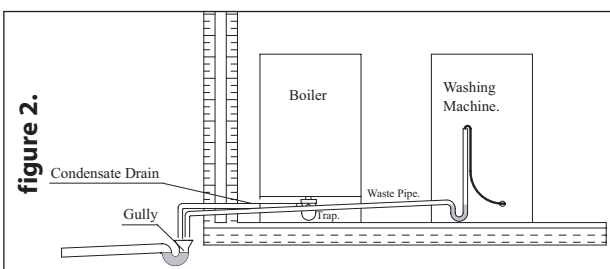
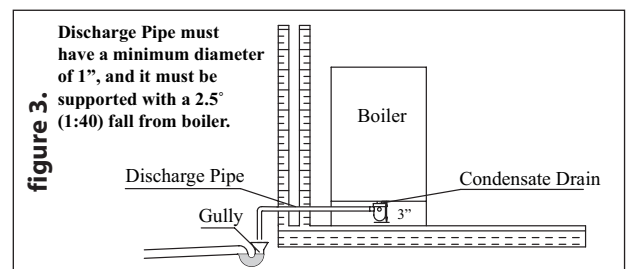
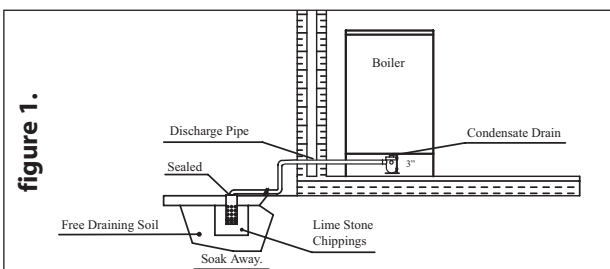
The condensate trap is located at the base of the boiler

Condensate Baffle and Condensate Trap



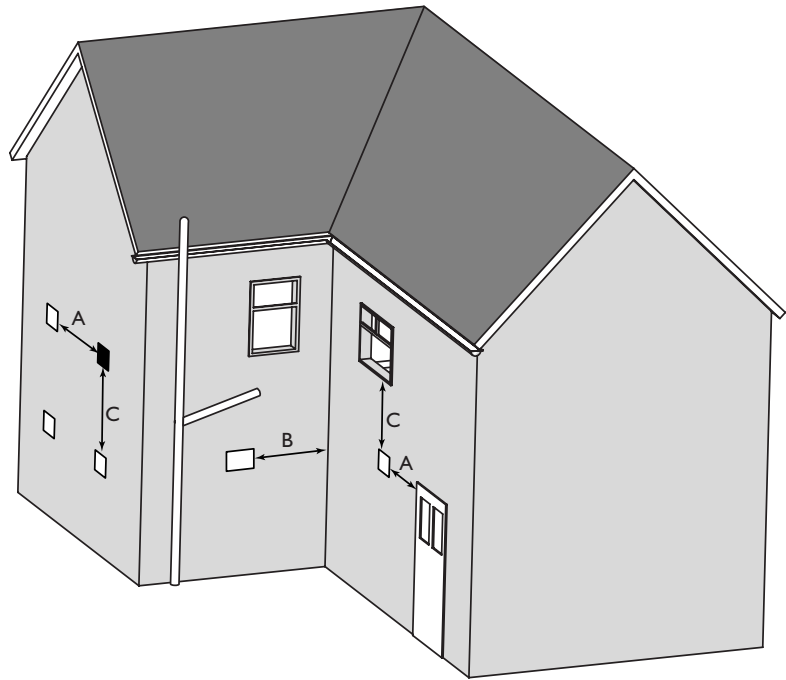
Before switching on your Firebird condensing oil boiler check that:

- (1) The float & condensate drain baffle are in place.
- (2) That the condensate trap is primed.
- (3) The condensate discharge pipe is a corrosion resistant pipe.



BALANCED FLUE LOCATION

- A.** Horizontal from opening, airbrick, opening window etc.
- B.** From an internal or external corner.
- C.** Below an opening, airbrick, opening window etc.



- Notes:
- 1.** The terminal should be positioned to avoid combustion products entering the building or accumulating in stagnant pockets around buildings.
 - 2.** The terminal must be installed 7 ft above public walkway or in a position where any person has access to it (i.e. a balcony).
 - 3.** A heat protection shield should be fitted if the terminal is less than 36" from a plastic or painted gutter or less than 18" from painted eaves.

* **FIREBIRD RECOMMENDS THAT THE FLUE SHOULD BE A MINIMUM DISTANCE OF 4 FT FROM OPENINGS SO THAT IT DOES NOT CAUSE A NUISANCE AND PERMITS THE DISPERSAL OF COMBUSTION PRODUCTS.**

Building Regulations

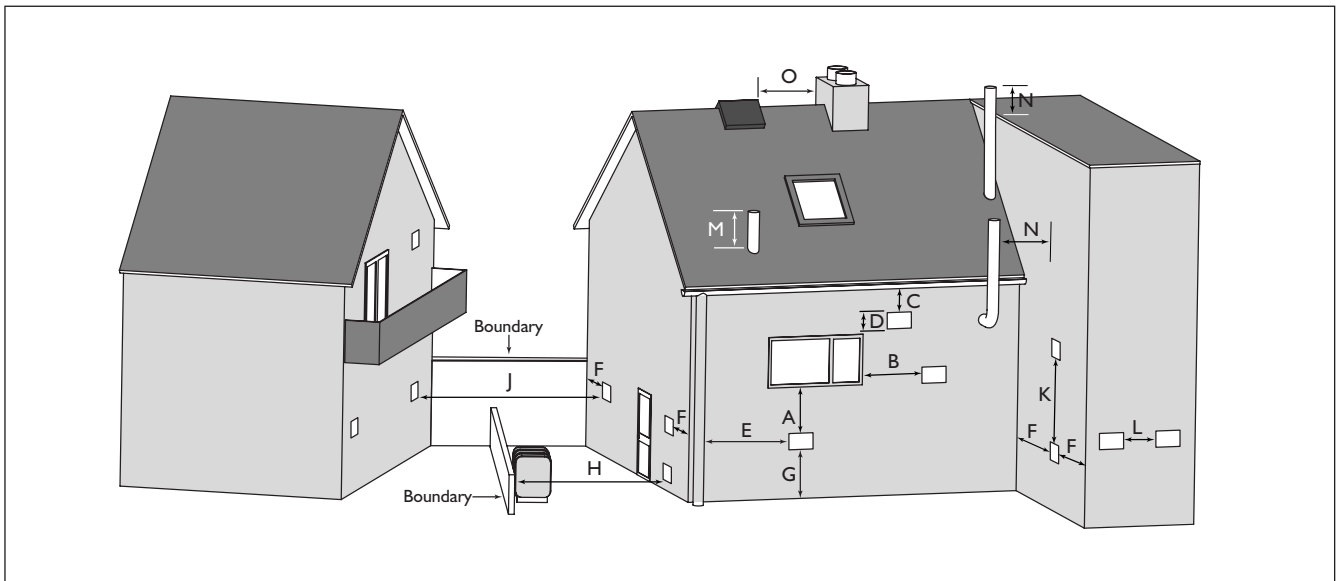
BUILDING REGULATIONS	A	B	C
United States & Canada	48"	36"	48"

*Where the terminal is within 4 ft of any plastic material, such material should be protected from the effects of combustion products of fuel. There are additional general requirements in most Regulations and Standards that the flue must be positioned so that it does not cause a nuisance and permits the dispersal of combustion products.

NOTE: The Buildings Regulations clearances shown above are minimum allowed. To take account of prevailing site conditions it is advisable wherever necessary to follow the manufacturers preferred recommendation. If in doubt contact manufacturer for advice.

ALWAYS CHECK FOR ANY BUILDING REGULATIONS AMENDMENTS WHICH MAY HAVE BEEN ISSUED AFTER THE PUBLICATION OF THIS MANUAL

Recommended clearances for Open Flues, and Balanced Flues fitted to Oil Fired Boilers.



Minimum distances to terminals in inches as measured from top of the chimney or the rim of a low level discharge opening.

APPLIANCE BURNER TYPE	PRESSURE JET
A Directly below an opening, air brick, opening window etc *	48"
B Horizontally to an opening, air brick, opening window etc *	48"
C Below a gutter or eaves *	36"
D Above door, window, or gravity inlet	12"
E From vertical sanitary pipework	12"
F From an internal or external corner or surface or boundary alongside the terminal	36"
G Above ground or expected snow level	12"
H From a surface or boundary facing the terminal	60"
J From a terminal facing the terminal	60"
K Vertically from a terminal on the same wall	60"
L Horizontally from a terminal on the same wall	40"
M Above the highest point of an intersection with the roof	36"
N Above a vertical structure less than 120" from the side of the terminal	24"
O From a ridge terminal to a vertical structure on the roof	60"

These notes form an integral part of the information shown above.

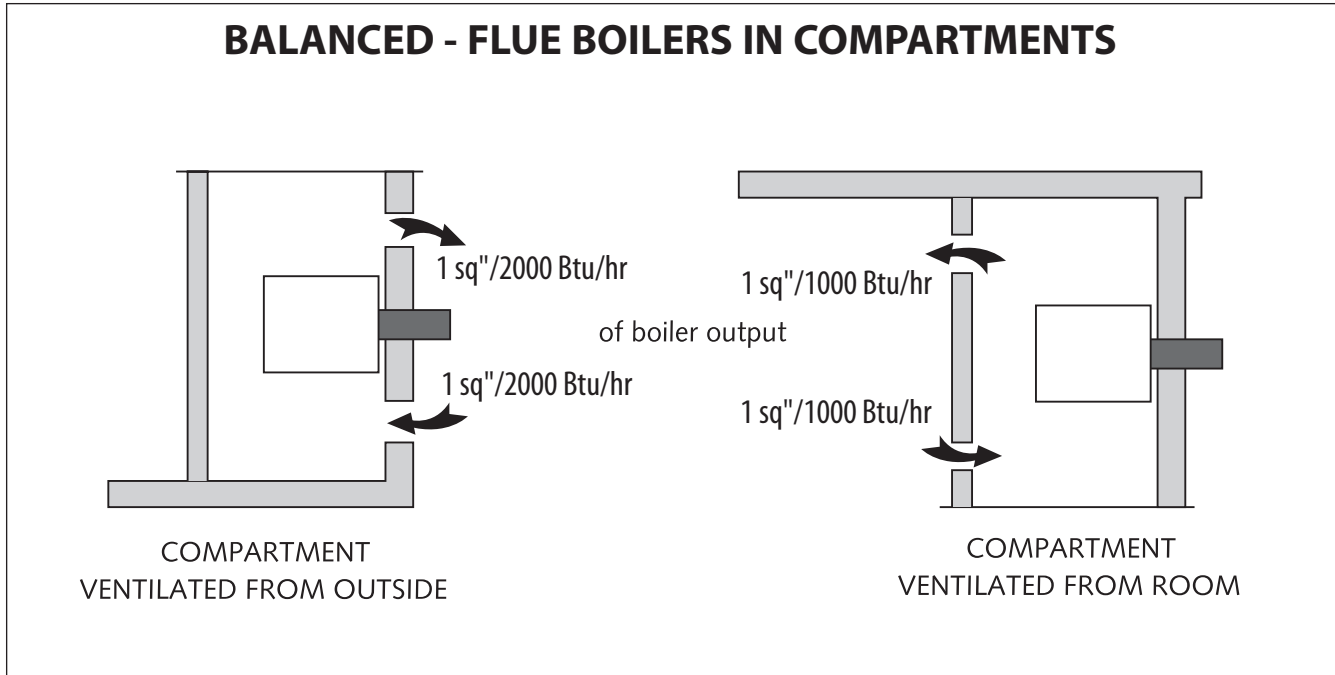
1. Terminals should be positioned so as to avoid products of combustion accumulating in stagnant pockets around the building or entering into buildings.
2. Vertical structure in N and O include tank or lift rooms, parapets, dormers etc.
3. Terminating positions A to L are only permitted for appliances that have been approved for side wall flue discharge.
4. Terminating positions must be at least 6 ft distant from an oil storage tank unless a wall with at least 30 mins fire resistance and extending 18" higher and wider than the tank is provided between the tank and the terminating position.
5. Where a flue is terminated less than 36" away from a projection above it and the projection consists of plastic or has a combustible or painted surface, then a heat shield of at least 36" wide should be fitted to protect these surfaces.
6. The terminal must be 7 ft above the ground, deck, flat roof or other place to which any person has access, the terminal must be protected by a guard.
7. Notwithstanding the dimensions given in the drawing and table, a terminal should not be sited closer than 24" to combustible material.

BALANCED FLUE BOILERS

The Firebird boiler may be set for Room-sealed balanced flue operation using a Firebird condensing balanced flue kit. This kit does **not** draw **combustion air** from inside the room. **It is drawn from outside direct to burner by airpipe supplied with boiler.** Flue gases are expelled through the same kit. However, if the boiler is installed in a **compartment** or **small room**, some **ventilation air** is necessary to maintain acceptable temperature in boiler area.



Balanced flue boiler in room (eg. kitchen) does not require individual ventilation.



Use of flue systems other than the matching Firebird roomsealed concentric flue kit may invalidate warranty.

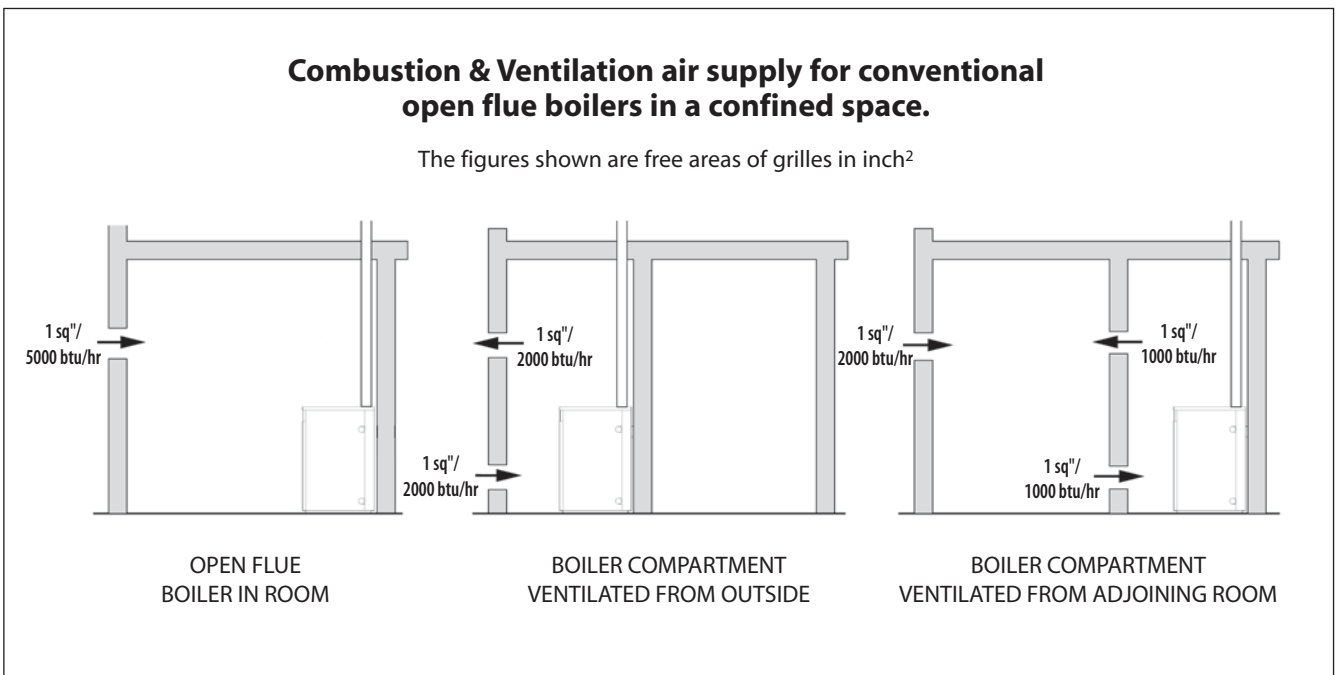
Ventilation and Combustion Air

Conventional Flue Boilers

An adequate supply of **combustion and ventilation air** is essential for efficient and safe boiler operation and the openings for this should be positioned to cause least possible draught, **with no possibility of being accidentally blocked.**

Please note: NFPA Code of Practice for Oil Firing, requires a permanent air inlet opening of **4 sq" per 3413 Btu/hr (above 17060 Btu/hr)** of boiler rated output is needed.

Also, when the boiler is installed in a compartment or confined space, **ventilation** openings are required to ventilate and to avoid overheating in the boiler area.



Regulations Clearances found in NFPA #1



N.B. Please Carefully Note:

- A. Most boiler installations in garages are not permitted
- B. Check VL 4 NFPA

Definitions



Combustion Air :

Air required directly by boiler oil burner for combustion process.

Ventilation Air :

Air required in room for ventilation, cooling, etc. and to promote a healthy living environment.

Unconfined Space :

Any space whose volume is equal to or greater than 50 cu. ft. per 1000 btu/hr of the aggregate input rating of all fuel-burning appliances installed therein.





CONDENSATE PLUME DISPERSAL

When choosing the location for a condensing boiler, special consideration must be given to the positioning of the flue terminal. Care should be taken to locate it so as to prevent either the end user or their neighbours perceiving the plume to be a nuisance.

1. Plumes can extend out horizontally and can also drift out to the sides and above the terminal. Care needs to be taken, therefore, to avoid the plume reaching adjacent surfaces, particularly windows and neighbours dwellings.
2. Flue terminals need to be located where air can pass freely across them to disperse vapours.
3. The effect of the moisture generated must be considered in relation to the possible corrosion of metal parts it might reach and to the possible formation of ice on pathways in freezing conditions.
4. Keep flue terminals a minimum of 4ft (horizontally) from openings in the building.
5. Do not install flue terminals directly below a window.
6. Do not install flue terminals next to a door.
7. Do not install flue terminals within 4ft of ventilated soffits or eaves.
8. Keep flue terminals at least 4ft away from a surface or boundary facing the terminal.
9. Follow the appliance manufactures instructions.

CONVENTIONAL FLUE SYSTEMS

IMPORTANT

The Firebird condensing boiler **must not** be installed with existing flue systems. A flue system suitable for wet flues must be used. If a flue system which is unsuitable is used it **will invalidate the warranty**.

Because of the high operating efficiencies of the Firebird condensing boilers and low flue gas temperatures, it is necessary to pay extra special attention to the flues and chimneys.

Existing chimneys must be lined with a liner certified as suitable for condensing oil boilers by flue manufacturer.

Twin wall insulation must be used for external applications, with **seals** and stainless steel inner skin.

Only polypropylene or high grade stainless steel can be used between boiler and chimney in an internal installation, aluminium or asbestos type material **must not be used (Vitreous enamel must not be cut)**.

Condensate must be able to run back into the flue chamber of the boiler and not escape, as up to 1.5 Quarts of condensate can be produced in a conventional flue. No trap is required in the flue system.

The terminal must be positioned to avoid combustion products entering the building and as per Building Regulations.

Every individual concerned with any aspect of installation should be deemed as competent, and be aware of all current National and Local Government Standards and Building & Installation Regulations.

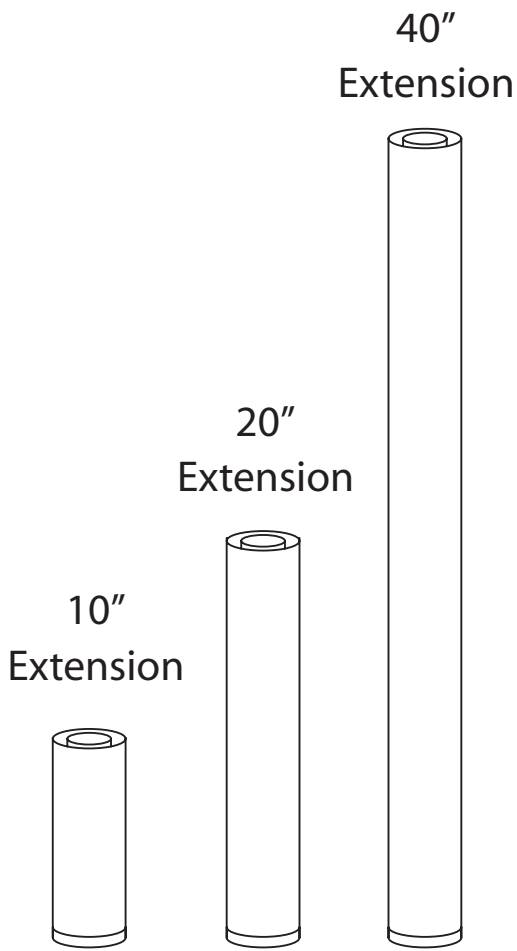
BALANCED FLUE SYSTEMS

Maximum flue length = **20 ft**

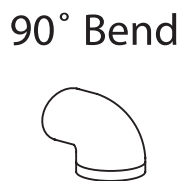
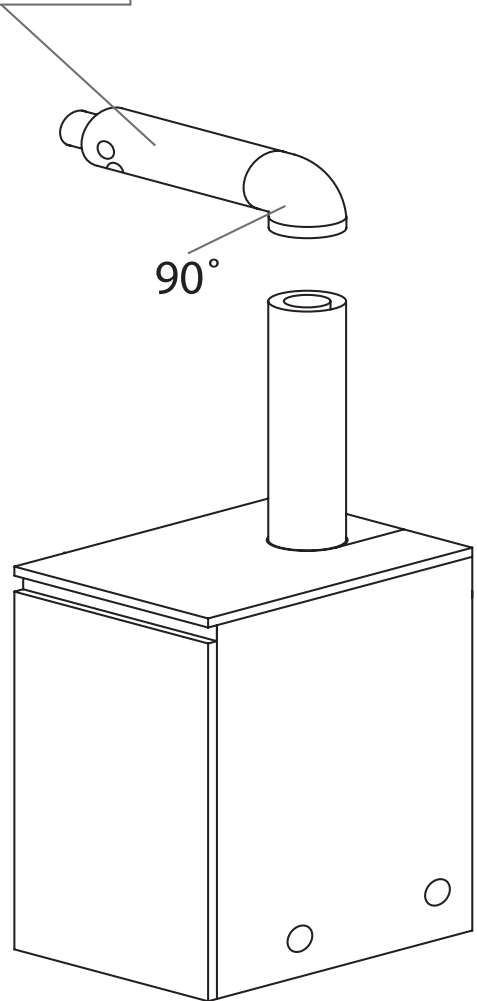
Overall length must take into account

45° bend = 20" (1.66 ft) length

90° bend equivalent to 3.25 ft length



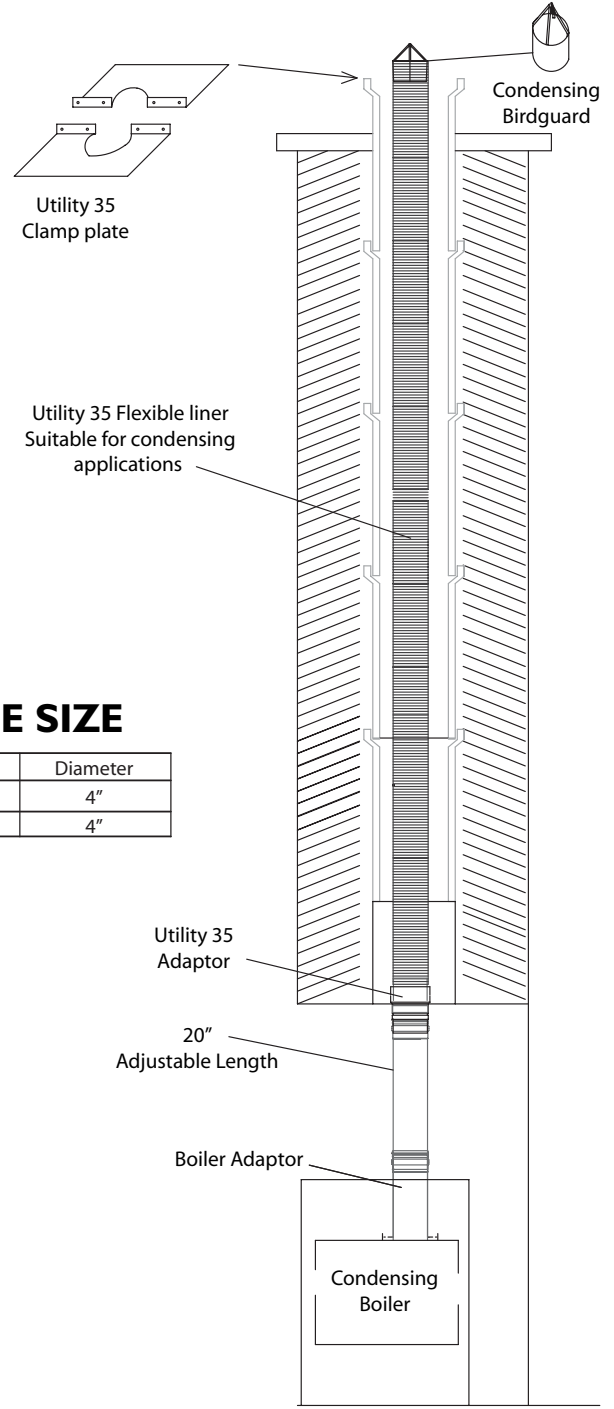
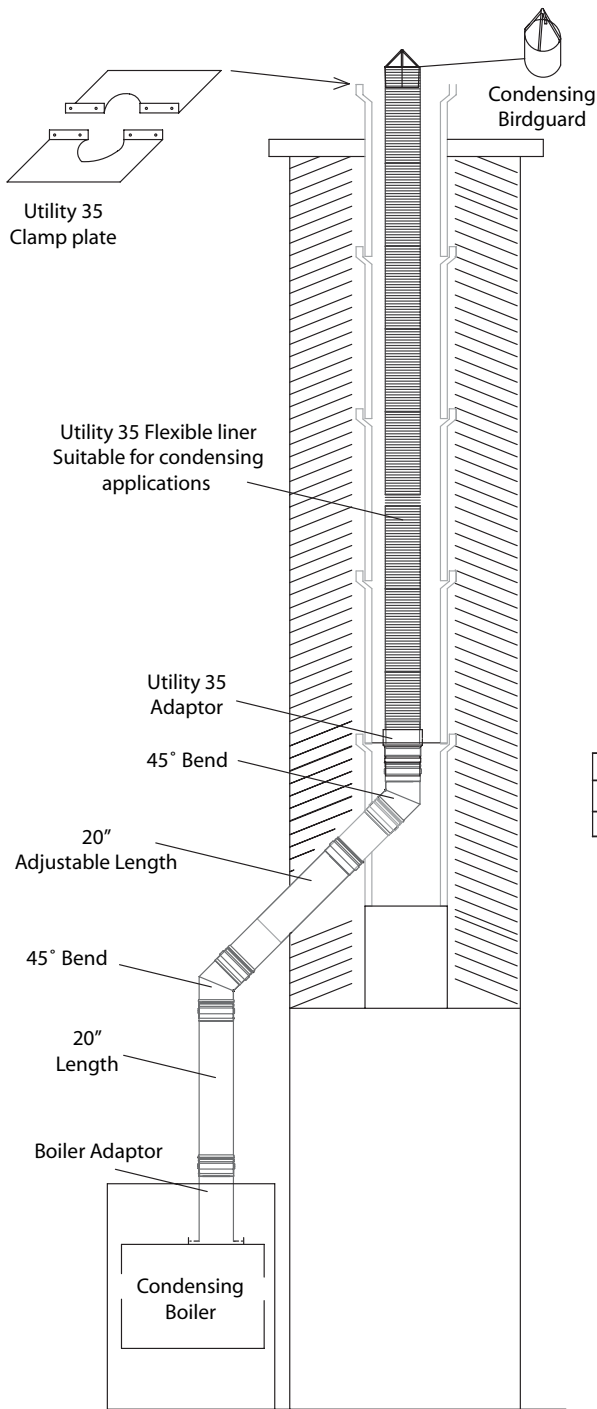
Horizontal Flue Kit



INSTALLATION INSTRUCTIONS SUPPLIED WITH ALL FLUE KITS

INSTALLATION INSTRUCTIONS SUPPLIED WITH ALL FLUE KITS

CONDENSING BOILER CHIMNEY INSTALLATION



FLUE SIZE

Boiler	Diameter
U/P90	4"
U/P120	4"

NOTE:

All brick chimney constructions must comply with current regulations.

Steps in Commissioning a Burner in a Firebird Boiler.

1. Check Nozzle to required output.
2. Is the correct Burner Head fitted to the burner for the required output?
3. Set air damper from the guide above for the desired output.
4. Check the pump pressure.
5. Set Boiler thermostat to minimum and allow boiler to heat up before carrying out a Flue gas analysis.
6. Check Flue gasses with a smoke gun before taking using Flue gas analyser.
7. Proceed with Flue gas analysis, adjust air damper to get desired CO₂%.
8. Print a record of analysis result.

Riello RDB 2.2R Range Burner Settings.

Variations in nozzle throughput, flue type & draught, oil viscosity etc. may give results differing from these laboratory performance figures. These settings were carried out using a conventional flue.

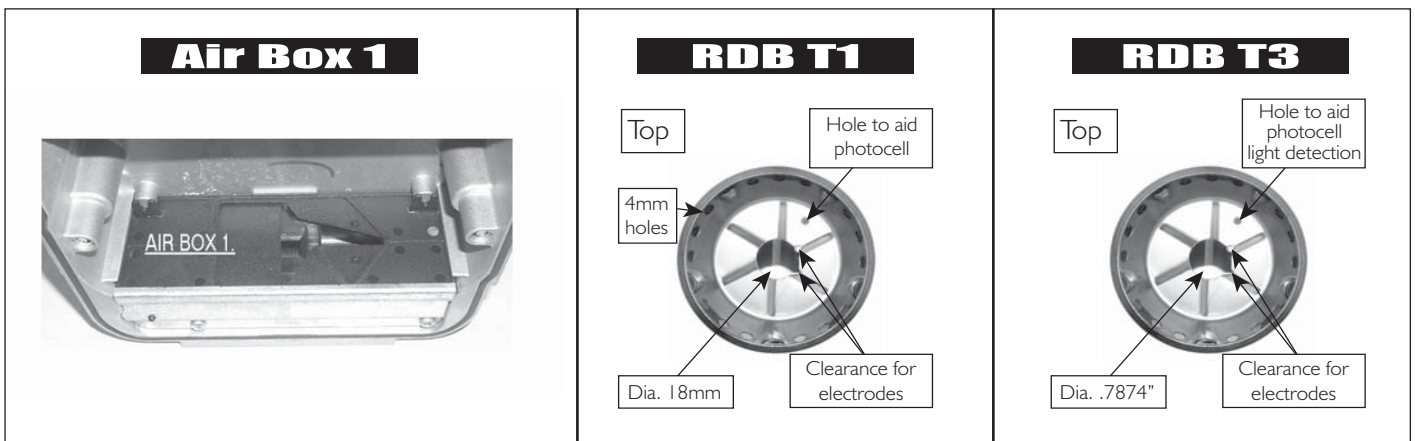
These burner settings for Firebird condensing boilers take precedent over any settings found in literature supplied with the burner

The burner nozzle, pump pressure and air setting may have to be changed from the factory setting to suite site conditions.

Boiler Model	Burner Model		Output BTU	Blast Tube	Size	Nozzle Angle	Type	Pump Pressure	Air Shutter	Air Box	Avg. Fg. °F	CO ₂	Smoke No
U/P70	RDB 2.2R	T1	70,000	T1	.50	80°	H	180 psi	3.70	1	160	11-12%	0-1
U/P90		T3	90,000	T3	.60	60°	W	175 psi	5.75	1	160	11-12%	0-1
U/P120		T3	105,000	T3	.65	60°	W	175 psi	2.75	1	160	11-12%	0-1
			120,000	T3	.75	60°	W	175 psi	4.25	1	160	11-12%	0-1

THE SHADED IN LINE REPRESENT FACTORY SETTING.

The above settings were carried out on a Firebird Condensing Boiler with 80" of vertical balanced flue. The ambient air was averaging around 70°F. Allowances should also be allowed for the viscosity of the oil and the tolerance of the nozzles. These settings are a guide and should only be used as such. A flue gas analyser must be used when fine tuning a burner to a boiler. When using this chart on a burner fitted to a standard efficient boiler air setting may vary.



- * **Before proceeding to filling, ensure that electricity supply is switched off to the boiler.**

Filling and Testing

Check that all connections, especially compression joints, are fully tightened. Re-check and ensure that pressure vessel air charge is correct, then fill system with water via filling system. **Turn off water supply before system pressure reaches safety valve operation point of 30psi.** Vent system via all manual air vents **including circulating pumps**, boiler, radiators, system high points. etc. Check that dust caps are loosened on auto air vents, keep constant check on system pressure gauge. If pressure has dropped re-admit water to above pressure. Ensure all appropriate boiler and system valves are open.

With water fill supply turned off, **thoroughly** flush out boiler and system to remove **all** foreign matter before allowing boiler and pumps to operate. If in doubt drain system and repeat above procedure. At this stage flushing-out water should be clean and clear of all foreign matter.

Refill the system and again vent at all points as described above. Examine the complete system for water leaks having pressurised it to 25psi. Correct any leaks, then check operation of pressure relief valve by admitting further water until the valve blows-off. This should occur when system pressure rises to 32 to 35 psi. When satisfied with valve operation, and with mains water still turned off, draw off sufficient water until initial system design fill pressure (P_f). (cold fill) is established (8 to 10 psi - as calculated for system).

Remember that initial cold fill pressure can only be checked when system water has properly cooled down. Check that **final operating pressure** (P_f) is under 25 psi with all radiators turned on and up to highest working temperature. Should system operating pressure exceed this, check:

1. That initial cold fill pressure is correct and if additional expansion vessel is fitted, that pressure is equal in each vessel.
2. That expansion vessels are sized correctly.

NOTE: Special attention should be given to existing heating systems where Firebird boiler has replaced an existing unit. Extra effort should be made to ensure that all original pipe work and radiators are repeatedly flushed. If possible use a proprietary cleansing agent suitable for system as loosened scale and foreign matter can seriously reduce boiler performance and pump efficiency.

Use corrosion inhibitor of suitable type.

It is recommended that commissioning is carried out by a competent and qualified heating technician.

It should be noted that it is the responsibility of the installer to ensure that the boiler is properly commissioned. Failure to do so may invalidate the boiler guarantee and any extended warranty.

PROCEDURES

1. OIL TANK

The installation of the oil tank and supply line should comply with all relevant local and national standards.

If a single supply line is used ensure that the bottom of the tank is above the burner. A suction line system via a de-aerator tiger loop should be used where the level of the oil in the tank may fall below the level of the oil burner pump.

CHECK AND ENSURE CORRECT GRADE FUEL OIL HAS BEEN SUPPLIED.

2. THE BURNER

A two single pipe system may also be used where the tank is below the boiler installations. Please flush out oil pipe by drawing off some oil before connecting fuel pipe to burner - otherwise there is a danger of grit and dirt being forced into the burner pump, resulting in pump blockage, damage and 'lock-out'

3. THE BOILER

- A. Switch off the power supply, ensure that the boiler and system is full of water, all valves are open and that installation conforms with all Standards, Regulations and Instructions.
- B. **Depending on condensate disposal system check that the condensate trap is primed or pump is operational.**
- C. **Check that boiler baffles are correctly positioned.**
- D. Check the oil supply by disconnecting the oil supply hose at the burner and running off a quantity to ensure it is free from air. Then bleed air from burner pump. **See Burner Manual.**

- E. Check that both room thermostats and boiler aquastats are calling for heat.
- F. Reconnect electrical supply and the boiler should start after the oil heater has reached temperature. If the burner lock-out activates, this suggests air in the pump. Wait a minute or so and try again. If lock-out occurs again, air must be bled from the pump pressure gauge connection point once more.
- G. View the burner flame through the sight glass - it should be bright cream/yellow without any sign of smoke. Use a smoke gun to check that the burner is burning clean.
- H. Run the boiler for about fifteen minutes then take a CO2 reading and adjust as necessary.

HANDING OVER

A thorough check of the system should be made, then the householder should receive a clear and concise demonstration of the boiler operation and any system controls.

This manual and burner manufacturers manual plus any other instructions should be handed over to the user, the guarantee card should be completed and posted, and the user advised about the importance of annual servicing.



COMMISSIONING RECORD
Should be completed and a copy kept in technicians file.

NOTES

NOTE: SERVICING MUST BE CARRIED OUT BY A COMPETENTLY QUALIFIED ENGINEER ANNUALLY.

A) Before carrying out a service it is recommended that the following is checked:

- 1). Smoke
- 2). CO₂
- 3). The flue gas temperature
- 4). Oil pressure
- 5). Ensure flue is unrestricted & operating properly

At the same time check for oil and combustion leaks. Advance to service **ONLY** after ensuring that both electric and oil supply to boiler is safely isolated

B) THE OIL TANK

Draw off any accumulated water and sludge from the tank by opening the drain cock. Turn off the oil supply and remove the filter bowl, then wash the element clean with No. 2 Fuel Oil.

C) THE BOILER

Remove combustion access door for access to baffles and to clean heat exchanger.

Check insulation sealing and its silver foil lining in combustion access door - replacing when necessary. Check graphite seal and replace if necessary. When refitting this door be careful not to damage the foil and insulation by over tightening.

Check condensate trap is clean and free of combustion debris and make sure that the condensate drain is free and not blocked.

Expansion Vessel pre-charge pressure should be checked annually.

D) THE BURNER

Replace oil-nozzle.

 **Ensure correct specification replacement nozzle is used.**

Replace oil filters.

Remove burner and clean blast tube and ensure that airways are clear.


Ensure electrodes are clean, dry, not broken and are set as per burner specifications.

Clean fan and photocell.

Once again check flexible oil lines and connections for damage or leaks, replace as necessary. Replace flexible oil lines every 2 years.

Combustion Check

Carry out combustion analysis and ensure that boiler is performing to specification outlined in manual. Flue conditions may cause deviation from these figures. Firebird recommend that the flue gas analyser is set to light oils and that a smoke test is always carried out before using the analyser

 **Always keep careful record of flue gas analysis results including any verbal and written advice to customer (householder). Always check carefully for restricted or blocked flue. If possible record CO levels and advise customer of need to keep boiler room well ventilated. Always make sure that ventilation is kept clear.**

SERVICING RECORD - PAGE 30

Service Checklist

NB All Information recorded hereunder should also be included in Engineers own filed service reports. It is recommended that the boiler be serviced, **at least once a year**, and the details recorded below.

	1 ST SERVICE	2 ND SERVICE	3 RD SERVICE	4 TH SERVICE
Burner Model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Angle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pump Pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Setting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smoke Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CO ₂ %	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flue Gas Temperature °F	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Valve Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condense Trap				
Is condense trap piped to drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is condense trap primed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Float and condense trap in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHECK				
Flue seals OK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexible Oil Line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baffle Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deflector plate and baffles in position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphite door seal and door gasket fitted and in good order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHECK				
All Connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boiler Thermostat Operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date:
Service Engineer:
Tel. No:
Signature:
Comments:

Service Checklist

NB All Information recorded hereunder should also be included in Engineers own filed service reports. It is recommended that the boiler be serviced, **at least once a year**, and the details recorded below.

	5 TH SERVICE	6 TH SERVICE	7 TH SERVICE	8 TH SERVICE
Burner Model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nozzle Angle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pump Pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Setting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smoke Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CO ₂ %	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flue Gas Temperature °F	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire Valve Location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condense Trap				
Is condense trap piped to drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is condense trap primed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Float and condense trap in place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHECK				
Flue seals OK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexible Oil Line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baffle Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deflector plate and baffles in position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Graphite door seal and door gasket fitted and in good order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHECK				
All Connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boiler Thermostat Operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date:
Service Engineer:
Tel. No:
Signature:
Comments:

Warranty for Firebird Residential Boilers

FIRST YEAR-WARRANTY

QHT warrants that the boiler is free from defects in material and workmanship for one year from the date of installation. If a part or the boiler is found to be defective within this period, QHT will replace that part or the boiler, whichever is deemed necessary.

BOILER SHELL WARRANTY

QHT warrants that the boiler shell will be free from defective parts or workmanship for a period of 10 years from the date of installation.

These warranties are subject to following conditions:

1. That the boiler is installed and commissioned by a licensed technician in accordance with Firebird's installation manual and all relevant standards and codes of practice.
2. That the boiler is service annually in accordance with Firebird's procedures
3. That the appliance was used only for normal residential central heating purposes.
4. Any part which is replaced under warranty carries only the unexpired portion of the original warranty
5. This warranty does not apply to boilers, which are subject to incorrect installation, fair wear and tear, misuse, abuse, neglect, alteration, accident, excessive temperature, excessive pressure, or corrosive water or atmosphere.

Firebird and QHT will NOT be held responsible for:

- a) Components that are part of the heating system, but were not manufactured by Firebird or QHT as part of the boiler.
- b) The workmanship of the installers of Firebird condensing boilers. Furthermore, this warranty does not assume any liability for unsatisfactory performance caused by improper installation.
- c) Liability in respect of any alteration or repair by unqualified persons.
- d) Any costs for labor to remove or replace the faulty component.
- e) Improper burner application or adjustments, control settings, care or maintenance.

- f) Any damage associated with corrosion or leakage due to the use of "non-barrier", plastic pipe in the heating system.
- g) Liability in respect of any defect occurring in the heat exchanger due to limescale build-up and or low return water temperature.

OWNER RESPONSIBILITIES:

- Provide for proper installation, which includes pressure relief and pressure reducing valves and high limit safety controls on closed systems.
- Provide qualified periodic service to prolong proper operation and service.
- Insure that the boiler installation conforms to all codes and ordinances.
- Owner will be responsible for return of faulty components to QHT Portsmouth, NH, freight pre-paid.

This warranty does not extend to anyone except the first purchaser at retail and only when the boiler is in the original installation site. Implied warranties of fitness for a particular purpose and merchantability shall be limited to the duration of the expressed warranty. Firebird and QHT expressly disclaim and exclude any liability for consequential or incidental damages for breach of any expressed or implied warranty.

This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

For prompt warranty service, notify the installer, who, in turn, will notify the distributor from whom he purchased the boiler. If this does not result in corrective action, contact Quincy Hydronic Technologies (Address Below) with details in support of the warranty claim. All claims must be processed through proper trade channels.

Quincy Hydronic Technology, Inc.
3560 Lafayette Road
Building 2, Unit A
Portsmouth, NH, 03801
Tel. 800-501-7697

FIREBIRD BOILER WARRANTY REGISTRATION
IMPORTANT., Registration required. To gain complete warranty protection, fill in and mail this card immediately.

NAME _____

STREET _____

CITY _____ STATE _____ ZIP _____

BOILER SERIAL NO. _____ DATE OF INSTALL _____

NAME OF INSTALL CO. _____

STREET _____

CITY _____ STATE _____ ZIP _____

BOILER OUTPUT IN BTU/H _____

SERIAL # _____

HOW DID YOU HEAR ABOUT FIREBIRD?

DEALER/INSTALLER WEBSITE FRIEND/NEIGHBOR

OTHER

TEAR ON THIS LINE

**PLACE
STAMP
HERE**

QHT Inc.
3560 Lafayette Road
Building 2, Unit A
Portsmouth, NH 03801

