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PRODUCT CATALOGUE

A BURNING PASSION

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www.samiasrl.com

REFINERY HEATERS BURNERS

A BURNING PASSION

- Super loNOx or Conventional, Forced and Natural Draft.

Burner 3D view (base plate)

Burner Assembly

Burner Part

OPERATING PRINCIPLE OF SRX LoNoX GAS BURNER

The "SRX®" burner, utilizes a new combustion method referred to as "Self-fuel diluting combustion" which, without diminishing any combustibility, effectively combines the two most powerful reducing mechanisms to decrease NOx:

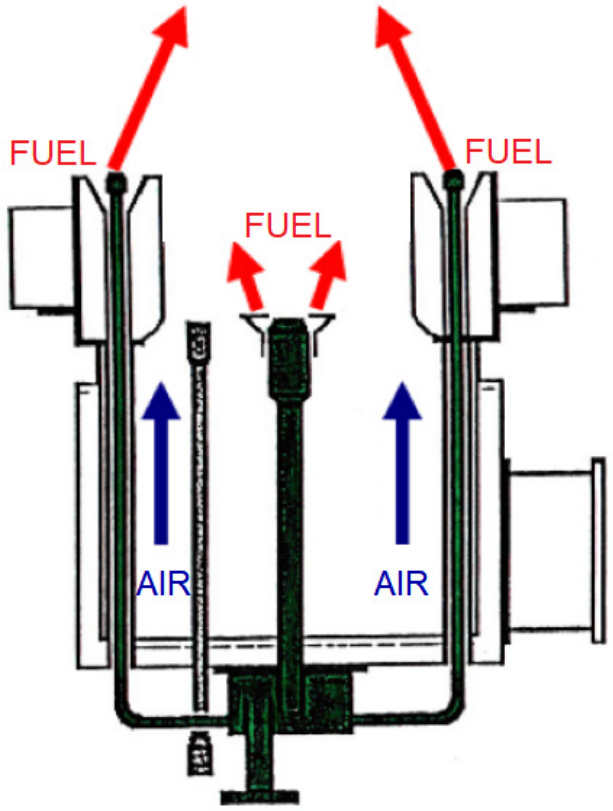
- Flue Gas Recirculation
- Multi-port Fuel Injection

The "SRX" burner, as the attached illustration shows, has an extremely compact construction.

The fuel is ejected through a primary fuel nozzle and four secondary, while all the air for combustion is supplied from the burner tile, thus allowing the primary and secondary combustion zone to be formed within the flame zone.

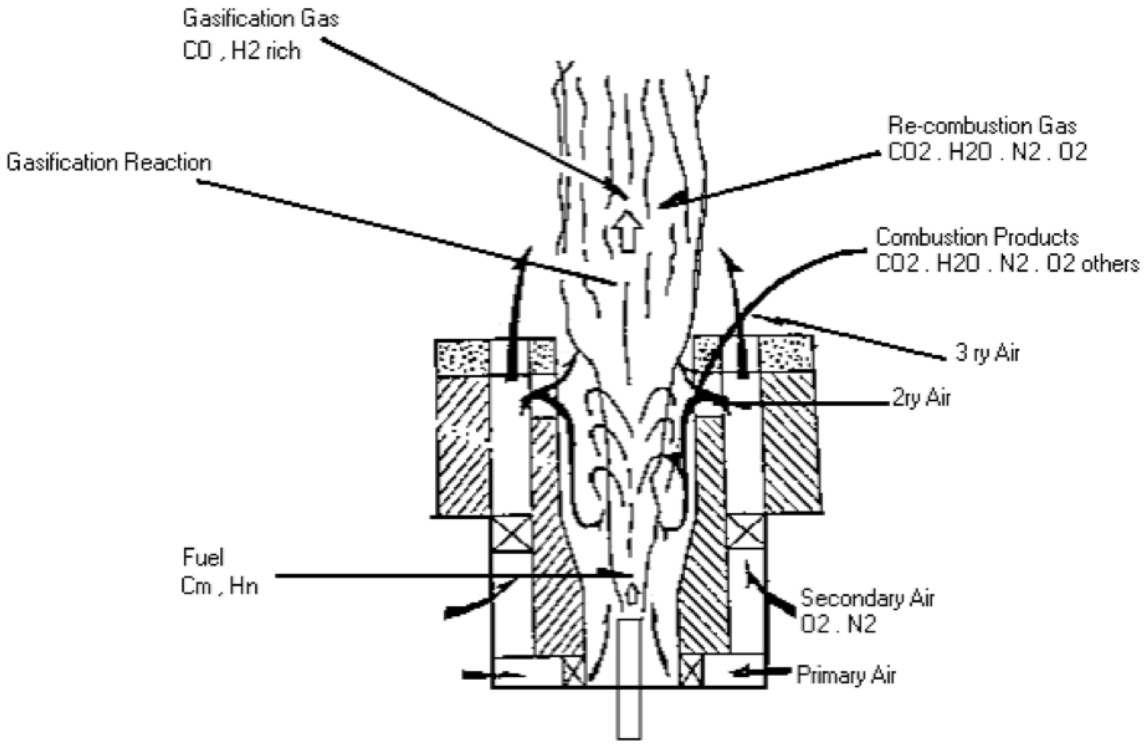
In the primary zone, combustion is made so that a high temperature area can be formed to hold flames stabilized in the secondary zone where the Super Low NOx performance, according to the "Self-fuel diluting method", is obtained .

The "SRX®" type gas burner produces a short, round flame and it's designed to operate under both natural and/or forced draft condition.



OPERATING PRINCIPLE OF SRG LoNoX GAS AND/OR OIL BURNER

The "SRG®" burner, without requiring any special power, recirculates air and part of the combustion products into the jet energy of the fuel.
Thus this is called on the "Self Recirculating Gasification" (SRG®) burner.
As the attached illustration shows, air and high-temperature combustion products are introduced into the tile by the jet energy of fuel so that partial combustion and the endo-thermic gas reaction takes place. NOx is drastically reduced by the effects of both flue gas recirculation and three stages combustion.



REFINERY HEATERS BURNERS

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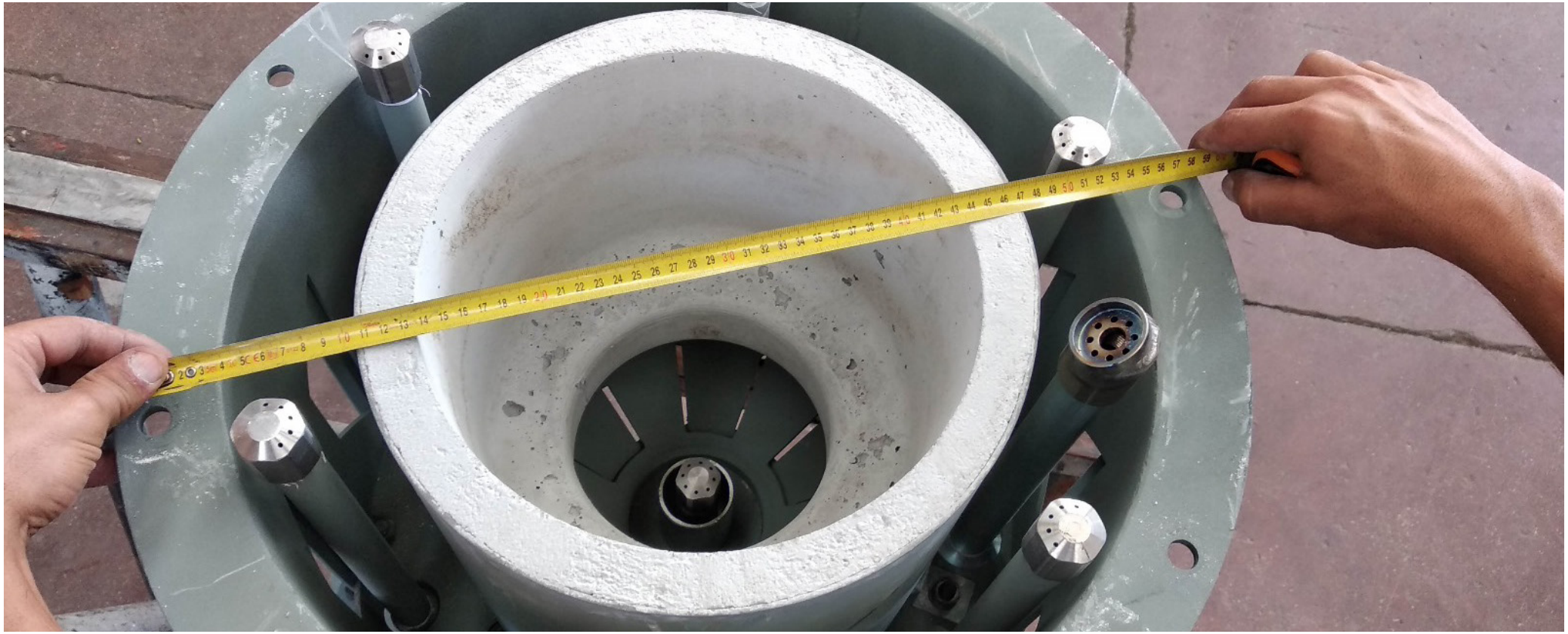
Samia® Italia provides the following services

- Surveys/Modification
- Feasibility studies/Retrofitting
- Installation Supervision
- Revamping/Repairs/Upgrade
- Spares/Modifications
- Start up



FLARING SYSTEMS

A BURNING PASSION

- Elevated Flares: Onshore, Offshore and Mobile.
- Steam/Air-Assisted Smoke Suppression System.
- Sonic Single or Multiarms.
- Horizontal Pit Tips.
- Cold Vent Stacks and Fire Fighting Device.
- Ignition, Monitoring and Control Systems.

Multiarm (Sonic)

Mobile

Self-supported

Guy wired

Derrick

Offshore

FLARING SYSTEMS

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Air-assisted Flares

Some Flares use forced air to achieve the mixing required for smokeless operation. Combustion air is conveyed to the flare tip through a riser connected to a fan installed at ground. This system is used where steam is not available.

Sonic Flares

Sonic flares use the vent stream pressure to promote mixing at the burner tip. Several vendors now market proprietary, high pressure drop burner tip designs. If sufficient vent stream pressure is available, these flares can be applied to streams previously requiring steam or air assist for smokeless operation. They have multiple burner heads that are staged to operate based on the quantity of gas being released. The size, design, number, and group arrangement of the burner heads depend on the vent gas characteristics.

Steam-assisted Flares

Steam-assisted Flare is the predominant flare type found in refineries and chemical plants. To ensure the smoke suppression, this type of Flare System injects steam into the combustion zone.

Burn Pit Horizontal Flares

These horizontal Flare Tips best application is in presence of some liquids carry-over from the flared gas. These will pass through the Flare Tip itself, depositing into a pit and, once reached combustible temperature, thank to flame heat of horizontal Flares, will be destroyed by combustion.

FLARING SYSTEMS

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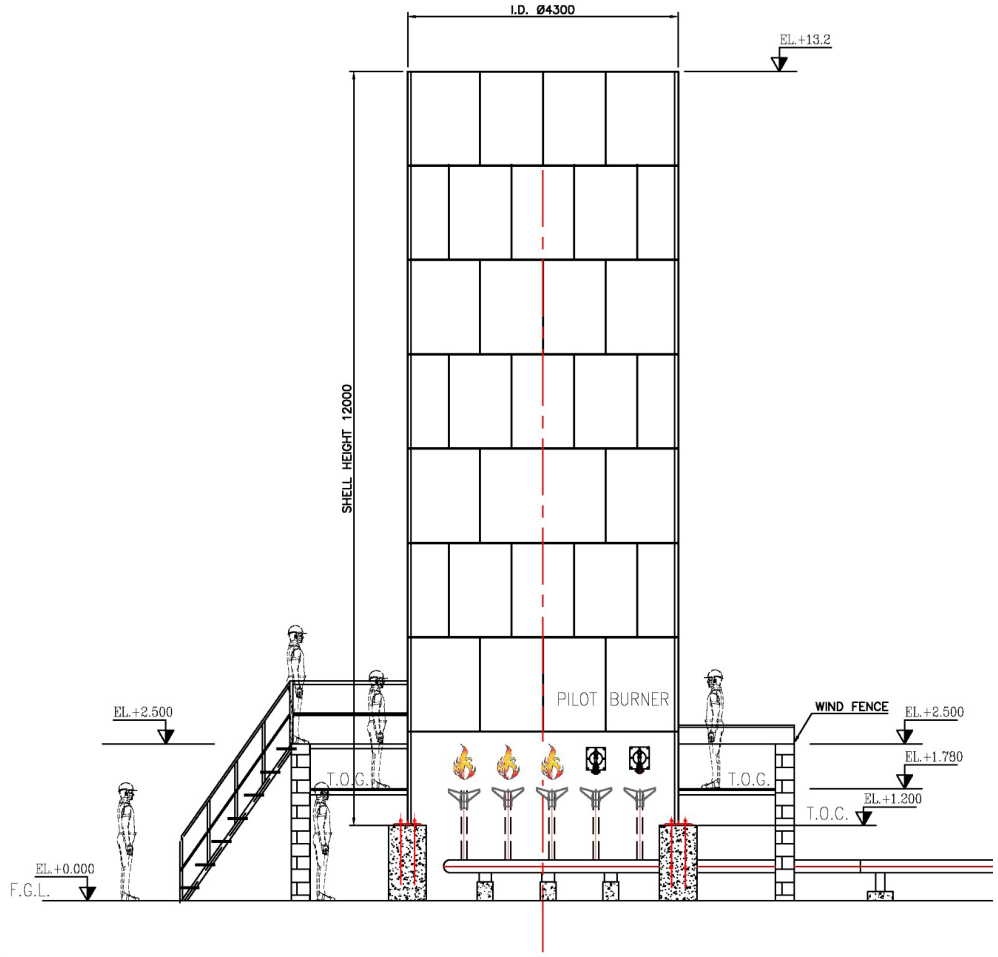
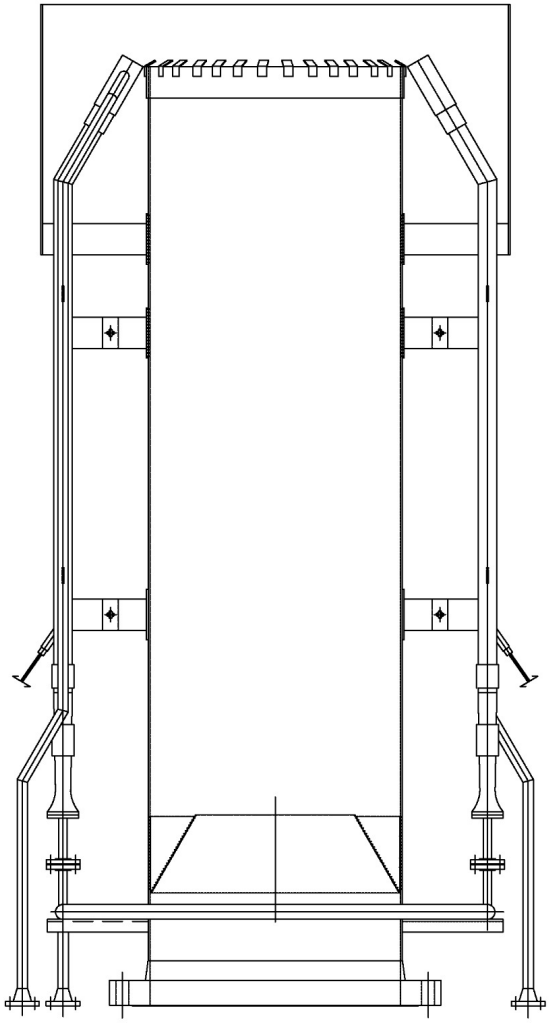
Ground Flares

Enclosed Ground Flares are used instead of Elevated Flares when plants are too close to manned areas. Flare gas is sent to dedicated Burners, mounted inside a cylindrical structure adequately sized to hind the flames and reduce combustion noise and heat radiation.

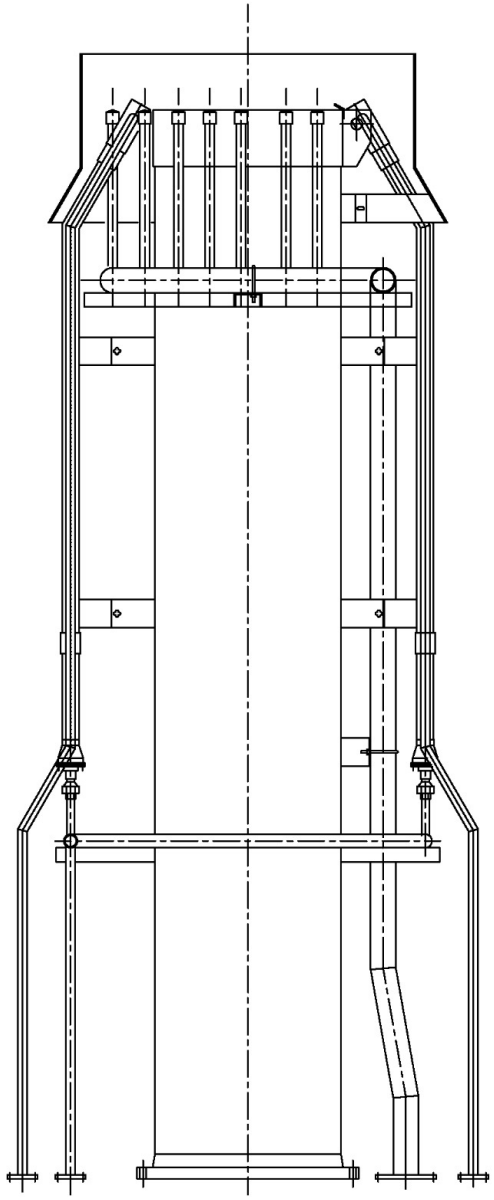


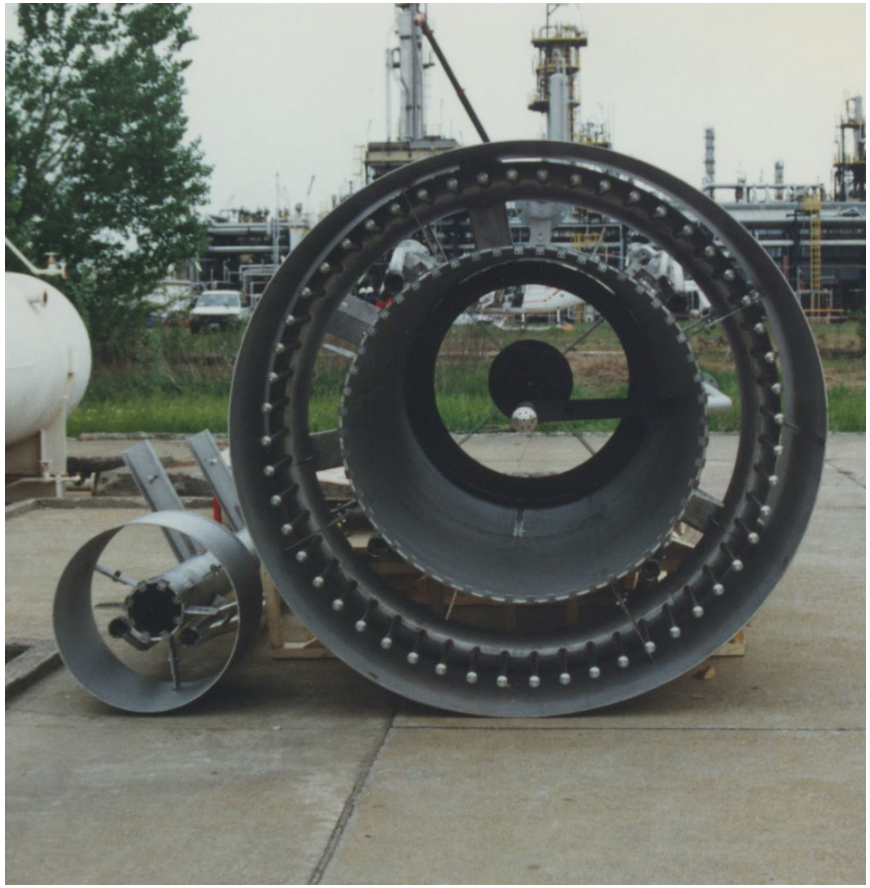
BARREL FLARE TIP



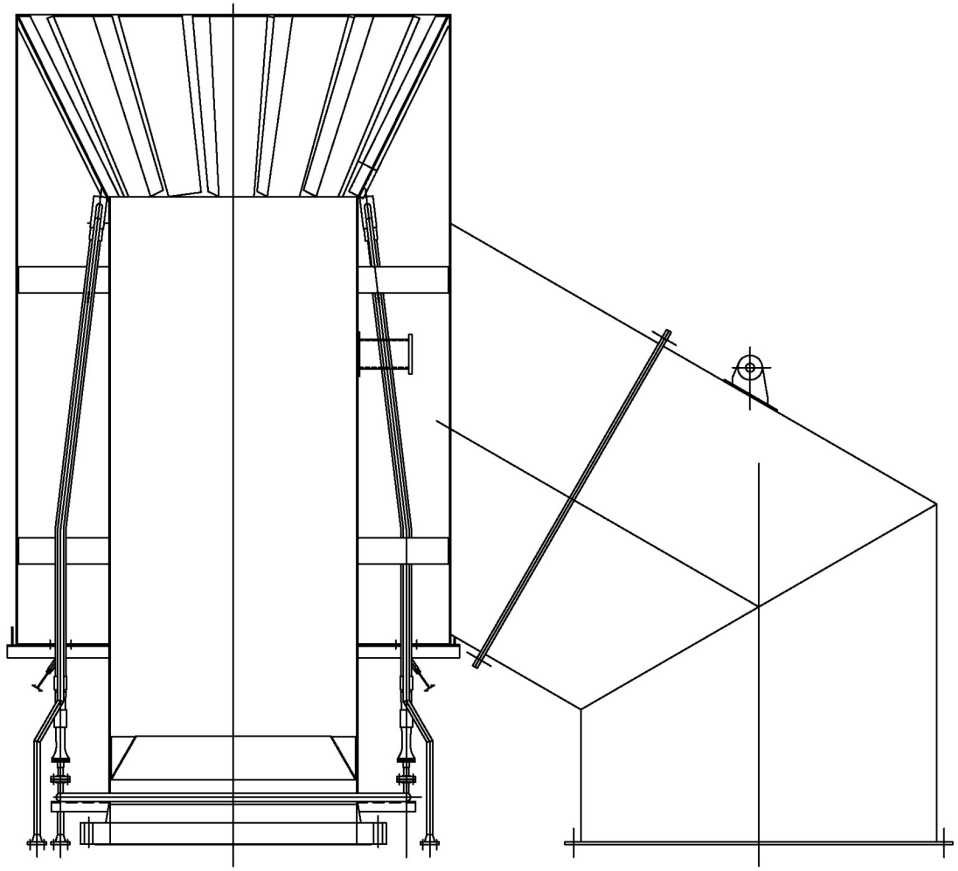
STEAM ASSISTED FLARE TIP

A BURNING PASSION

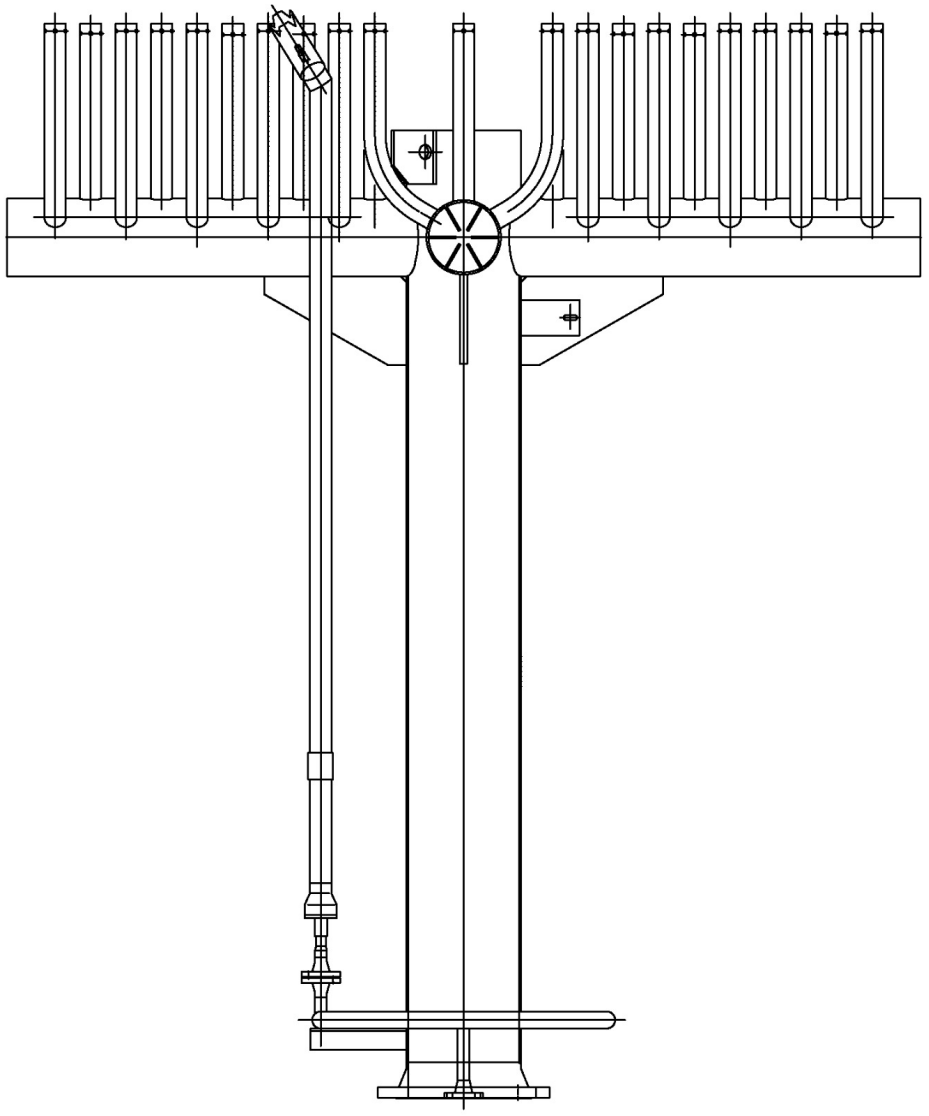




AIR-ASSISTED FLARE TIP



SONIC/MULTIPOINTS TIP



SONIC/MULTIARMS FLARE TIP

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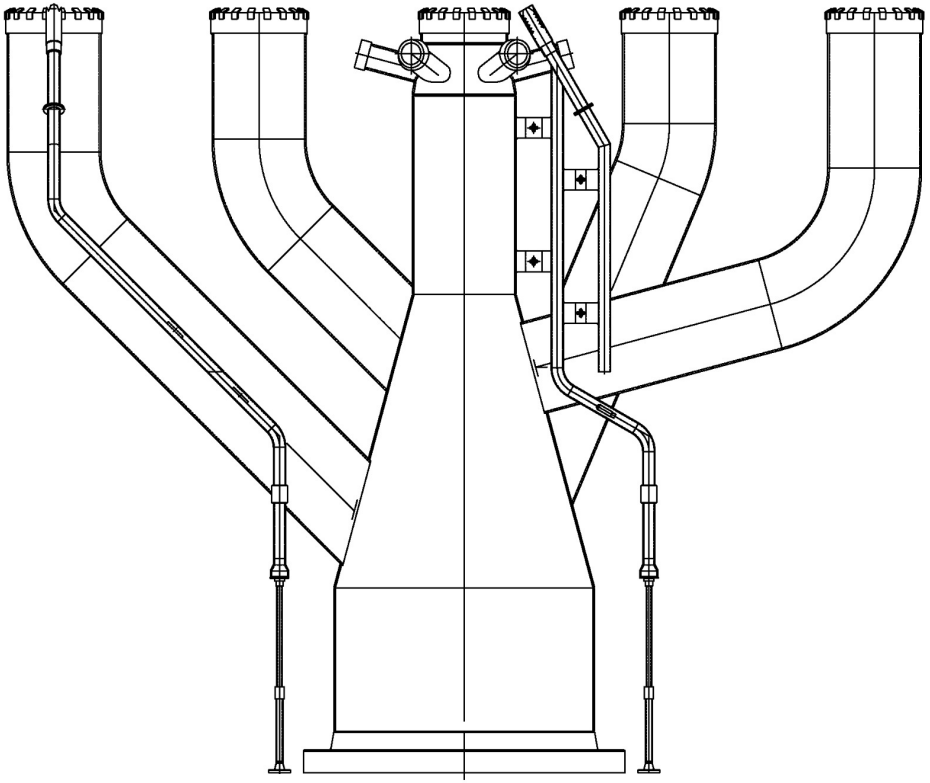

DIODE PINECONE

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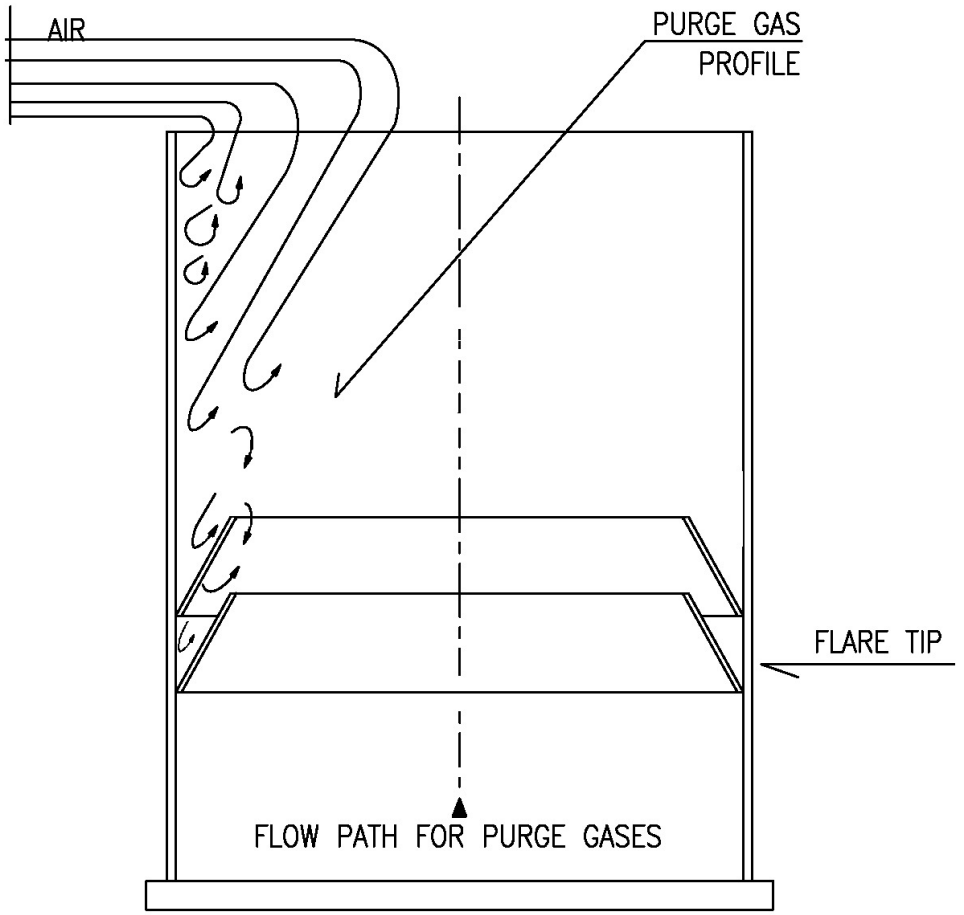
The Samia Italia designed “Pinecone”, also called Velocity or Dynamic seal, is an equipment integrated at the base of the Flare Tip, the purpose of the “Pinecone” is to avoid air entrainment into the flare system.
The principle of the “Pinecone” is to trap air as it enters the Flare Tip by mean of conical spoilers, in order to intercept it and turn it back towards the tip exit with the support of purge gas.



MOLECULAR SEAL

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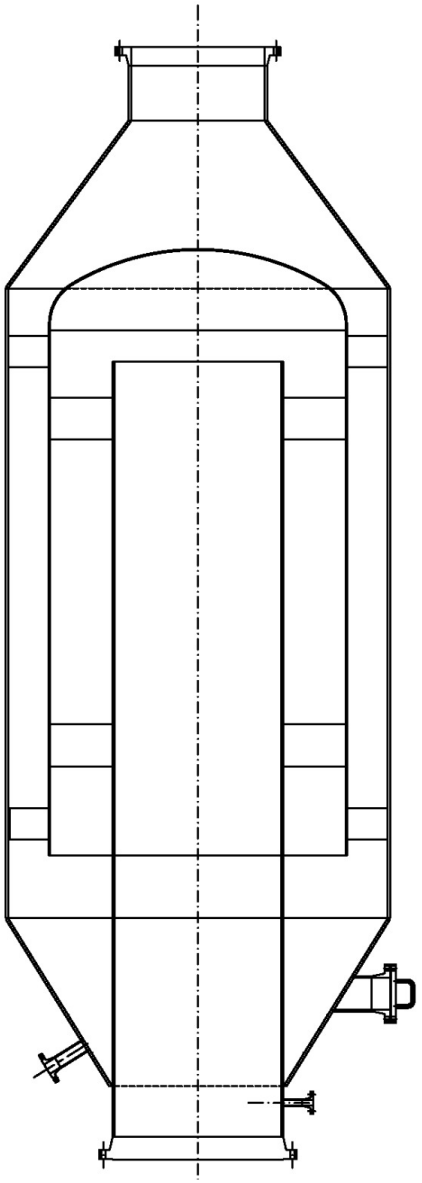
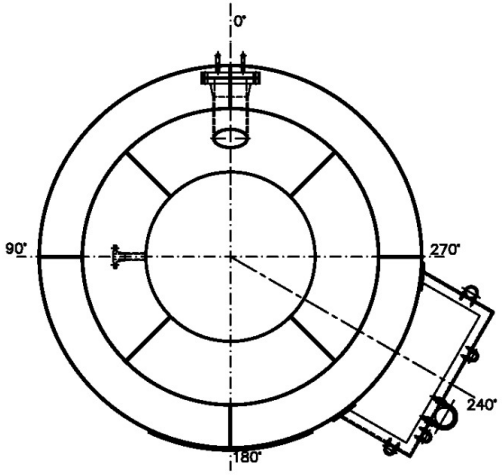
Molecular Seals are installed to reduce the purge gas flow. The Seal is mounted between Flare Tip assembly and flare riser; thank to an exclusive labyrinth design the sealing effect is guaranteed.
The operating principle considers the density difference between the purge gas and air, obtaining a gas rich zone within the Molecular Seal thus avoiding air entrainment. Typical design is shown beside.





FLARES SERVICES

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Samia® Italia provides the following services

- Surveys and inspections
- Flares aerial inspection (Helicopter or Drone)
- Feasibility studies
- Eraction supervision
- Revamping/Repairs/Upgrade/Modifications
- Spares parts
- Start up support
- Training courses
- Environmental analysis
- Pollution dispersion modelling

ACCESSORIES/SPARE PARTS

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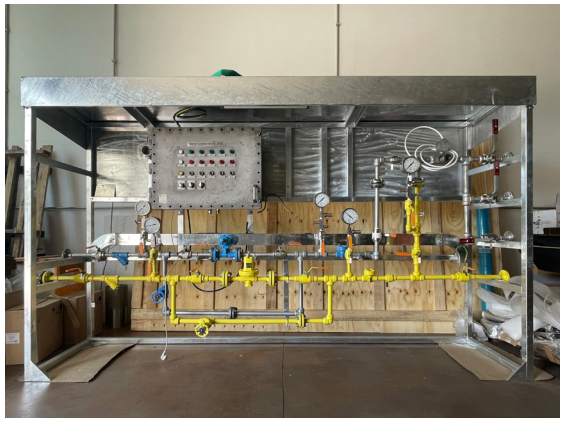
Samia italia, provides parts for Refinery Burners and Flares, including:

- Valves
- Hoses
- Pilot Burners
- Fuel and Steam Nozzles
- Local Ignition Systems
- K.O. Drums Separators and Water Seals



I & C panel

K.O Drum

IR Detector

Snuffing system

Purging system

CERTIFICATION

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Italia

CERTIFICATO

Nr. 50 100 13457 - Rev.001

Si attesta che / *This is to certify that*

IL SISTEMA QUALITÀ DI
THE QUALITY SYSTEM OF

SAMIA ITALIA S.r.l.

SEDE LEGALE:
REGISTERED OFFICE:

VIALE PIAVE 35
IT - 20129 MILANO (MI)

SEDE OPERATIVA:
OPERATIONAL SITE:

VIA BERGAMO 39
IT - 23807 MERATE (LC)

È CONFORME AI REQUISITI DELLA NORMA
HAS BEEN FOUND TO COMPLY WITH THE REQUIREMENTS OF

UNI EN ISO 9001:2015

QUESTO CERTIFICATO È VALIDO PER IL SEGUENTE CAMPO DI APPLICAZIONE
THIS CERTIFICATE IS VALID FOR THE FOLLOWING SCOPE

Progettazione e gestione della fabbricazione di fiaccole, bruciatori, apparecchiature di combustione e relativi accessori per l'industria estrattiva, petrolchimica ed energetica (IAF 18, 34)

Design and project management of flare systems, burners, combustion equipment and relevant accessories for oil & gas, petrochemical and energy sectors (IAF 18, 34)

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
SGQ N° 049A

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Per l'Organismo di Certificazione
For the Certification Body
TÜV Italia S.r.l.

Andrea Coscia
Direttore Divisione Business Assurance

Validità / *Validity*
Dal / From: 2018-06-01
Al / To: 2019-04-25

Data emissione / *Printing Date*
2018-06-01

PRIMA CERTIFICAZIONE / *FIRST CERTIFICATION:* 2016-04-26

"LA VALIDITÀ DEL PRESENTE CERTIFICATO È SUBORDINATA A SORVEGLIANZA PERIODICA A 12 MESI E AL RIESAME COMPLETO DEL SISTEMA DI GESTIONE AZIENDALE CON PERIODICITÀ TRIENNALE"

"THE VALIDITY OF THE PRESENT CERTIFICATE DEPENDS ON THE ANNUAL SURVEILLANCE EVERY 12 MONTHS AND ON THE COMPLETE REVIEW OF COMPANY'S MANAGEMENT SYSTEM AFTER THREE-YEARS"

TÜV Italia S.r.l. • Gruppo TÜV SÜD • Via Carducci 125, Pal. 23 • 20099 Sesto San Giovanni (MI) • Italia • www.tuv.it TÜV®

COPY OF CERTIFICATE AVAILABLE UPON WRITTEN REQUEST

SAMIA ITALIA SRL

THANKS FOR YOUR ATTENTION

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