

# Handbook

## Series FOL & EOL High Efficiency Domestic Oil Burners Models FOL/EOL 18, 25 and 33

### BURNER CAPACITY

#### FOL/EOL 18

14.7kW to 18.3 kW  
50,000 Btu/h to 62,500 Btu/h

#### FOL/EOL 25

18.3kW to 25.6kW  
62,500 Btu/h to 87,500 Btu/h

#### FOL/EOL 33

24.9kW to 33.0kW  
85,000 Btu/h to 112,500 Btu/h

### THE DOMESTIC RANGE

The new domestic oil burner, detailed in this handbook, is the result of a trilateral design approach. This led to an intensive development programme, principally aimed at a range rated oil burner. The new burner combines high performance and reliability with an exceptional low noise levels in a compact aesthetic form.

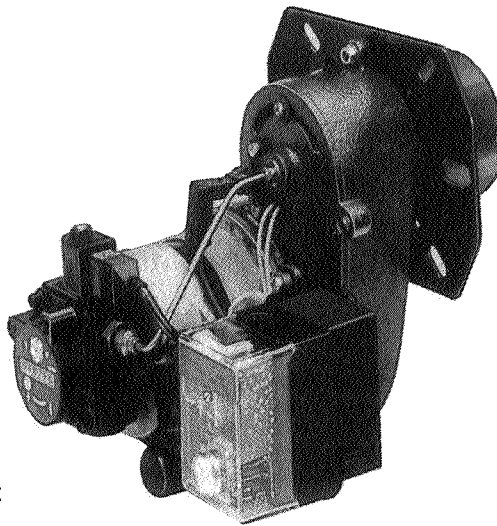
This oil burner is intended for use primarily on domestic oil fired hot water boilers but is also suitable for oil fired cooking stoves and domestic warm air unit applications.

### DESIGN AND CONSTRUCTION

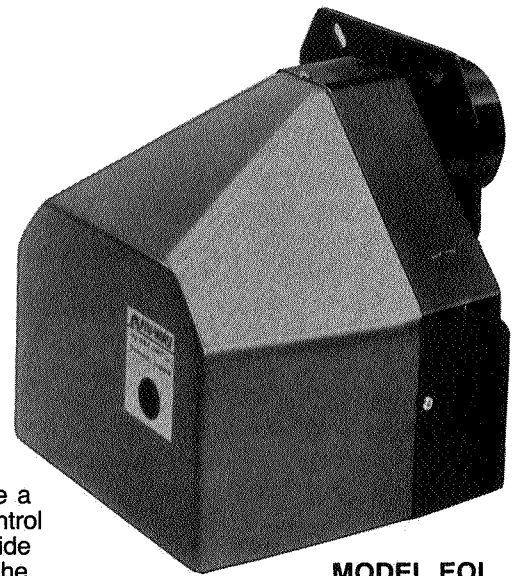
The burner comprises of a light weight cast fan housing with a high efficiency low noise fan unit offset below the burner head. The fan is directly driven by a 75 watt double-ended electrical motor also driving a high pressure oil pump. The burner is available with or without a front plate and cover unit.

The complete burner assembly can be detached from the fixing flange by a single allen screw providing easy removal and access for servicing.

When the burner is supplied with a cover, apertures are provided for cable and flexible oil pipe entries. With the burner cover fitted, access to the burner adjustments is attained by loosening the three cover retaining screws, which allow the cover to be quickly removed revealing the working parts of the burner and giving ready access to oil and air adjustments.



MODEL FOL



MODEL EOL

### AIR CONTROL

A novel approach is used to give a very accurate combustion air control for the burner on the pressure side of the fan unit. The air inlet for the fan is designed to give high static pressure combined with low but smooth air inrush characteristics, which contribute immensely to the easy start up and smooth operation of the burner.

### BURNER MANAGEMENT CONTROL

Fully automatic operation is controlled by a sequence controller and miniature photocell. The burner on/off operation should be controlled by thermostats, with overall control via a time clock giving single stage flame operation of the burner.

### FUEL

Kerosene Class C2 (1.1-2.0cSt @ 40°C) or Light Diesel Oil Class D (1.5-5.5cSt @ 40°C)

### FUEL SYSTEM

The oil pump is fitted with a solenoid cut-off valve, suitable for a single pipe gravity feed or two pipe (supply & return) suction lift system. The burner is supplied with a flexible oil pipe having 1/4" BSP connections.

It is recommended that a bowl type oil filter with a replaceable paper element is fitted in the oil supply line to the burner.

**APPROX. WEIGHT:** 7.5Kg

### EXTRAS

- Bowl type in-line oil filter
- Fully closing air damper
- Ducted air inlet connection.

## BURNER DATA

### Kerosene 10.18 kW/Litre (131,600 Btu/USgal)

Burner Model	Minimum Burner Throughput		Minimum Burner Capacity †			Maximum Burner Throughput		Maximum Burner Capacity †			Nozzle Size USgal/h at 100psi	Standard Nozzle Spray Angle
	Litres/h	USgal/h	kW	kcal/h x 10 <sup>3</sup>	Btu/h x 10 <sup>3</sup>	Litres/h	USgal/h	kW	kcal/h x 10 <sup>3</sup>	Btu/h x 10 <sup>3</sup>		
FOL/EOL 18	1.44	0.38	14.7	12.5	50	1.80	0.48	18.3	15.6	62.5	0.4	80°H
FOL/EOL 25	1.80	0.48	18.3	15.6	62.5	2.51	0.67	25.6	21.9	87.5	0.6	80°H
FOL/EOL 33	2.45	0.65	24.9	21.3	85	3.24	0.86	33	28.2	112.5	0.65	80°H

† To obtain appliance output, multiply burner capacity by efficiency;  
 e.g. max. appliance output for Boxer A @ 80% efficiency =  $18.3 \text{ kW} \times \frac{80}{100} = 14.64 \text{ kW}$

### Gas Oil 10.57 kW/Litre (136,600 Btu/USgal)

Burner Model	Minimum Burner Throughput		Minimum Burner Capacity			Maximum Burner Throughput		Maximum Burner Capacity			Nozzle Size USgal/h at 100psi	Standard Nozzle Spray Angle
	Litres/h	USgal/h	kW	kcal/h x 10 <sup>3</sup>	Btu/h x 10 <sup>3</sup>	Litres/h	USgal/h	kW	kcal/h x 10 <sup>3</sup>	Btu/h x 10 <sup>3</sup>		
FOL/EOL 18	1.39	0.37	14.7	12.5	50	1.73	0.46	18.3	15.6	62.5	0.4	80°H
FOL/EOL 25	1.73	0.46	18.3	15.6	62.5	2.42	0.64	25.6	21.9	87.5	0.6	80°H
FOL/EOL 33	2.36	0.62	24.9	21.3	85	3.12	0.83	33	28.2	112.5	0.65	80°H

NOZZLES AS ABOVE UNLESS OTHERWISE SPECIFIED

## INSTALLATION

**Flue.** Siting of the chimney where installed, should be in accordance with appliance manufacturer's recommendations. Chimney cowls are not recommended.

Ensure that the flue pipe from the the appliance finishes flush with the inside wall of the chimney.

The pressure conditions in the combustion chamber will vary according to the type of appliance, normally +4.0 to -1.3 mm Wg (+0.16 to -0.05 in. Wg). Should resistance be greater than 4.0 mm Wg a blockage in the boiler or chimney may be the cause. Where extremely high draught conditions are experienced, consideration should be given to installing a draught stabiliser which should comply to appliance manufacturer's recommendations.

**Fuel Storage and Handling.** The provisions of BS.2869 will normally ensure that the fuel will be of adequate quality. Class D gas oil is supplied in winter and summer grades, and precautions should be taken to prevent waxing under sustained cold and exposed conditions.

Care should be taken to store and supply Class D gas oil to the burner in line with supplier's recommendations.

**Fuel Supply.** Fuel supply pipework (and, where fitted, the return pipe line) should NEVER consist of galvanised steel. The final connection to the pump inlet port being made with the flexible pipe supplied with the burner. Joints should be made with screw joint or compression fittings, not by soldering.

Wherever possible, it is recommended that a gravity feed is used, the maximum head should not exceed 4m. On installations where the fuel tank is situated below the level of the burner a two pipe (supply and return fuel supply system MUST be used. Information on the maximum suction permitted is available from Nu-Way on request.

The fuel pump is factory set for single pipe instation.

## IMPORTANT

When using a two pipe system it is essential for the return line to go direct to tank without obstructions, and a non-return valve should be fitted on the end of the suction line inside the tank.

**Single Pipe System.** On a single pipe (gravity feed) system, the pump should be primed under gravity from the tank, and not by running the pump mechanically. To prime the pump remove the purge plug, connect the purge port to a suitable container.

**Two Pipe System.** The suction line/pump will require priming before energising the pump mechanically. It is essential to ensure that the return pipe is not obstructed in any way, e.g. by a plug, closed valve etc. Any obstructions will damage the pump.

The fuel supply line/pump may need bleeding/priming if the oil storage is allowed to drain completely.

**Electricity Supply.** Connect burner to electricity supply, thermostats, time switches etc., as appropriate.

**Air Setting.** The air strap is calibrated 0-10. To attain the correct CO<sub>2</sub> level slacken off the screw and rotate the air damper. Ensure the screw is tightened to secure the setting.



## MODELS

**FOL/EOL 18**  
**FOL/EOL 25**  
**FOL/EOL 33**

## BURNER SELECTION CHART

10	12.5	15	17.5	20	22.5	25	27.5	30	kcal/h x 10 <sup>3</sup>
11.7	14.7	17.5	20.5	23.5	26.4	29.3	32.3	35.2	kW
40	50	60	70	80	90	100	110	120	Btu/h x 10 <sup>3</sup>

FOL/EOL18

FOL/EOL 25

FOL/EOL 33

## ELECTRICAL DATA

Mains Supply (V) 230/250 + 10%  
 -15%

Frequency (Hz) 50

Burner (W) 75 (1/10hp)  
 2700 rpm

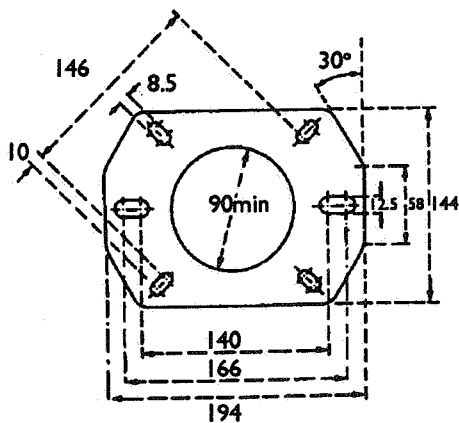
Start Current (A) 1.0 Capacitor  
 start

Run Current (A) 0.6

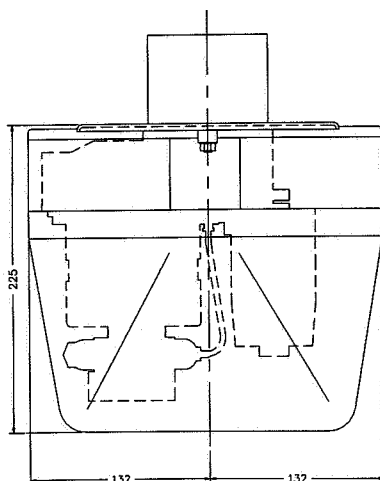
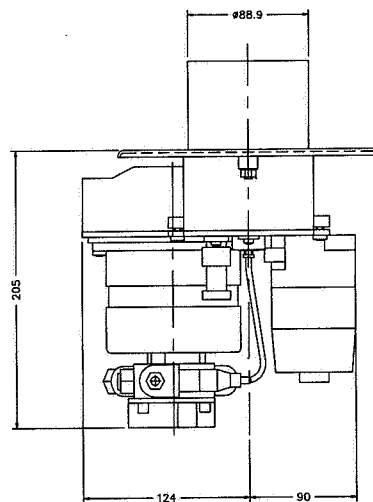
Ignition by direct HT spark (mA) 40

## DIMENSIONS

All Dimensions are in mm's

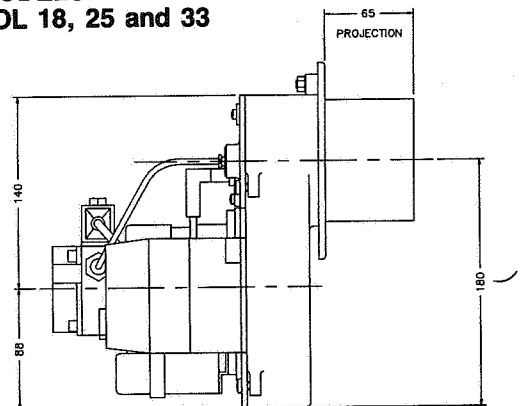


Appliance Frontplate Drilling  
 to C.E.N. Standards



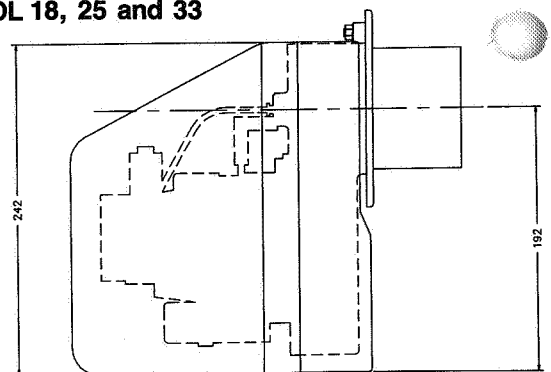
## MODELS

FOL 18, 25 and 33



## MODELS

EOL 18, 25 and 33



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 ISO 9001  
 EN 29001

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