Get in touch

Visit us in Rochdale to see our vertically integrated manufacturing facilities. We manufacture burners, control panels, boosters and package plant rooms on site.

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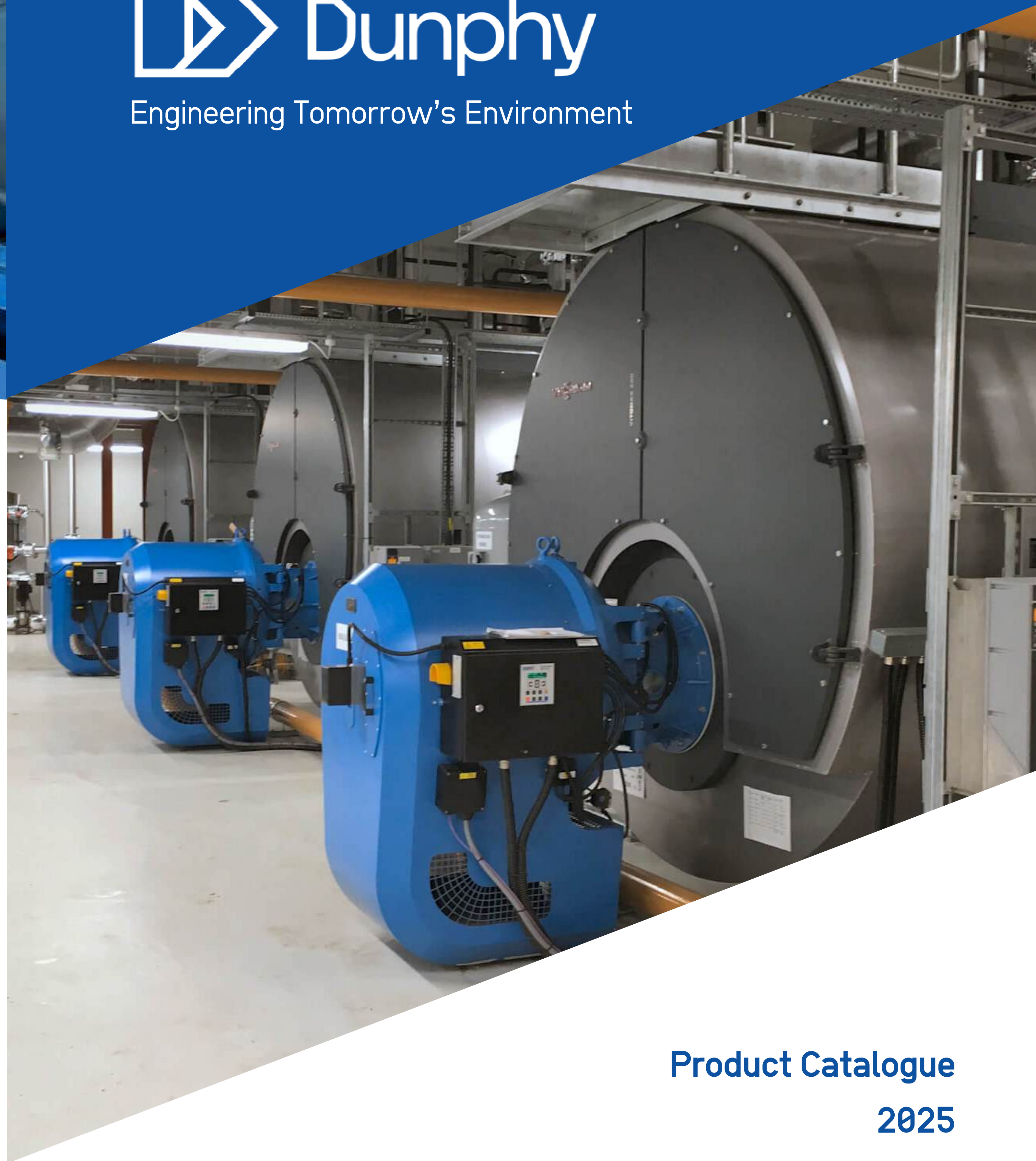
Dunphy

Engineering Tomorrow's Environment



Product Catalogue 2025

Burners | Plant rooms | Control systems | Gas boosters

- Hydrogen Ready
- Ultra Low NOx
- High Energy Efficiency
- Made in Britain

The home of efficient combustion

Founded in 1964 by Malcolm Dunphy, we are a UK-based manufacturer specialising in burners, plant rooms, control systems, and boosters for heat and steam generation.

With over 60 years of experience, our focus remains on delivering high-quality, energy-efficient equipment designed to meet the evolving needs of our customers.

Contents

Burner Range

Suitable for use on all types of heat, steam and incineration boilers, furnaces and for process applications from 100kW to 80MW

Since Malcolm Dunphy patented the first axial airflow burner in 1971, Dunphy have been world leaders in energy efficient combustion technology. Our range of burners offer high efficiency, low emission solutions to any industrial application.

T-series axial airflow burners are our monobloc burners designed for single or multi fuel use with all liquid and gaseous fuels and are suitable for applications between 100kW and 14MW.

With an in-house electrical and mechanical design department, we can provide a solution to any industrial application. These solutions can include sluice, start-up and auxiliary burners.

Bespoke **B series** burners are our duobloc burners designed for a wide range of high output applications up to 68MW.

Achieve maximum efficiency with a turndown of up to 10:1

Hydrogen ready

We are the first burner manufacturer in Europe to be UKCA and CE certified for a range of hydrogen burners.

Low NOx head

All T series burners are fitted with low NOx combustion heads as standard.

Turndown ratio

Burners can achieve up to 10:1 turndown ratio on gas, 4:1 on oil and 8:1 on oil fired steam/ air atomisation.

Digital modulation

Digital modulation is fitted as a standard, providing high accuracy of control.

ATEX approved

Our mechanical and electrical designs can be built to meet ATEX requirements (Zone 1 and Zone 2).

Low noise

The axial airflow design allows us to encapsulate the motor and fan within the casting, resulting in reduced noise.

Dunphy burners are available with a wide range of fuels making them highly flexible and suitable for many applications

- Hydrogen
- Biogas
- Natural Gas
- Liquid gas (LPG, LNG)
- Fuel Oil, Diesel, HFO's
- Towns Gas
- Producer Gases

T Series Burners

Dunphy's T Series burners are our monobloc burners based on an axial airflow design originally patented by Malcolm Dunphy in 1971. Our unique design has the motor located within the air flow, offering 100% heat recovery from the motor and excellent acoustic attenuation.

Summary Specification Data

Burner Type	Firing rate (kW)	
	Min	Max
T02.12	25	140
T02.26	25	250
T03.34	35	340
T03.45	45	450
T04.65	65	650
T05.100	110	1100
T2.100	100	1000
T2.115	115	1150
T2.155	155	1550
T3.200	200	2000
T3.220	220	2200
T3.290	295	2950
T4.450	450	4500
T4.550	550	5500
T4.650	650	6500
T5.800	500	8500
T5.1000	750	10500
T6.1200	1200	12000
T6.1400	1400	14000

B Series Burners

Our B Series burners are out duobloc burners comprise a separate fan and motor, and are the standard design on burners above 13MW or bespoke applications above 60kW ranging all the way up to 68MW. They are typically used for preheated air, incineration, ducted air, foul air and sluice gate utility burners.

We have a number of B series burner models to meet operational and emission levels

HL Models provide simple 2 stage high low control where only basic controls are required.

MP Models are air/fuel ratio control via an air lead ratio valve providing 4:1 turndown ratio.

ME Models provide air/fuel ratio via electronically controlled servo motors. Accurate control provides excellent combustion efficiency and turn down ratio of 6:1 .

SC Models allow any of the other models to be supplied with VSD control to increase turn down.

Process Burners

Dunphy process burners are designed to handle demanding industrial environments, from incineration and hazardous waste disposal to chemical and petrochemical refining.

They excel in high-temperature or pre-heated air applications, providing precise combustion control for processes such as fluidised operations, kilns, and thermal treatment systems. By tailoring each burner to the specific fuel, temperature range, and emission requirements, Dunphy ensures reliable, efficient, and compliant performance for virtually any industrial process.

Hydrogen burners

Dunphy's UKCA and CE rated hydrogen burners are effective across the full burner range, from 100kW to 68MW and can burn 100% hydrogen and any blend of hydrogen and natural gas, including admix (80% natural gas and 20% hydrogen)

Leading the industry with hydrogen

UKCA and CE certified

The first burner manufacturer in Europe with full UKCA and CE certified.

NOx mitigation

NOx levels can be mitigated down to 50mg with the addition of flue gas recirculation.

Zero carbon emissions

Burning 100% hydrogen will result in zero carbon emissions, helping to minimise scope 1 emissions.

Trail blazing

In 2022, we were the first manufacturer to run a consumer goods plant for 8 weeks entirely on 100% hydrogen.

Proud history

We installed our first hydrogen burner at Malay Sino in Malaysia in 1998.

Versatile fuel mix

Able to fire hydrogen and natural gas independently and simultaneously in varying quantities from 0-100% with both fuels

Recent successes

In September 2024 a Global Food Manufacturer ran one of their drying processes on 100% hydrogen for over 4 weeks using Dunphy dual fuel natural gas-hydrogen burners

Package plant room solutions

Dunphy specialise in off-site manufactured solutions that provide flexibility for customers with unique needs. Each design is tailor made to match the characteristics of individual site availability, fossil and biofuel feeds and the specified generation process (steam, hot water, heat treatment, CHP).

Tailor made solutions

With design engineering teams and a full manufacturing facility, we can offer any solution that you require.

Highly flexible

Our ability to build off site, transport easily and install the solution reduces any project dependencies.

Unlimited scalability

There is no limit to the size of your solution, we have the capacity at our facilities to construct to any plant room requirements.

Complete reporting

We prepare all FDS reports, DSEAR analyses and SIL assessments.

High degree of safety

We are ISO 45001 accredited and SafeContractor approved with a keen focus on health and safety.

Proven track record

We were first to market with these solutions and have been producing them for 15 years.

From design through to commission, Dunphy manages the whole process, offering a complete end to end solution

Design

Our Engineering Design team will work alongside you to design a solution that meets your requirements

Manufacture

At our manufacturing site in Rochdale, we will construct your modularised solution

Test

We will complete a full Factory Acceptance Test in Rochdale, where you will be invited to see the solution's performance

Deliver

The modularised build allows the solution to be picked up and transported easily to site

Install

Once at site, our team will support with the full installation of your kit to the required location on site

Commission

Once installed our engineering team will commission the solution before it is ready to go.

We have 3 types of plant room solution

1. Modularised Plant Rooms

Our pre fabricated boiler houses offer complete flexibility to meet specific design requirements for your energy centres. Suitable for a new plant, or for a complete boiler house redesign and unlimited in size or scale of solution. Our modules will be transported and installed on your site at your desired location.

Andrew Bowen, Skanska:

"The hard work and dedication that went into this off-site manufacture was truly remarkable. It required meticulous planning, precision engineering, and innovative design to create high-quality products in a controlled environment. A master class in off-site manufacture."

2. Skid Mounted Energy Centres

Skid mounted energy centres are plantrooms which are built on skids in a modular fashion to enable the quick and easy disconnection and reconnection on site. This design allows the plantroom build to be broken down into sizeable chunks that can then be installed into an existing building on site. This approach ensures a swift reconnection time on site. They are fully customisable to suit your individual needs.

3. Energy Centre Installations

Our energy centre installations provide all of the benefits of off-site manufacture, whilst ensuring that you get a solution that is specifically tailored to your needs and accounts for any space constraints that may prevent an alternative approach.

They are fully designed and manufactured at our facility and then broken down into their constituent parts and fully rebuilt on site in your space. This rapidly increases the on-site build time over traditional methods whilst still providing the same level of bespoke service.

Control Systems

Dunphy are leaders in the supply of boiler house control systems. We can control any equipment within the boiler house, making use of the latest automation technology and an array of established PLC manufacturers to provide customers with a bespoke to solution to cover any requirements.

We have 4 types of boiler house control system

Burner control

Responsible for controlling the ratio of fuel to air, these are the most important systems in the boiler house. Essential for cost savings, reducing emissions, providing burner feedback and controlling variable speed drives.

Boiler control

Get a single point of reference for all boiler related components using either lamps and switches or a touchscreen HMI for indication and control. We offer control panels than can incorporate any of today's common controllers.

Boiler sequencing

Boiler sequencing panels enable maximum control of operations within the boiler house. Using this system ensures that boilers are fired in a controlled manner, providing cost savings through preventing individual boilers from over-firing and cycling on and off unnecessarily.

Remote monitoring

The Delta System allows you to monitor and control one or more burners or boilers within the boiler house. We can provide updates, diagnostics and allow you to remotely monitor performance away from the boiler house, including with SMS/ email alerts of alarm conditions.

How do the systems fit together?

Boiler sequencing

Provides complete oversight and control over boiler house operations at any level

Burner control

Control burner output and performance - we offer 3 systems:

- Ratiotronic 6000
- Lamtec CMS
- Siemens LMV

Boiler control

Control boiler output and performance - we offer 2 tiers:

System 4000

Provides comprehensive detail and control over boiler performance without a touchscreen

System 5000

Our most advanced solution with the highest level of control. Everything available digitally.

DunphyDelta

Remote monitoring solution providing updates and diagnostics of everything going on in the boiler house from afar, including SMS notifications of burner lock outs.

Can be used in conjunction with any combination of burner controls, boiler controls and boiler sequencing.

Gas Boosters

Dunphy's gas boosters provide a pressure uplift for sites where the required pressure of a gas appliance is higher than the available pressure from the gas main

Our gas boosters have been designed to increase gas pressure efficiently and reliably, with a pressure lift of up to 82mBar and volumes up to 1300m³/h.

Maximum Safety

The cast iron construction offers maximum safety, delivering strong durability and reliability for a range of uses.

Bypass systems

Bypass loop arrangements can be accommodated for low flow (high turndown applications).

Fuel variation

Variations can be made to accommodate other fuels such as biogas and towns gas.

Automatic change

Automatic change over from duty to stand-by every 7 days, allowing each booster an equal annual running time.

Monitored gas supply

Monitored gas supply using an outlet pressure switch, preventing the burner from being fired should the booster fail.

Soft start

Soft start options are available through Variable Speed Drives, which allow a ramp up time from 0-999 seconds.

We have 3 gas booster variations

Simplex

The simplex booster has been designed for essential applications and consists of a single unit that can be easily skid mounted.

Duplex

The duplex booster has been designed for situations where there is a requirement for duty standby or duty assist operation ensuring customers have a redundancy in the system.

Triplex

The triplex booster is designed for more complex requirements, such as duty/assist/standby. A triplex booster comprises 3 boosters, mounted on a skid and supplied with a control panel.

There are several small yet important differences between the systems, making it essential to choose the one that best fits your needs:

Functionality	Simplex	Duplex	Triplex
Variable speed drive	✓	✓	✓
ATEX versions available	✓	✓	✓
SCADA/BMS integration available	✓	✓	✓
User friendly interface supplied with the control panel	✓	✓	✓
Boosters are pre-assembled and mounted on a skid, complete with an already configured control panel.	✓	✓	✓
Horizontal or vertical configurations available	✗	✓	✓
Duty standby and duty assist operation	✗	✓	✓
Zelio switch-over system from booster 1 to booster 2 and vice-versa	✗	✓	✓
Allocation of two boosters running simultaneously	✗	✗	✓

Service

We have a UK wide team of service engineers that can handle anything from breakdowns and burner upgrades to full install and commissioning projects.

Training

All companies that deal with steam have a responsibility to ensure their staff are trained on how to safely and effectively operate the relevant systems. With over 60 years' experience in the combustion industry, we provide the highest level of training delivered by experts in the field. It can be delivered either on customer sites or at our Technology and Training Centre, located within our main factory in Rochdale.

Steam Training

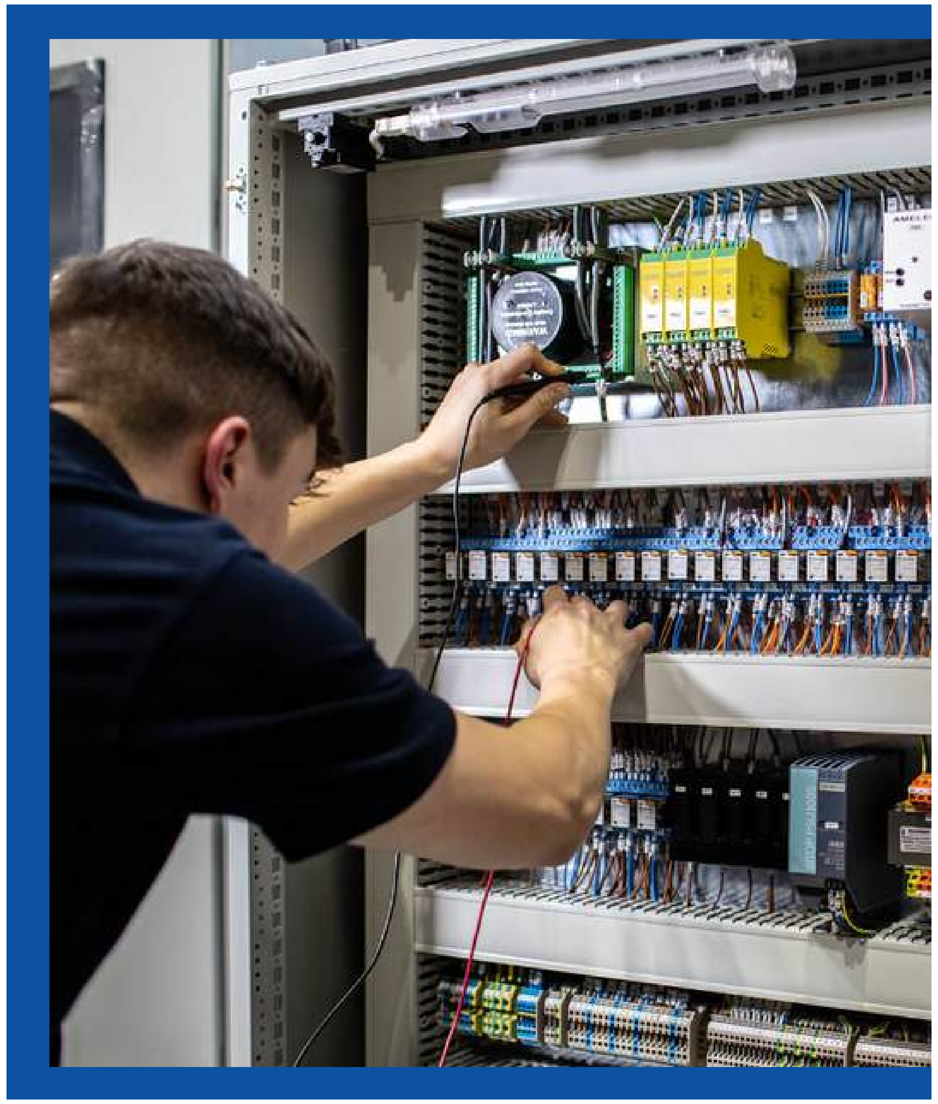
The objectives of the course are to ensure that participants understand the basics of steam, can identify hazards and know how to operate steam systems according to Health and Safety guidelines.

It also provides opportunities for participants to practice their new skills with a range of interactive exercises.

Boiler Operator Awareness Training (BOAS)

Two qualifications are available, the Cert.IBO (Certified Industrial Boiler Operator) and the Dip.BOM (Diploma in Boiler Plant Management).

Candidates must have a minimum of six months and 100 hours of verified practical boiler plant operation before taking the Dunphy BOAS course and assessments.



Spares

We offer worldwide distribution and delivery delivery on over 10,000 spare parts.

Customer success stories

Customers from across all industries have seen significant benefits through installing Dunphy

Hydrogen firing at a food manufacturer

A food manufacturer ran one of their drying processes on 100% hydrogen for 4 weeks in August and September 2024.

Solution: We provided 2 TDG2 hydrogen ready burners with digital modulation allowing them to fire any combination of hydrogen and natural gas from 0-100% both independently and simultaneously

Additional benefits:

- Zero carbon production process supporting reduction in scope 1 and 2 emissions

Off site manufacture at WWT facility

We provided an off site manufactured fully modularised package plant room to generate steam for a Thermal Hydrolysis plant.

Solution: 2 composite boilers generating 4 tonnes for heat from fired side and 1 tonne of waste heat from CHP engine, with the flexibility to use biogas or natural gas or diesel.

Additional benefits:

- Biogas emissions at <55mg/m3 @ 3% Oxygen
- Natural gas emissions at <85mg/m3 @ 3% Oxygen
- Plant life expectancy of > 30 years.

Energy centre installation at UK hospital

The site needed to generate additional steam capacity, but didn't have space for an additional boiler within their existing boiler house

Solution: We provided a fully modularised plant room with a 8000 kg/hr steam boiler and a TDG 5.800 burner with a low NOx head, built off site at our plant in Rochdale.

Additional benefits:

- A reduction in NOx levels to ~70mg/Nm^3 on gas
- Ultra low excess oxygen levels of <2% with O_2 trim
- 10:1 turn down on gas

Reburnering at chemical plant

The burners on site were running with high excess oxygen levels resulting in poor boiler efficiency and were exceeding the emissions requirement of <100mg/Nm^3 on gas and <200mg/Nm^3 on oil.

Solution: We provided 2 TD5.800 burners with digital modulation and a system 5000 boiler control system

Additional benefits:

- A reduction in NOx levels to ~70mg/Nm^3 on gas
- Ultra low excess oxygen levels of <2% with O_2 trim
- 10:1 turn down on gas

Reburnering for biogas at a brewery

The site generates biogas from an effluent treatment plant which is insufficient to maintain full rated output of the system.

Solution: We used natural gas as a base fuel to supplement the available biogas and provided 6 TDG5 burners with digital modulation, simultaneous firing software and boiler control panels.

Additional benefits:

- Utilising biogas that would have otherwise been flared saving £35k per year on this alone
- Total savings of more than 11% per year
- Sequence control to efficiently manage the steam load

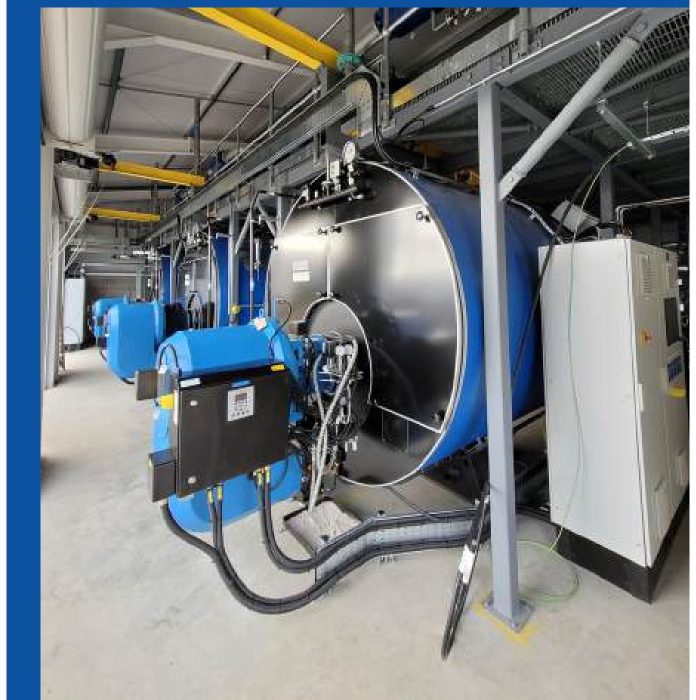
Off site manufacture for UK hospital

The hospital's existing plant room for servicing their laundry was outdated, and as part of a wider redevelopment they constructed a new plant room away from the main building

Solution: We delivered a plant room to fit this space, following our 6 stage design to install process. The solution contained three 4.5 t/hr steam boilers and 3 T2 burners with full digital modulation.

Additional benefits:

- High turndown on oil at 8:1
- NOx levels less than 200mg/Nm^3, meeting the requirements of the Medium Combustion Plant Directive
- Insight, our advanced touchscreen sequencing system, allowing all three boilers to be centrally controlled



Sustainability and Innovation

Dunphy sits at the forefront of industry innovation and continues to develop the next generation of energy efficient solutions.

UKCA & CE certified for hydrogen

We are the first burner manufacturer in Europe with UKCA and CE certification for the use of hydrogen as a fuel

Deploying hydrogen within industry

This year we have run multiple plants for several weeks on 100% hydrogen - helping to prove its viability

Simultaneous firing of fuels

Born out of our onsite R&D lab, our burners can fire any blend of biofuels, fossil fuels and hydrogen

Low NOx head

As previous winners of the Queen's Award for our Ultra Low NOx Burner head, we lead the industry in low emissions