

### FRT – Features

- Adjustable flame characteristics – giving good tube uniformity and long life
- Direct spark ignition, flame ionisation detection – UV option
- Low NOx emissions
- Variable length flame tube to suit wall thickness
- Wide range of fuel types accommodated
- Preheated air option up to 350°C

The FRT burner is specifically designed for firing radiant or immersion tubes. It features an integral adjuster to allow a variable amount of air to be pre-mixed with the gas for optimum flame stability.

The pre-mix facility is standard on all non preheated air burners but is kept at a relatively small level to ensure that the burner components run at comparatively low temperatures, particularly where thick furnace walls are encountered. In such cases the burner design ensures that the temperature of that part of the radiant tube in the furnace wall is minimised. The air for combustion is staged

within the burner flame tube, ensuring good temperature uniformity.

The standard burner has a flame tube length from the burner mounting flange to the flame tube outlet of 210mm for the FRT 3 and 4 and 240mm for the FRT 5. Longer flame tubes are available to special order.

The standard burners are direct spark ignited with flame rod detection. With the pre-heated air option, the pre-mix facility is not available.

### Capacities and Specifications

Model No.	Part No.	Capacity (kW)	Air Pressure* (mbar) @15°C	Gas Pressure (mbar)	Tube diameter	Weight (kg)
FRT 3B	2.27.900	87	37	8	100	13
FRT 4B	2.27.901	116	22	8	150	14.5
FRT 5B	2.27.902	232	25	8	200	17

\*Minimum pressure required at the burner – based upon negligible tube pressure.

The above data is based on natural gas. For operation on other fuels please refer to FNAC.

Maximum burner stoichiometric turn-down 5:1.

Maximum excess air 250% } at the nominal rating  
Maximum excess fuel 10% } of the burner

Maximum preheated air 350°C – consult FNAC for all preheated air applications.

## Specifications and Dimensions

### Operation on fuels other than natural gas

A wide range of fuels from LPG to low CV fuels can be accommodated. However notification must be made to FNAC at the order stage to ensure that the proper steps are taken to accommodate such fuels.

### Application Details

The FRT can be applied to a wide range of tube types: 'W' tubes, 'U' tubes and straight tubes. As a general guide the table below shows the recommended size of FRT burner for a given tube diameter.

Burner size	Tube diameter (mm)
FRT 3B	100
FRT 4B	150
FRT 5B	200

It is important to note that the burner heat release must be matched to the radiant tube heat dissipation rate to avoid exceeding the temperature limit of the radiant tube material. This calculation must be carried out for all applications – contact FNAC.

### Air Inlet

It is very important for the proper functioning of the burner that a straight air inlet pipe section of minimum length of approximately 3 x D is used. No obstruction such as valves or orifice plates or flexibles may be fitted in this section.

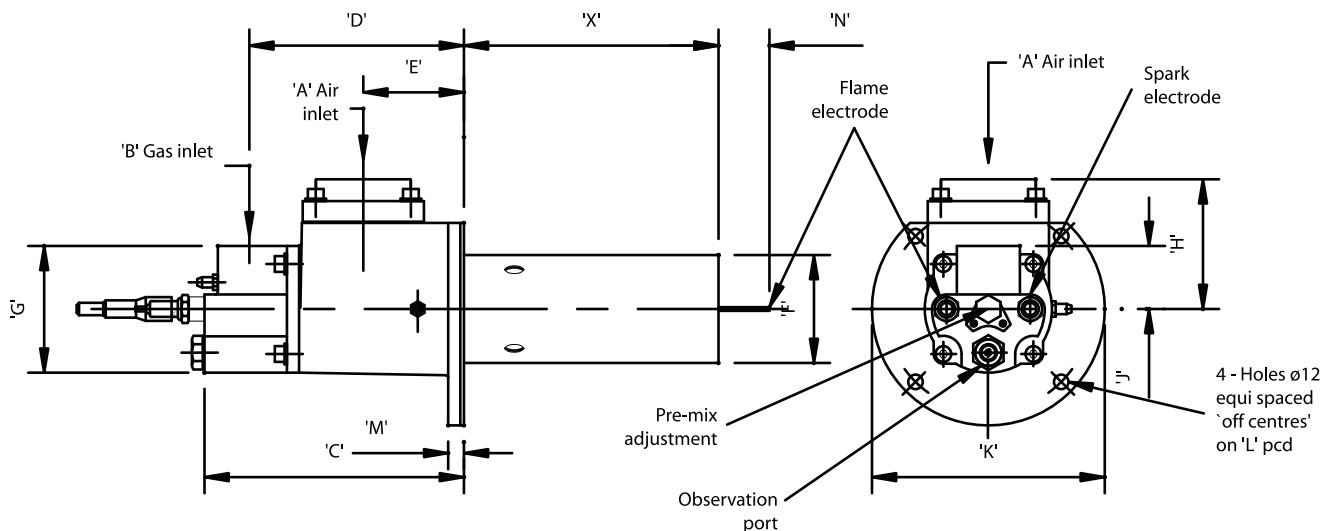
### Hot Air Option

For preheated air applications the model number includes the letter H, for example FRT 3H. This is a special option on this range of burners and the pre-mix facility is not available.

The combustion air pressure at the nominal capacity will be increased, for example, at a preheat of 350°C the pressure is increased by a factor of 2.2.

## Dimensions

### FRT B Series Radiant and Immersion Tube Gas Burners



Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	X (Min)
FRT3B	Rp1 <sup>1</sup> / <sub>2</sub>	Rp3 <sup>3</sup> / <sub>4</sub>	183	153	68	ø77	94	98	47	ø168	ø145	13	75	210
FRT4B	Rp2 <sup>1</sup> / <sub>2</sub>	Rp 1	216	179	83	ø89	105	108	52	ø193	ø170	13	40	210
FRT5B	Rp 4	Rp 1	254	224	102	ø115	126	144	63	180 SQ	ø220	18	20	240

**WARNING:** The data outlined is for information only and does not form part of any contract. Our policy is one of continuous improvement and we therefore reserve the right to modify specifications or dimensions without prior warning. Situations dangerous to personnel and property can develop from incorrect installation and operation of combustion equipment. Fives North American Combustion UK, Ltd urges compliance with International, National and Local Safety Standards and that installation is carried out by properly qualified personnel.

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