

C-B5

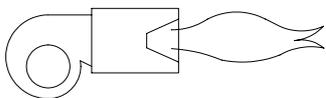
rev. 09/98

ICAM



**TYPE TF & TFR**  
**IMMERSION TUBE FIRING**  
**GAS BURNERS**

**COMTHERM**  
**PACKAGE BURNER**



# THE TF & TFR BURNER

The 'TF' & 'TFR' series of packaged gas burners have been specifically designed for the firing of immersion tubes installed in liquid tanks.

The TF burner utilises standard Comtherm PC and MC nozzle mix burner head and are intended for application to conventional sized tubes with diameters up to 300mm and length to diameter ratio's up to 60:1 depending on tube diameter.

The TFR burners are intended for application to small bore tube applications with tube diameters up to 200mm in diameter.

The TFR burner head has been specially developed for small bore applications and is available for firing into immersion tubes with diameters up to 200mm.

The TFR burner uses a split combustion cone head where air is introduced into the flame at three points and provides cooling for the combustion tubes.

- ◆ **TFR burners can be used on applications with tube length : diameter ratios up to 140:1 depending on tube diameter**

TF Burners can be supplied with thermal inputs from 50kW to 1000kw are available; TFR burners can be supplied for inputs ranging from 35kW to 750kW.

Depending on immersion tube selection TF burners and TFR burner applications can produce thermal efficiencies of over 75% and 80% respectively.

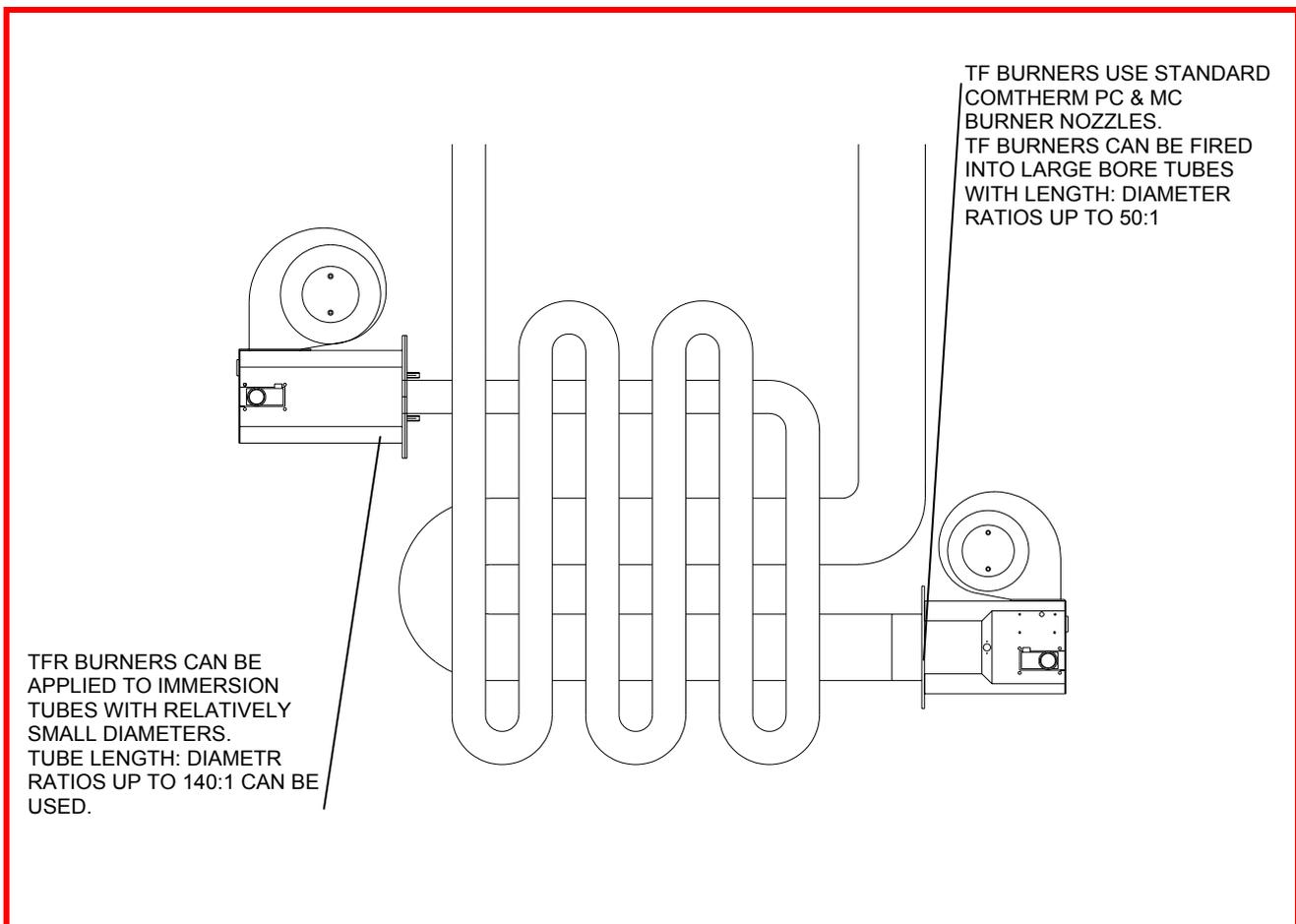
## BURNER ASSEMBLIES

Each burner unit is supplied with a packaged and pre-piped valve assembly, including the safety valves and controls necessary to form a fully pre-packaged combustion module.

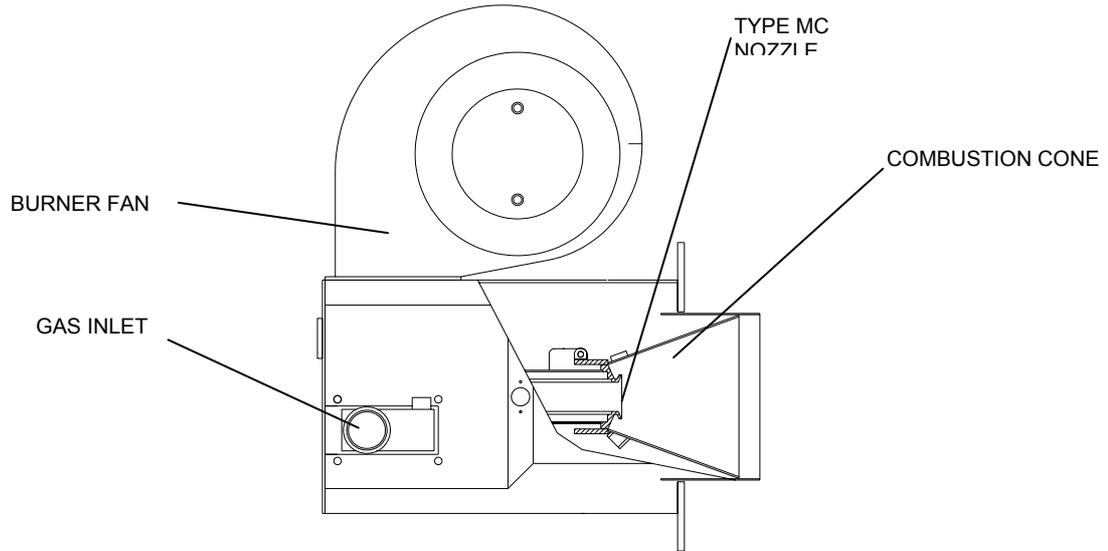
Burner assemblies normally include automatic flame safety and ignition equipment.

Burners built to special specifications depending on application and country of installation can be fitted.

Burners packages are fully tested and the operation of all components checked before despatch from the factory.



## THE TF BURNER



## FUEL SUPPLY

Burners can be fitted for operation with natural gas, LP gases or light fuel oils.

All gas burners are sized to suit an inlet gas pressure of 17.5mbar (natural gas) or 30mbar (LP gases) unless otherwise specified. Burners can be supplied to suit other fuel types and supply

TFR burner thermal capacities can be increased and higher immersion tube length: diameter ratios used when high gas and air pressures are available.

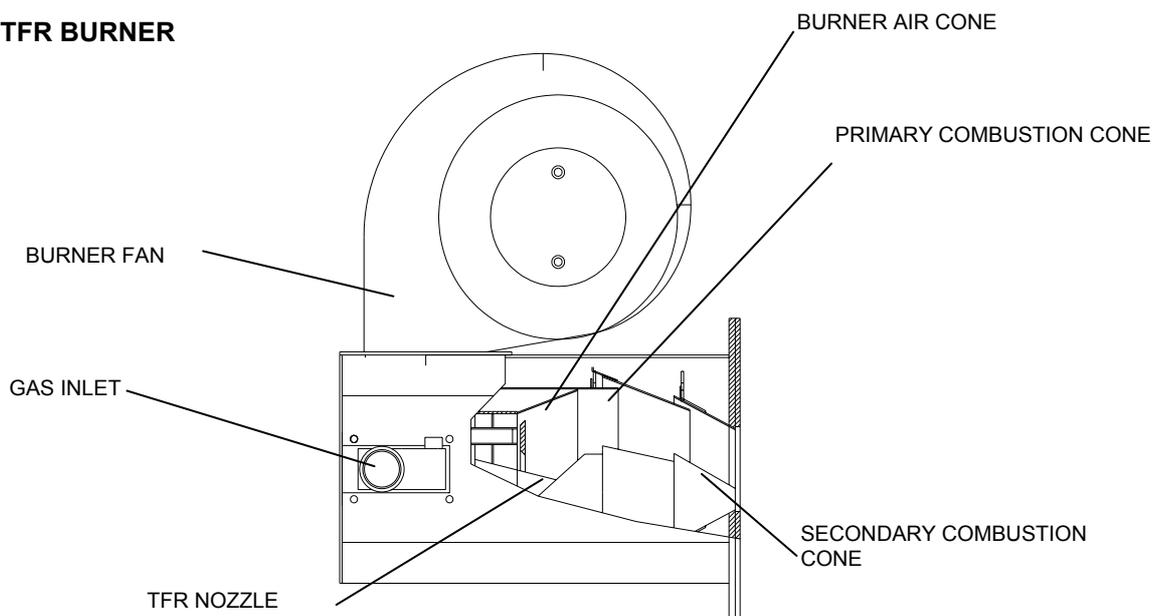
## TYPES OF CONTROL AVAILABLE

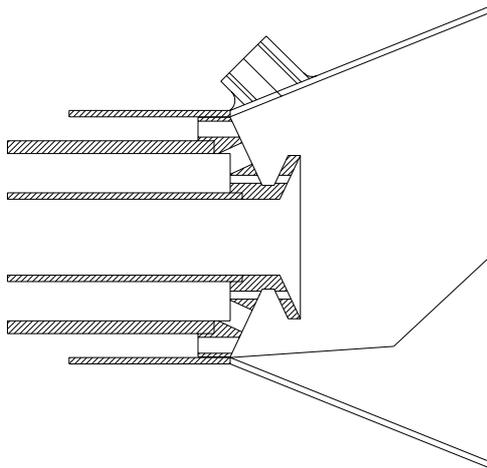
Burners are normally supplied suitable for on-off control with slow opening safety shut off and control valves.

If required modulation control or high-low controlled burners can be supplied,

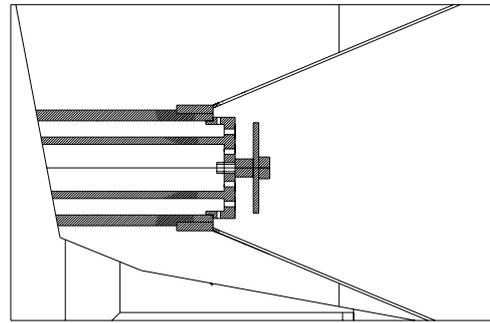
Condensation of products of combustion in the tubes limits the turndown range available when high-low or modulation control is used.

## THE TFR BURNER





MC TYPE BURNER NOZZLE



PC-E TYPE BURNER NOZZLE

## ELECTRICAL SUPPLY

Burners can be supplied to suit almost all types of electrical supply; including all common industrial three phase (50 or 60Hz) power supplies and with 110/120v or 220/240v control circuits. Burners to suit other electrical supply voltages can be supplied specially.

## USEFUL FACTS TO ASSIST IN BURNER SELECTION.

1KW = 3412 Btu.hr = 859Kcal.hr = 3.6MJ.hr.

1mbar = 0.4" w.c. = 10mm w.c. = 100Pa.

## WHEN ORDERING TF & TFR BURNERS PLEASE SPECIFY THE FOLLOWING INFORMATION:

Type of fuel and supply pressure to burner.

Electric supply data:

Burner motor voltage (1 or 3 phase)

Control circuit voltage (1 phase)

Valve and burner specification required.

Details of application.

Immersion tube length and diameter.

Number of 90° bends in tube and position.

## INSTALLATION, COMMISSIONING AND MAINTENANCE: -

If required a complete delivery, installation and commissioning service can be supplied, including the manufacture and installation of immersion tubes.

An installation and maintenance manual is supplied for all burners; commissioning must be carried out by competent engineers in accordance with the instructions in the manual.

Maintenance and service contracts are available - this normally includes scheduled site visits by our engineer and the free of charge supply of burner consumables such as ignition electrode and flame rectification electrode.

A selection of information data sheets (C-B5-INF\*\*\*) are available showing physical dimensions of types of TF & TFR burners and some technical detail.

Comtherm technical staff can assist in immersion tube selection and design; if in doubt concerning any application contact the Comtherm sales office.

A selection of complete general arrangement drawings (M3-TF-) is available.

***As our policy is one of continuous improvement we reserve the right to amend specifications at any time without prior notice.***

**ICAM**

**ICAM B.V.**

Spoorlaan 37 A  
Tel: 0297-264444

3645 EK Vinkeveen  
Fax: 0297-266690

E-mail: info@icam.nl <http://www.icam.nl>

