E&M Combustión

The best choice in industrial burners and combustion equipment

The best, the beast
Patents and Quality Certificates
A Global Technology Leader

- Global Operations
- Output Capacity
- Technology and Service
- Environmental Awareness
A Global Technology Leader

Extensive experience in the field of combustion

- 1,000 installed equipments
- Presence in 30 countries
- Pemex, Sabic, Iberdrola, Repsol, Siemens, Diageo, etc. have trusted us
- 4 patents
- Quality system accreditation

- Innovative in technological and industrial combustion
- World leader in segments such as ATEX and NEC burners
- Global technology leader: design, manufacture, installation and maintenance of burners
A technical solution for each industrial need

Our mission is to create equipment and designs to meet our customers’ requirements, so we develop burner technology with low contaminating emissions that at the same time ensure major energy savings.

E&M Combustion manufactures and markets burners, with the overriding aim being to provide customised solutions for industrial combustion processes. The wide range of burners we offer enables us to respond to most of the needs arising in a company, especially in the energy, oil & gas, steel and metal-working sectors.

Besides the use of traditional fuels, E&M Combustión undertakes its own designs in order to adapt to the ever more frequent cases in which the energy resource used involves lean gases, recycled oils and other types of alternative fuels. Our designs also consider the possibility that a single burner may be used for several types of fuels. E&M Combustión develops combustion equipment with wholly innovative and cutting-edge designs, creating a highly attractive product for the end customer. Our technological developments are designed to provide top-drawer know-how in matters of energy efficiency and the reduction in contaminating emissions, contributing to the sustainable development of our environment.

Key milestones • There follows a brief summary of our constant progress

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tr>
<td>2004</td>
<td>Incorporation of the company. Design of the first prototypes.</td>
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<td>2005</td>
<td>Market launch of the JBM range.</td>
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<td>2006</td>
<td>Start of the company’s internationalization process.</td>
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<td>2008</td>
<td>Securing of a second patent and international market launch of the JBD models.</td>
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<td>2009</td>
<td>Commercialisation of the JBM-HP and JVA models.</td>
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<td>2010</td>
<td>Opening of the first commercial office in China.</td>
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<td>2011</td>
<td>Commissioning of the new Artea plant, with over 2000 m2 dedicated to the manufacture of equipment.</td>
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<td>2012</td>
<td>Extension of the range of burners up to 85 MW.</td>
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<td>2014</td>
<td>E&amp;M Combustion is a consolidated business, selling its equipment in over 20 countries.</td>
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<tr>
<td>2016</td>
<td>Opening of the commercial office in India.</td>
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The Company · Innovation and R+D+i

Investment in innovation

The main pillars of our business vision are investment in innovation, R+D+i, with the development of original prototypes, as well as the ability to swiftly adapt our designs to a customer’s requirements, always seeking the highest energy efficiency and the lowest levels of contaminating emissions.

Simulations and testing

We have an extensive range of work tools. We start by using state-of-the-art software for fluid simulation. Our equipment is subsequently tested in a comprehensive array of dedicated installations. Finally, our burners undergo trials on boilers and in plants to ensure we provide the market with a fully reliable product, and above all one which is innovative.

R+D+i

Our R+D+i department collaborates with combustion technology centres in different countries. This means we are working with a top-tier team of researchers, allowing us to share information and pursue several lines of research. The final outcome is the pooling of different options for improvement, which are embodied in a highly satisfactory and innovative product for the customer.

One example of this is the I+DEA 2 project, conducted over the course of four years, focusing on the study of burners to be used with different biofuels, especially several mixtures of bioethanol and bioethanol-biodiesel, which have made us a global benchmark in the combustion of eco-fuels.
Respect for nature is in our DNA

The natural environment is implicit in our very name “E&M Combustión · Energía y Medio Ambiente”, with the reduction of emissions being an ongoing concern. We continue to develop and improve our Low NOx technology, and our burners are constantly improving their emissions performance.

The burners are designed with “à la carte” flame lengths and widths; in other words tailor made to the customer requirements offering significant value addition as opposed to standard / off-the shelf designs.

More efficient burners, less emissions

It is our mission to offer the market with strikingly more innovative equipment.

The 3 key objectives of our corporate mission:

1 - To produce increasingly more efficient burners.

2 - Reduction of emissions without any loss of energy.

3 - User and maintenance friendly designed equipment.
The Company · Internationalization

The quest to become a global company

Another fundamental pillar of our business development is based on internationalization. E&M Combustión markets its industrial burners and combustion equipment in more than 30 countries, among which China’s commercial office, and the recent establishment of the office in India to cater to the South east Asian market requirements.

E&M Combustión commitment to international activity with an open and receptive attitude, adapting to the culture of each market and country.
The Company · A Great Team

People, our mainstay

Our main asset, and one which we are extremely proud of, is our staff, as without the people that make up our team our project would not have a future. Our staff is our true capital. Our personalised customer service is provided to different companies and cultures, from whom we wish to continue learning, and who in E&M Combustión will always find a helping hand ready to enter into a successful partnership.

Our vision is based on honesty and sincerity, with cooperation being the driver of success. The aim of our customer-focus is to find partners with whom human values are paramount and close links are forged over and above those of a purely business and commercial nature.

If you are tired of the way you are being treated by multinationals, we are the company for you!

Iñigo Bejar and Aitor Jausoro.
Founding Partners of E&M Combustión.
The Company • Meet our Staff

Organization Chart
Our Products • Industrial Burners

The most extensive range of industrial burners

- Low Temperature Burners
- ATEX and NEC Areas Burners
- Air Draught Burners
- High Temperature Burners
- Biomass Burners
- Burners for Others Applications
Our Products · Low Temperature Burners

EM Burners · Monoblock burners from 12 to 6,395 KW

Burners for all types of liquid and gas fuels. The standard range includes burners for traditional fuels, such as gas-oil, natural gas and LPG, fuel oil and combined burners for gas-gas-oil and gas-fuel oil. We also cater for special arrangements for the combustion of biogases, recycled oils and other types of alternative fuels.

JBM Burners · Latest generation monoblock burners from 2,500 to 14,500 KW

Latest generation burners for all types of liquid and gas fuels. The standard range includes burners for traditional fuels, such as gas-oil, natural gas and LPG, fuel oil and combined burners for gas-gas-oil and gas-fuel oil. Furthermore, our range features design and innovation of the highest quality. We also cater for special arrangements for the combustion of biogases, recycled oils and other types of alternative fuels.
Our Products · Low Temperature Burners

**JBM • HP Burners** · Compact Monoblock burners from 1,000 to 25,000 KW

Latest generation burners for all types of liquid and gas fuels. The standard range includes burners for traditional fuels such as gas-oil, natural gas and LPG, fuel oil and combined burners for gas-gas-oil and gas-fuel oil. We also cater for special arrangements for the combustion of biogases, recycled oils and other types of alternative fuels.

Burners designed to deal with high overpressures in the combustion chamber.

**JBD Burners** · Duoblock high-performance burners, from 1,000 to 85,000 KW

Latest generation burners for all types of liquid and gas fuels. The standard range includes burners for traditional fuels such as gas-oil, natural gas and LPG, fuel oil and combined burners for gas-gas-oil and gas-fuel oil. We also cater for special arrangements for the combustion of biogases, recycled oils and other types of alternative fuels.

Burners designed to deal with high overpressures in the combustion chamber.
Our Products · ATEX and NEC Areas Burners

ATEX and NEC Areas · Special monoblock and duoblock burners

A hallmark of E&M Combustión in recent years has been the design of special burners to be installed in areas with explosion-proof classification according to both ATEX and NEC directives and standards.

This type of design is becoming increasingly widespread and is now of almost mandatory use in industries such as refineries, petrochemical plants, power generating plants, etc.

E&M Combustión’s specialisation in this type of equipment makes us one of the market’s most competitive companies in this sector, with ample experience and an assurance of expertise in arrangements of this nature.

ATEX Area Definition

ATEX is called a series of European directives governing hazardous and also regulate the measures to ensure security and prevent an explosion. Explosive atmospheres are given in terms of:

a. Presence of fuel
b. Existence of oxidant (oxygen)
c. An energy source to initiate the reaction

The equipments have a category depending on the level of protection provided. The Category 1 (very high protection) are installed in Zone with constant explosive potential; the Category 2 (high protection) is the one with potentially explosive atmosphere; and Category 3 (normal protection), one that is not normally explosive, but it is in short periods. These assumptions require either intrinsically safe or explosion proof increased safety.
Once the customer defines the type and characteristics ATEX burners Zone, E&M Combustión design and manufacture burners, so that the equipments made are appropriate.

Although increasingly manufacturing of ATEX and NEC equipment is more widespread, few companies are capable of manufacturing burners based on specific customer requirements with regard to the definition of hazardous areas.

E&M Combustión is a leading and a competitive company in this area and are able to manufacture customized equipment, in a relatively short time, considering the different complexities offered by NEC and ATEX standards with attractive prices for the customer.
Our Products · JVA Air Draught Burners / JBP Biomass Burners

The best solution for drying processes

Burners used for numerous applications in the industrial sector when there is direct heating.
- Paint lines.
- Ceramics industry.
- Food industry.
- Direct heating of industrial premises.

JBP · biomass burners high energy efficiency

E&M Combustión, through its R+D+i, and with the collaboration of technological centers in several countries, specialized in combustion technology, has developed a range of biomass burners of latest generation burning different types of solid fuels whose main attributes are high energy efficiency and low ash. They can be used with various types of fuels such as wood pellets, olive pits, etc.

Biomass burners can be adapted to conventional boilers without any modification to the latter.
Our Products • Bespoke Manufacturing for Industry

Another of E&M Combustión’s hallmarks is the manufacture of bespoke combustion equipment for different industrial applications, hand-in-hand with the customer.

As an engineering firm, we are in a position to provide a technical solution to fulfil each and every need, regardless of the industrial sector in which our customer operates.

Among these applications, there are the following highlights:

Start-up burners for a fluidised bed biomass boiler

These burners are used for starting up boilers of this kind and require a special design. We also make these types of burners with a retractable manifold system so that an air-lock trap system can be used to fully seal the equipment when the manifold is not in use and the boiler is operating.

Vertical burners for thermal oil boilers

These burners are used in thermal fluid boilers and require a special flame for their perfect adjustment to the boiler. They are mounted in a vertical position and operate with air temperatures of around 200 ºC. They are also low-emission devices.

Special applications

E&M Combustión, as an engineering firm specialising in the bespoke design of combustion equipment, places its technology at the customer’s disposal for its application in other kinds of processes requiring a burner. This includes incinerators, rotary sieves for asphalt plants, dryers, etc. We make our technology available to ensure the success of our customers’ industrial applications.

Burners for gas mixtures and gases with a high H2S content

E&M Combustión makes burners that operate with several types of gases at the same time. These include gases with a high H2S content, such as coke gases, and gases from the Claus process, etc.
Projects · Some References

- **2 boilers (25 T/hr) · 2 x JBD-20.000-G**
  - Diageo plant in USVI · USA

- **2 water-tube boilers (220 T/hr)**
  - 18 JBD-32.000-G burners
  - Electrical power plant in Jilin · China

- **Three JBD-11,500-G burners**
  - for water-tube biomass boilers
  - Martifer plant · Romania

- **Three 4.5 MW hot water boilers**
  - 3 JBM-6.000-G monoblock burners
  - Novgorov · Russia
Projects · Some References

- **Bonnysa factory · Spain**
  - Two 7 MW hot water boilers
  - 2 JBM-8.500-G monoblock burners

- **Repsol refinery · Tarragona · Spain**
  - Six JBD-50,000-GFO steam atomised burners for zone 1 with EEx D classified equipment
  - JBD-4.500-G monobloc burner

- **Wuxishi Liyalu Heat Energy · China**
  - Over one hundred JBD burners
  - Between 25 and 85 MW

- **Bosch & Siemens factory · Estella · Spain**
  - 4 MW hot water boiler
  - JBD-4.500-G monobloc burner
  - Bosch & Siemens factory

- **Fomesa Plant · Valencia · Spain**
  - JBD-14,500-G and JBD-20000-G burners for 14 MW / 20 MW natural gas dryers

- **Estella · Spain**
  - Two 7 MW hot water boilers
  - 2 JBM-8.500-G monoblock burners
Projects • Sectors

Petrochemical & Refinery
• Sabic • Petrochemical plant

Energy Generating
• Iberdrola • Combined Cycle
• Bookpoort • Solar Thermal plant

Food & Beverage
• La Casera / Schweppes • Processes
• Leche Celta • Processing plant

• Pemex • Gas processing
Projects • Sectors

Biomass
- Saipol
- Biomass boiler
- Gestamp
- Biomass plant

Others Industries

Sidenor • Steelworks
Guangzhou • Steam Process
Formica • Steam Process
**Services • Studies on Energy Saving**

**Energy saving and lower emissions**

Consistent with E&M Combustión’s remit to design increasingly more efficient equipment, we place ourselves at the customer’s disposal for conducting audits on how to save fuel at those plants with combustion equipment.

E&M Combustión performs studies on energy saving in order to assess the return on the investment made by installing more efficient burners, equipment for optimizing combustion, frequency adjusters for fans, etc. with no commitment on the customer’s part.

**Record a lower level of emissions**

In addition, we provide our customers with our Low NOx technology in order to overhaul and modify their combustion systems so as to record a lower level of emissions, as social awareness of the need to protect and preserve the environment has now become an unavoidable challenge.

**Training and advising**

We provide our customers with specific advice through our technicians in the field who understand each project’s requirements, and then we deliver a payment plan for the equipment that in most cases tends to come as a very pleasant surprise.
In more than 30 countries

With a view to reinforcing the technical service and providing customers with better care, in 2012 E&M Combustión created a specific department to cater for the entire process, from the commissioning of the equipment made by the company, through to the maintenance, repair and replacement and supply of spares for on-site equipment.

Saudi Arabia, Mexico, Romania, USA, Poland… these are just some of the countries in which the E&M Combustión technical service has been deployed in recent months in order to ensure the proper operations of several plants throughout the world.

Experience in all kinds of facilities

Based on experience accumulated over fourteen years in this sector, we provide a service for facilities in renewable energies, steel, petrochemicals, food and beverages, pharmaceuticals and the car industry.

Scheduled maintenance

Seen as a key process for keeping plants operational and fine-tuning their performance, the proper running of many facilities also requires a regular review and inspection of their equipment.

Energy saving

We also conduct audits on energy saving, which enable us to replace existing burners with new generation electronic models, with low NOx, fitted with frequency adjusters, O2 and CO probes and touch-screen for interfacing with the plant’s DCS. The payment plan for customers is a pleasant surprise.
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