

Half a Lifetime of Warmth and Economy

A Part History of the Franco Belge Grillon

Wood and Coal Burning Kitchen Boilers

03-01-08

Wood and Coal Burning Boilers.



As far as we know the Grillon Boiler range first saw light of day some 35 years ago.

They were manufactured in France by Fonderie Franco Belge and were imported into the UK by UA Engineering.

The French designers produced a range of cookers and boilers which took the UK by storm.

UA Engineering marketed the products through the UK network of independent wood stove shops and trawled them round most of the county agricultural shows to great effect.

Fig 1 Boiler Specs. Note when used with coal the quoted outputs went up by approx 25%.

I - Technical details	92.13		92.19		92.25	
Total heat output BTU/hr* (with dry seasoned wood)	39,000		57,000		77,000	
Average heat radiated BTU/hr	3,000		3,900		4,300	
Dimensions of Boiler	ins.	mm	ins.	mm	ins.	mm
Width	13	330	17	450	19,5	500
Depth	25	630	29,5	750	32	810
Height	31,5	800	31,5	800	31,5	800
Firebox Size						
Width	10	260	14	360	16,5	426
Depth	10	250	12,5	320	14	350
Height	17	430	17	430	17	430
Flue outlet O/D**	5,5	139	6	153	6	153
Distance from Floor to Centre of Rear Chimney Outlet	27	686	27	686	27	686
Capacity of Water Jacket	4,5 gals/20 l		5,5 gals/25 l		6,5 gals/30 l	
Weight Packed	320 lbs 145 kgs		410 lbs 186 kgs		500 lbs 227 kgs	

*When burning solid-fuel, higher outputs near 25% extra of the stated figures can be expected.
 **A draught control box is supplied as standard to fit to the flue outlet collar. The I/D of the top section of the control box is 210 mm (see section 4 - 31).


The timing of the huge sales effort was fortuitous to put it mildly, oil prices were on the up and the post war baby boomers, (most of who'm are now retiring or retired) were buying up cheap country or village houses and then trying to keep them warm.

This was the height of the brown bread and sandals revolution, the 1960's free lovers had

decided to settle down and UA Engineering found themselves caught up in a situation where demand outstripped supply by a considerable factor.

As fast as the lorries could bring the appliances in, UA Engineering could sell them, in many cases customers were queuing up at the Canal Street warehouses to collect cookers and boilers.

Fig 2 1979 price list. (Note VAT was 8%)



PRICE LIST AUGUST 1979

	£		£
70 Series Central Heating Cookers		44 Series Mixed Fuel Cookers	
703 38,000 Btu/hr Output	570.00	44.147 20,000 Btu/hr Total Output	330.00
705 55,000 Btu/hr Output	730.00	44.148 25,000 Btu/hr Total Output	348.00
707 75,000 Btu/hr Output	855.00		
90 Series Central Heating Boilers		64 Series Hot Water Heating Cooker	
9005 38,000 Btu/hr Output	430.00	64.148 25,000 Btu/hr Total Output	375.00
9009 57,000 Btu/hr Output	510.00		
9013 77,000 Btu/hr Output	595.00		
La Forestiere Central Heating Boilers		Room Heating Stoves	
93.27 108,000 Btu/hr Output	780.00	12.80 Ebene Mixed Fuel 22,000 Btu/hr	208.00
93.40 160,000 Btu/hr Output	895.00	13.70 Brule Bois Wood Fired 22,000 Btu/hr	134.00

Accessories for 70 and 90 Series :-

SUMMER GRATES	(90.05) (703)	(90.09) (705)	(90.13) (707)
	£	£	£
For wood	11.55	15.25	18.00
For coal	10.40	14.40	15.50
SUMMER HEARTH (Cookers only)	45.50	53.00	62.50
INSULATED COVERS & FRONT RAIL	(703) 85.00	(705) 92.00	(707) 96.00
FLUE DRAUGHT CONTROL BOX Suitable for 70 and 90 cookers & boilers			28.50
LOADING HOPPER			14.50
ZEBRACIER PER TUBE (suitable for all cast top plates)			0.80

These prices are ex-works Sheffield and do not include VAT or delivery charges

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U.A. ENGINEERING LTD.
Canal Street Sheffield S4 7ZE
Tel [0742] 21167 or 738803
Telex No. 547768

It was all quite remarkable; the sales figures achieved were phenomenal, not only around Sheffield but all over the country.

As can be seen in Fig 1, three versions of cookers and kitchen boilers were available; small, medium and large.

The old Coal Board as it was and the S.F.A.S. wouldn't have anything to do with them, in fact they actively tried to slate the product but it just didn't work, customers voted with their wallets and kept on buying and buying.

Many coal miners formed a major part of the buying public as unlike the rest of us they received a free allowance of one ton of coal per month and much to the annoyance of the old Coal Board, the only boiler which could burn coal successfully was the Grillon.

Although the demand for wood and coal burning appliances was huge, UK manufacturers had nothing with which to compete.

Rayburn brought out the MF, which was a modified Royal and then eventually introduced the Supreme, which metamorphosed into the Nouvelle (Note the French connection there) and finished up as the 355S and now because we have a new and more sinister problem (Global Warming), appears as a new reincarnation the 345W. (W = Wood Burning)

The designers of the Franco Grillon boilers and boiler cookers had really thought the product through, they designed it as a full blown multi fuel appliance with a series of features which proved to out perform any competitor by miles,

One of the reasons for the phenomenal sales success achieved by UA Engineering was quite simply that the boilers just worked so well, most customers weren't interested in the technicals of why they did, they just loaded up the firebox and sat back in sublime warmth with cooking thrown in, if required.

The cast iron cooking hot plate was large enough to house a kettle and several pans as well as radiant enough heat to warm the whole kitchen.

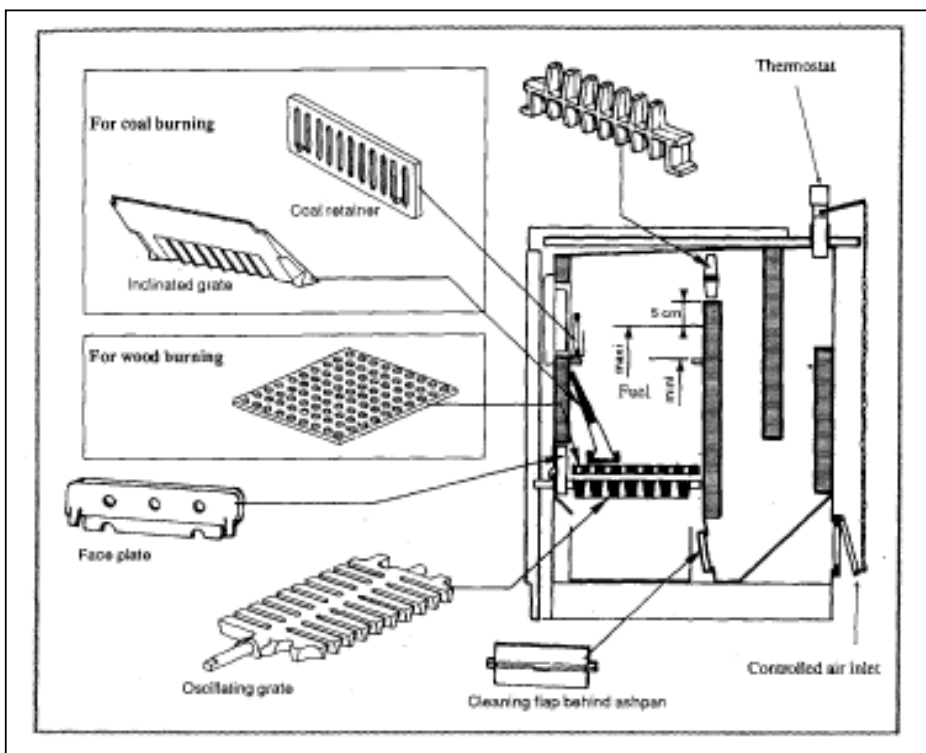
Well for those who are interested in why, here it is:-

1. Triple Pass Boiler.

The triple pass boiler was extremely efficient, fuel was loaded into the fire box and this is where the first two elements kick in, as the fuel dropped on to the grates, the inclined grate stopped it from blocking all of the grate area, this left a free area of grate where air could bypass the fuel on the grate and mix with unburnts over the top of the fire bed.

Air is admitted at the rear of the appliance via an automatic water temperature control thermostat resulting in under grate air, simultaneously coming up through the fire bed and up through the inclined grate, in the authors opinion this was in fact primary and secondary air supply. Details can be seen in Fig 3 and 4

Fig 3 Cross-Section and Accessories of a later version front-loading boiler.



As the fire developed a third air was pre heated via a conduit in the front of the boiler and autonomously allowed to stream into the top of the combustion chamber before departing into the second down firing vertical pass of the boiler.

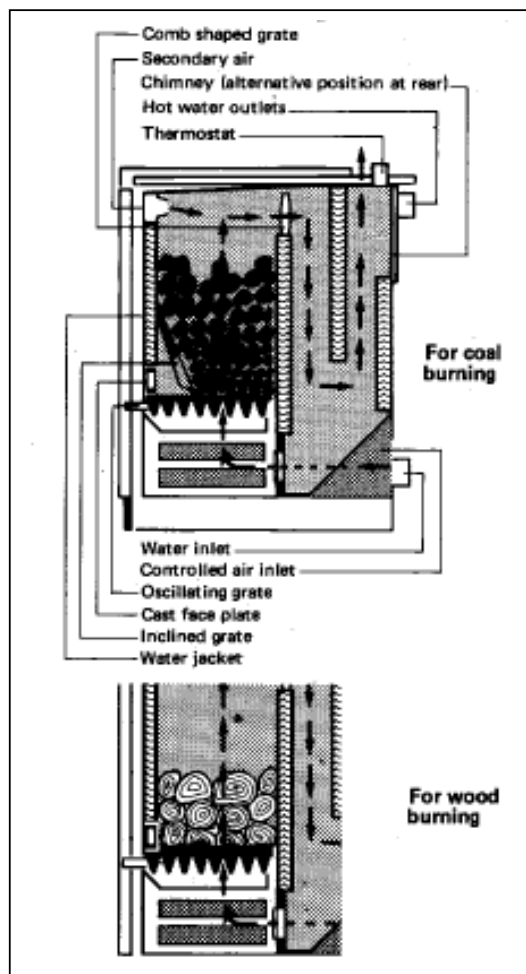
This can be seen in Fig 4 but it is not stated as tertiary air.

This tertiary aeration was just the ticket for coal burning as the high calorific content of coal allowed for a secondary burn to occur in the second and sometimes

third pass of the boiler before leaving the appliance on its way up the chimney.

The cookers also had a cooking lever which instead of allowing the flue gasses to go through the second and third passes of the boiler diverted them over the top of the oven and down around the left hand oven side under the oven and then up the back of the oven to again be discharged into the flue.

Fig 4 Upper detail set up for coal and lower for wood.



2. Superb Riddling Grate, single on smaller boiler and double on larger boilers.

Coal burns in two phases, phase one is long flame combustion and phase two is short flame or incandescent combustion as in a coke fire.

As the coal turns into coke it fuses together and this is where the riddling system comes into play

The Grillon grate rocks in the vertical plane around a centre spindle and semi rotates up to dead stops, this action smashes the fused coke into pieces and allows the ash to fall free.

Other grate systems just reciprocate in the horizontal plane, which is fine for wood but totally useless on coal.

The horizontal reciprocating action just grinds away at the base of the fused coke causing not much to happen other than the grate to wear out rather rapidly.

When used correctly the Franco grates can last up to ten years.

4. Inclined Grate.

The inclined grate is added for coal burning and served two purposes, the first was to keep the intense heat of the

coal fire away from the front face of the boiler and the second was to prevent the coal from blocking all of the grate area, leaving a free area of grate where air could bypass the fuel on the grate and mix with unburnts over the top of the fire bed. See Fig 4

5. Wood Grate.

With the inclined grate removed, the firebox capacity could be increased to allow a greater volume of fuel to be loaded. The wood fuel could be allowed to touch the front face of the boiler and the wood grate was fitted directly on to the riddling grate to create a good wood ash base to the fire.

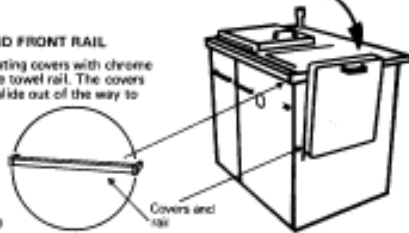
6. Summer Wood or Coal Grate

In summertime the summer wood or coal grate is added, this allowed a smaller fire to be used for cooking and hot water production.

Fig 5 Accessories 1978


UA ENGINEERING LIMITED
7th AUGUST 1978
Franco Belge Accessory Price List

INSULATED COVERS AND FRONT RAIL
Two white enamelled insulating covers with chrome plated hinges and protective towel rail. The covers hinge to left and right and slide out of the way to either side of the cooker.



PRICE:-
1703 £78.00 1706 £84.50 1707 £88.00

FLUE DRAUGHT CONTROL BOX
Cast iron draught control box to fit between the cooker top and vertical Selkirk Metalbestos flues. The box has an adjustable flap and separate air inlet control to reduce draught and can be split to allow access for chimney cleaning.



PRICE:- (for all models) £24.50

SUMMER GRATES

	19005	19009	19013
	1703	1706	1707
For Wood	£10.60	£14.00	£16.50
For Coal	£ 9.25	£13.20	£14.30

SUMMER HEARTHES

	£42.00	£48.80	£57.50
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LOADING HOPPER FOR COAL OR COKE
This hopper fits on the top of the cooker or boiler when the loose plate is hinged up for loading while you reach for the coal scuttle.

PRICE:- (for all models) £18.75

ZEBRACIER
Zinc based paste which can be rubbed onto the hot plates to protect them and produces an attractive metallic finish.

PRICE:- £5.75 per tube

Your Local Distributor:-

These prices are ex-works Sheffield and do not include VAT (currently at 8%) or delivery charges.

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As cooker and boiler sales increased UA learned quite a lot in a short space of time and modifications were made to further improve the product.

One of these was the flue draught control box as can be seen in Fig 5.

This device was designed to allow a much greater degree of control over the appliance on overnight burning and it did this by the use of a built in damper flap plus an air inlet control valve.

By careful use of these controls the appliance could be made to stay in overnight thus improving the performance and user convenience even more.

Like all good designs this product has not had the need for major changes, over the thirty plus years that it has been in existence, it has evolved slowly with only minor changes being carried out.

All the grate components used on the current models would be directly interchangeable with the original

versions.

The current version has a front-loading door, which is a great improvement over the top loading earlier versions.

Whilst writing this a customer came into our factory today 03-01-08 and ordered a new Grillon boiler to replace his old cooker which he bought in 1978, he brought with him his original literature which has been scanned and used in this document.

Had he bought an oil boiler in 1978 it would have cost him the following-;

30 years of oil at approx	£700 per annum	£21,000
30 service visits at approx	£70 per visit	£2,100
2 New oil boilers at approx	£700 each	£1,400

Sundry Spare parts approx	£1,000	£1,000
2 New oil tanks approx	£1,000	£1,000
Multiple power cuts with no heating.		
Approx Total		£27,500

His old cooker cost him approx	£730 plus 8% VAT	
Grates and sundry spares approx	£300	
Wood fuel	£?	
Occasional solid fuel approx	£5,000	
Approx Total		£9,000

These boilers have stood the test of time, in many cases they have kept families and individuals warm for almost half a lifetime, a quite remarkable achievement and they are just as relevant now as they were 30 years ago!