

METHANE FROM FLARING TOOLKIT



Flare Design: Air-assisted flare

How is the flare designed to minimise methane? > Flare Design: Air-assisted flare

Summary

Air-assisted flare design utilizes forced air injection into the flare which provides smokeless flaring while maintaining the desired combustion efficiency.

How it works

- Air is fed through a blower system into an air riser where it is combined with waste gas. The extra air flow causes turbulence in the waste gas stream which improves mixing and increases combustion efficiency.

- Air-assisted flare tip designs vary by manufactures.



Air assist flare designs (Images courtesy of © John Zink Company LLC)

Advantages

- ✓ Produce less noise than the steam-assisted flares.
- ✓ Best option for harsh conditions such as desert environment where water is scarce.
- ✓ Provides smokeless flaring with 98% destruction efficiency provided that the amount of air is monitored and controlled to maintain the desired combustion efficiency.

Limitations

- ✗ If too much air is applied by operating the combustion air blowers at higher flow than required could result in a low-pressure zone at the tip which tends to pull air into the tip causing burn back and damage the flare tip.

Go Deeper

- [Vendor website: Zeeco](#)

• [vendor website: John Zink Hamworthy](#)

Case study

Awaiting copyright approval

How is the flare designed to minimise methane?



Flare Design: Pilots



Flare Design: Nitrogen Purge



Flare Design: Sonic tips with fixed exit slot



Flare Design: Sonic tips with variable exit area



Flare Design: Flare seals – Molecular (buoyancy) and Velocity Seals