On Demand Ballistic Ignition Solutions.

At Zeeco, we have seen customers face the costly consequences of downtime and the pressure to reduce overall emissions. Our advanced ZIP™ (Zirconium Instant Pressurized) ballistic ignition system offers a safe, reliable, and flexible “on demand” flare system ignition solution that minimizes emissions, operates effectively under challenging weather conditions, and can eliminate the need for continuous pilot fuel gas supply.

The system eliminates continuous pilot gas usage and achieves more reliable ignition than direct electrical spark technologies. When used in tandem with FGR (Flare Gas Recovery) and a liquid seal, zero hydrocarbon emissions can be achieved during continuous operation - compliant with ‘Zero Routine Flaring by 2030’ initiatives. Additionally, all ignition components are entirely removed from the heat-affected zone to deliver years of reliable operation.

How It Works.

The ZIP ballistic ignition system utilizes a compressed nitrogen launching system to propel a zirconium-filled pellet through a guide tube to the flare tip. Upon exiting the guide tube at a high velocity, each pellet impacts a striker plate, showering the flare tip exit with sparks and igniting the flare gas stream.

To reduce maintenance and provide a reliable spark, all electronics and movable parts are mounted in the launching cabinet located a considerable distance away from the flare tip. The launching cabinet includes the following items:

- Moving parts
  - Pellet carousel
  - Charge system
  - Launching system
  - 2 or 4 stage nitrogen booster system as required
- Electronics
  - Automatic initiation sequence
  - System status monitoring
  - Integration with flaring system and flame monitoring

Key Differences.

While low-pressure systems use explosive pellets designed to mechanically detonate upon exiting the system, Zeeco’s high-pressure system uses zirconium-filled pellets without internal explosive material. Our zirconium pellets require a high-velocity impact with a striker plate to create sparks and will not detonate if dropped during loading or fragment collecting processes - creating a safer alternative to low-pressure systems on the market. Pellets are regularly tested to ensure safety, reliability, and quality.
Choose to work with our dedicated, flexible, and innovative team, and you won’t be disappointed. Call or email us today to request a quote or to learn more about our proprietary combustion systems.

**The Zeeco Difference**

Our only business is the combustion business. By concentrating on what we do best, Zeeco has grown into a worldwide leader in combustion solutions. We are a privately held company whose ownership stays highly involved in daily operations, with upper management comprised of the world’s leading combustion experts.

When you call Zeeco, we answer. When you make a request, you get a quick, efficient response. We are lean and efficient, able to make decisions quickly, without bureaucracy and red tape. Our sales, engineering, and purchasing groups work hand-in-hand to deliver highly competitive quotes and heroic turnaround times. We stand ready and willing to travel anywhere in the world to discuss upcoming projects firsthand, and to ensure that every existing project runs seamlessly.

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**Design Features.**

- Nitrogen booster system arrangement eliminates potential overheating and enhances equipment life
- High pressure fittings and tight tolerances increase the overall system reliability
- Can meet local and international standards, including NORSOK, INMETRO, ATEX, PED, and ASME
- Can be applied to all types of flares (elevated, offshore, burn pits, etc.)

**Safety Features.**

- Minimum impact velocity for ignition
- Provides direct feedback into DCS
- Launch is only permitted after unit is pressurized and charge valve is closed
- High integrity self-contained enclosure for launching system

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