

# Boldrocchi Project for Dangote Refinery in Nigeria

In 2016 Boldrocchi Group has been awarded by GE Oil & Gas an Order for the supply of eight Diverter Damper Systems for GE Fr 6 gas turbines, due to be installed in Dangote Refinery, Nigeria

**D**espite their apparent simplicity, the importance of Dampers become clear when they fail in operation. As evidenced by experience, Users often take dampers for granted, therefore contracting inexperienced Companies to supply inexpensive dampers: this often lead to operation failures, unplanned shutdowns and production losses. It highlights that there is no replacement for specific experience.

Boldrocchi Group offers a wide range of dampers, including on/off, modulating and zero leakage type:

- Heavy duty dampers
- Guillotine dampers
- Diverter dampers
- By-pass dampers
- Stack dampers
- Gas distributors
- Multi-louvre dampers

Our team uses mechanical design & computational fluid dynamic (CFD) studies to highlight the internal flow distribution & minimize vortex/vibration stress. Noise impact studies are also carried-out in relation to internal and external noise sources.

We tailor-make dampers of any size (over 7m x 7m (23' x 23')), any shape (square, rectangular, round, etc.), with different actuation systems (manual, electrical, hydraulic or pneumatic) & for any amount of gas tightness or flow required.

## The Dangote Project

The scope of supply comprises eight electrically operated diverter damper systems each fitted with a guillotine and sealing-air fan skid.

The system is entirely designed in Boldrocchi's Italian headquarter (located in Biassono near Milan), fully respecting all the Customer's specifications and leveraging on Group's capability in combining customization level with the high technology content,

consolidated over decades of experience in the sector. This project reaffirms the strength of Boldrocchi products. In particular the zero leakage sealing technology and the actuator systems have been tested in Boldrocchi Labs with a back-pressure which exceeded 3x the customer requested specification.

Consequently the wear of elastic parts could be reduced and operational life extended.

In order to test for proper functioning of individual components and to ensure prompt on-site erection, all units are fully assembled and tested in the presence of customer inspectors at Boldrocchi's new testing facility in compliance with strict product control procedures and standards.

The opportunity to use Company's owned manufacturing and testing facilities is a great point of strength in developing demanding Projects.

From the early stages of conceptual design attention has been paid to the optimization of transport and the reduction of assembly work on-site.

For this reason, all components are designed with a high degree of prefabrication. As shipment of exceptionally large items, such as some heavy duty dampers, via road is troublesome due to the need of transit permits, the products are disassembled after functional testing into key components and reassembled on site under our supervision, with minimal impact on resources and time spent before actual shipping.

Boldrocchi, with over 100 years of experience, has successfully executed more than 88.000 worldwide projects. The Group is manufacturing in accordance with Project-specific and International Standards full dedication to Quality in Engineering, manufacture and Project Management.

All these aspects have allowed Boldrocchi to build a strong and reliable relationship with its customers.

