

# DATASHEET

## Smokeless Flare Tips Flare Tips with Centre Steam Injection FC Series



### Typical Application

Flare Tip FC Series is used where environmental considerations allow low rate smoke production with heavier gases or where the gases are not inherently smoke producing.

### Mode of Operation

The FC series Flare Tip has a low noise multi port centre steam nozzle fitted into the flare tip. Steam is injected into the gas stream and allowed to mix fully before the gas reaches the flame envelope. The specific heat capacity of the steam absorbs some of the available heat and results in a lower flame temperature thus retarding thermal cracking and reducing smoke production from unburnt carbon particles.

Injection of steam into the flare tip, results in increased exit velocity which inspirates large volumes of air into the flame envelope and aids smokeless combustion.

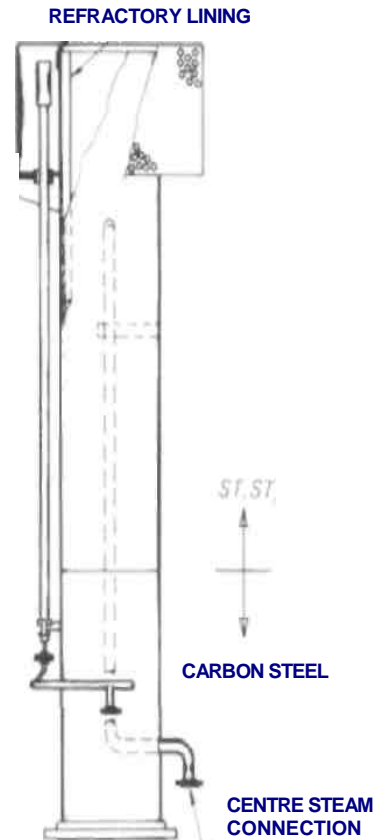
The FC series is supplied as standard with a perforated windshield to prevent flamelick and to help cool the top of the flare tip closest to the flame envelope. However, with a constant wind direction or where the land formation around the site creates unusual eddy air currents, a heat shield is supplied to give greater protection.

The unique refractory lining system is secured to the tip by heat resistant steel bull horn sprags. Many thousands of fine stainless needles are mixed thoroughly with the refractory to reinforce the material evenly over the full depth of refractory without producing

expansion/contraction shear planes. This refractory installation procedure has been developed and proven over many years to give the longest possible operating life even in the most arduous conditions.

In order to prevent flame lift off from the tip, the FC series has bluff bodies positioned above the refractory lined upper section of the flare tip.

The FC series has been designed to operate with all available pilot and ignition systems, e.g. Natural Draught, Natural Draught Splitter System and Forced Draught. These are fully described in our Technical Bulletins.



FC FLARE TIP WITH WINDSHIELD

- Spares and After sales Service

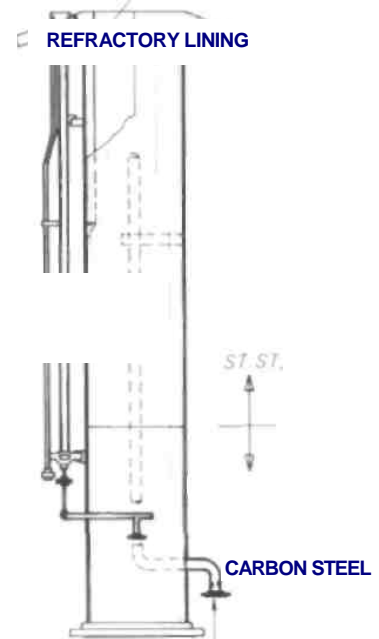
## Key Features

- Heat shield or wind shield supplied as alternatives
- Unique refractory lining system
- Multi port steam nozzle for good noise reduction
- Good flame retention
- Low gas consumption pilots
- Prolonged tip life
- Low Gas Purge Rates

## Other Hamworthy Combustion Services

### Related to This Product

- Steam assist smokeless flare tips
- Sonic Flare Tips
- FFG Ignition systems
- HE Ignition systems
- Flarscan smoke detection Systems



- CENTRE STEAM
- CONNECTION

### FC FLARE TIP WITH HEATSHIELD

## Specification

Tip size	4" dia. to 60" dia
Tip connection	4" dia. to 60" dia. flanged
Steam connection	1" dia. to 6" dia. flanged
Steam pressure	20 psig to 80 psig (1.4 to 5.5 bar g)
No. of pilots	4" to 10" dia. : 2 pilots 12" to 30" dia. : 3 pilots 36" to 60" dia. : 4 pilots
Pilot gas connection	1" dia. flanged
Flame front connection	1" dia. 3,000* union or 1" flanged as required
Pilot Thermocouples	Cromel/Alumel (if required terminate in a junction box)
Lifting Lugs	Provided as standard
Note: The FC Flare Tip is individually sized for each application.	

**Hamworthy Combustion Engineering Srl**  
Via A Gramsci, 11  
20035 Lissone (MI) - Italy  
Tel: +39 039 2434010  
Fax: +39 039 2143 290  
Email: [info@hamworthy-combustion.it](mailto:info@hamworthy-combustion.it)  
Website: <http://www.hamworthy-combustion.com>

**HAMWORTHY**  
COMBUSTION

Incorporating:  
PEABODY ENGINEERING  
AIROIL - FLAREGAS  
CHENTRONICS