Bosch Commercial and Industrial Heating
Solutions for district heating
Cutting-edge heating and hot water solutions from a global provider

When you choose Bosch as a supplier for your heating and hot water solutions, you can be assured of cutting-edge technologies from a global provider. True to our company slogan “Invented for life”, our products and solutions are designed with our customers in mind. As a leading global supplier of heating and hot water technology and services, Bosch understands that district and centralised housing professionals need to be able to rely on their industry partners for technical expertise and innovative thinking at all times.

The Bosch Group at a glance
The Bosch Group is a leading global supplier of technologies and services, active in the fields of automotive technology, industrial technology, consumer goods, and energy and building technology. The Bosch Group has more than 306,000 associates who generate sales of over £45 billion a year. The Bosch Group comprises of Robert Bosch GmbH and has more than 350 subsidiaries and regional companies in some 60 countries. When sales and service partners are included, Bosch is represented in 150 countries worldwide. Our global development, manufacturing, and sales network is the foundation for further growth. Bosch spends around £3.5 billion on research and development each year, and applying for thousands of patents worldwide. The Bosch Group’s products and services are designed to be both innovative and beneficial, offering technology worldwide that is “Invented for life”.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as a "Workshop for Precision Mechanics and Electrical Engineering".
The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation, while the majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust, while the remaining shares are held by the Bosch family and by Robert Bosch GmbH.

**The Bosch Group: leading global supplier of technology and solutions**

Bosch offers a comprehensive range of heating and hot water solutions for district and centralised housing schemes across the world. Whether the project requires energy-efficient heating and hot water systems, innovative and intuitive CCTV systems, or the hard-wearing power tools needed to complete a professional installation, Bosch has a choice of products that are commonplace across many sports and leisure facility projects.

**Bosch products and solutions**

Bosch offers a wide range of products and solutions to effectively manage operations.

- A range of heating solutions can be provided across all district and centralised housing schemes, in addition to hot water for bathroom, showers and kitchens
- Energy consumption can be monitored effectively, helping to reduce energy costs
- All safety, security, and communications solutions can be integrated in one facility management system
- All areas and activities can be efficiently monitored, allowing emergencies, fires, and threats to be detected immediately.
District Heating
Energy-efficient solutions for heating and hot water

District heating networks served by centralised heating plant are the ideal solution for energy-efficient heating and hot water systems serving multi-residential buildings. Bosch Commercial and Industrial Heating offers complete systems from 65kW to 38,000kW.

What is district heating?
District heating networks utilise high-efficiency centralised heating plant to deliver low carbon heating and hot water through a network of pipes serving individual spaces, such as apartments. Within each space is an interface unit that controls the distribution of the hot water, via heat exchangers, to heat emitters and hot water outlets. For high-rise buildings, the plant room can be housed in a rooftop container.

A key benefit for building operators and facilities managers is that maintenance of the heating plant can be carried out without needing to access each apartment. Also, all gas installations are in a central location and there is no requirement for flues throughout the building. Heat usage within each apartment can be metered individually at the interface units.

Government-backed solution
District heating is at the heart of the Government’s Heat Strategy, which seeks to ensure affordable, secure, low carbon heating plays an important role in the nation’s energy mix. Considerable finances have been made available to support heat network schemes and a new Heat Networks Delivery Unit has been set up within DECC to provide expert advice.
Comprehensive solutions from Bosch
Bosch’s extensive product portfolio encompasses the vast majority of requirements for district heating networks, including:

- Combined Heat and Power (CHP) modules with outputs ranging from 12kWe to 400kWe
- High-efficiency gas or oil-fired boilers with outputs from 65kW to 38,000kW
- Compact cascade systems comprising multiple wall-mounted boilers, enabling 400kW heating capacity to be housed in 1m³
- Heat distribution units (HDU) for enhanced control in each space
- Compact multi-water heater cascade systems up to 600kW
- Gas absorption heat pumps, also available in cascade configurations
- Solar thermal heating systems
- Comprehensive range of intelligent controls.

Integrating renewables
A major advantage of using centralised heating plant is the opportunity to use renewable and low carbon technologies such as Combined Heat and Power (CHP), solar thermal, heat pumps and condensing boilers, fully integrated for optimum performance.

This combination of conventional heating systems with renewable technology offers enormous advantages to developers, helping to meet local planning requirements and improve SAP ratings.

The perfect partnership
To achieve optimum efficiency in district heating systems, each Bosch solution is tailored to meet specific requirements, using modular components to ensure simple planning, installation and commissioning. For both small and large-scale projects, Bosch provides professional support through every phase of the project – from consultancy to project delivery, commissioning and ongoing plant operation. With Bosch as your partner you are assured of a district heating system that will deliver efficient, reliable performance throughout its life.
Small to medium sized district heating solution

Key
- Flow
- Return
- Mains cold water
- Hot water to outlets
Bosch small scale district heating solutions are particularly suitable for flats and other multi-residential accommodation, as well as buildings that use inefficient electric heating or have individual gas appliances in each property. A centralised heating concept allows investors to take full advantage of a low carbon heat source or a modular/hybrid configuration with high efficiency condensing boilers. Located within a centralised plant room, or supplied complete and fully commissioned in a portable unit, Bosch can provide a solution to tailor meet any requirement.

**Future proof**
This innovative network heating provision provides tenants with greater heating and hot water reliability while also improving the overall efficiency of the building. District heating schemes can increase the value of the building and allow investors the ability to introduce additional low carbon heat sources in the future.

**Flexible solution**
The heart of the district heating solution is the interface to the end user which is provided by the Bosch Heat Distribution Units (HDU). Our HDUs provide domestic hot water and space heating to individual properties and are fully compatible with our entire product range. This allows each resident to have greater control and metering, while also accommodating for their individual requirements (e.g. fuel poverty).

The HDUs connect onto a district heating network supplied from a central plant room. Therefore they do not require flue or ventilation routes within each property, meaning they are simple to integrate into a building and, because it comes supplied with a first fix rail that allows the unit to be pre-plumbed before it is on the wall, they are quick and easy to install.

**Benefits to investors**
- Improved energy efficiency
- Reduced carbon emissions
- Enhanced Legionella prevention
- Flexibility to introduce additional low carbon heat sources in the future
- Greater reliability through use of multiple heat sources
- Increased value of building(s).

**Benefits to contractors**
- Avoids engineering issues such as flue and ventilation routes
- Easier access to plant for routine and reactive maintenance
- Single source for most plant and components
- Single source for service package and training
- Avoids difficulties accessing individual properties.

**Benefits to end users**
- Individual control and accurate metering
- Reduced energy bills
- Familiar controls for ease of use
- Allows management of individual occupancy requirements (e.g. fuel poverty)
- Improved safety within apartments as gas supply is only to plant room
- Minimal disruption during installation.
Small to medium sized solution: Charter Brook House

With fuel costs at an all-time high, it is now more important than ever before to ensure a heating and hot water system is operating to its full potential. Charter Brook House, a retirement sheltered housing accommodation in Blackburn, was seeing its electricity costs spiral out of control due to an ineffective and ageing heating system.

The project
Traditionally, Charter Brook House has heated each of its 49 flats through the use of electric storage heaters. While storage heaters do have their advantages, such as minimal maintenance requirements and the flexibility of being able to be sited in areas where natural gas distribution systems are not available, in the circumstance of Charter Brook House, the disadvantages far outweighed the advantages.

The biggest disadvantage to the residents was that the storage heaters could only heat with energy stored from the previous night. Consequently, if the system was switched off, or if the charge control was set too low, there may not have been sufficient energy to heat the rooms, and this could only be corrected the following day. This proved a problem when the weather turned cold unexpectedly. Some heaters alleviate this problem by allowing heating during the day, but this is typically expensive because the electricity is charged at full rate. Even under the best of circumstances it can be difficult to accurately judge how to set the thermostats.

For example, setting them too low overnight can cause the heater to be having no perceived effect, while setting them at maximum will increase their running costs.

With this in mind, Charter Brook House decided this was the opportune time to overhaul the existing heating system with one which would prove more energy and cost efficient.

After our technical department carried out an initial feasibility study, it was felt the best solution for Charter Brook House’s operational performance was to install a communal renewables-based district heating system. Through the use of our Heat Distribution Units (HDUs), each end user could have access to on-demand heating and hot water, meeting their individual requirements. The decision was also taken to incorporate solar thermal technology, which not only enhances potential cost savings and energy efficiencies, but can also allow each HDU module to operate at a reduced flow temperature, allowing the renewable element to have an increased effect.

Products supplied by Bosch:
- 2 x 100kW GB 162
- 16 x Solar Thermal collectors
- 49 x Heat Distribution Units.
The solution

Working with Concept Heating, who were commissioned to design and install two centralised plant rooms, each consisting of two 100 kW GB162 condensing boilers and 16 solar thermal collectors. The pair of centralised plant rooms was accompanied by HDU modules fitted in each of the 49 properties.

Paul Flanagan, UK Sales Manager for the North, said of the installation: “Whilst one of the most effective ways for a housing association to reduce long term expenditure is to invest in a new heating and hot water system, replacing one which is more than 10-15 years old, it should not be assumed that like-for-like replacements are the best option.”

Rising energy costs remain a large concern for housing associations which accommodate the elderly. Solar thermal installations represent a worthwhile investment and highlight how simply the collectors can help achieve savings in both fuel costs and carbon emissions, which offer payback through reduced demand from the boilers.

“The utilisation of renewable heating technologies, that work in conjunction with a condensing boiler system to maximise efficiency, are becoming a more effective solution for social housing applications.”

Paul Flanagan,
UK Sales Manager – North
Bosch large scale district heating solutions are ideal for both new and existing multi-purpose and multi-residential buildings as well as large estates that include commercial units. A large scale district heating system introduces heat from a centralised plant room and can utilise a range of heat sources including renewables, combined heat and power (CHP), biomass and waste heat transfer in modular/hybrid configurations.

**Improved efficiency and reliability**
Hot water is distributed through a network of insulated pipework, with flows optimised in relation to the different property types being served. Such a network improves energy efficiency in each property type, reducing carbon emissions in the estate/area and with the use of intelligent controls allows a fast response to the different demands. Large scale district heating schemes can be adapted and distributed to meet the bespoke needs of each facility, meaning no property is left with insufficient heating or hot water.

**Complete support from Bosch**
With initial consultation, system design and product introductory training for investors and consultants, to hands on product training with contractors and a complete handover service with both the contractor and end user, Bosch makes sure every stakeholder is completely satisfied from the outset.

From when it was established in 1886, first class after-sales service has been embedded within Bosch’s philosophy and because of this we ensure the quickest and most comprehensive support in the industry.

**Benefits to investors**
- Ability to interlink with other estates/networks
- Reduced carbon emissions
- Ability to introduce additional low carbon heat sources in the future
- Facilitates compliance with Building Regulations and Local Authority planning regulations
- Future proof properties.

**Benefits to contractors**
- Avoids difficulties of accessing individual buildings
- Single source for most plant and components
- Single source for service package and training.

**Benefits to end users**
- Sophisticated controls that allow fast response to changing heat loads
- Greater reliability of energy supply
- Improved energy efficiency for each property type
- Reduced energy bills
- Supports sustainability commitments
- Allows management of individual occupancy requirements.
Large sized solution: Lancashire Hill

A Greater Manchester social housing provider has offered residents of a Stockport development the ultimate in fuel efficient heating having invested in a green district heating system.

The project

Stockport Homes Ltd, the organisation which manages all housing owned by Stockport Metropolitan Borough Council, saw the Renewable Heat Incentive (RHI) as the ideal opportunity to overhaul the existing heating system at its Lancashire Hill development, which comprises of 488 flats and maisonettes.

Having found access to spare parts for the previous 35 year old gas-fired boiler system increasingly limited, Stockport Homes opted to explore a more cost-effective way of heating the residential properties and provide a low-carbon alternative to the inefficient 1.4MW system.

The solution

An initial feasibility study carried out by the Carbon Trust and NPS Group Ltd. led to the design and specification of a renewables-based heating system.

Bosch Commercial and Industrial Heating, in association with civil contractor, William Pye Ltd and installer, CPL Ltd were commissioned to supply and install three 1,350kW steel hot water condensing boilers to support a Froling Lambdamat 1MW wood chip boiler, provided by leading biomass provider, Econergy. The biomass boiler uses a walking floor arrangement to extract the wood chip from the fuel store into the boiler. The complete installation is housed in the development’s central plant room, from which heating and hot water for the residents is supplied.

Products supplied by Bosch:
- 3 x 1350kW steel hot water boilers
The installation operates by using the Froling biomass boiler to cater for the heating demand of residents. The 4MW boiler installation is then on hand to supplement the heating provision when demand from residents is at its peak — particularly during the winter months.

The additional benefit of the dual-fuel district heating system in the Lancashire Hill plant room is that the stainless steel condensing boilers are automatically called into action in the unlikely event that the biomass supply either runs out or is inaccessible for any reason. This infrastructure acts as a safeguard for the lead heat source and guarantees no periods of downtime for the residents’ heating.

The steel hot water boiler utilises three pass technology and effective design of the heating system to provide the best conditions for low emissions and high efficiency. Effective operation is ensured thanks to optimal control of water flow in the boiler and the boiler modulation. The flue gas temperatures in the condensing heat exchanger are also only marginally higher than the return temperature, giving the best level of condensing performance for further efficiency enhancements.

Customer feedback
Joe Keating, Stockport Homes’ Environmental and Energy Manager said: “We are always looking at ways we can reduce our customers’ energy use and help them to save money on their home energy fuel bills to create ‘greener’ places to live. By installing three condensing boilers alongside a wood chip boiler, we have been able to significantly improve the heating efficiency for residents. With the RHI already active for this type of commercial heating system, we are also hopeful that the installation will allow us to benefit from a significant level of government funding, which we can then reinvest in future low carbon measures for our customers’ homes.”

Paul Flanagan, UK Sales Manager for the North commented: "Whilst many social housing management organisations are looking at renewable technologies with one eye on the RHI, condensing boilers still have an important role to play in ensuring sufficient support is in place. This kind of ‘hybrid’ system ensures that the heating and hot water needs of the residents will always be met, even in the unlikely event that the renewable source should fail."
GB162 gas-fired condensing boilers

The GB162 is an extremely versatile and compact wall hung condensing boiler that can be installed on its own or as part of a multi-boiler ‘cascade’ system. The boiler is available with individual outputs of 65, 80 and 100kW; outputs of up to 800kW can be achieved when multiple units are connected as part of a cascade installation.

Features and benefits at a glance:

- Condensing technology with up to 110% net efficiency
- Modulation to just 20% of total output*
- Cascade outputs up to 800kW per frame kit
- Extremely compact cascades (400kW in just 1m²)
- Award winning ALU-Plus heat exchanger
- Integrates with solar thermal installations
- Whisper quiet operation
- Intuitive user controls
- LPG conversion allows for off mains locations

* Depending on model

Precise energy management

Each boiler in the GB162 series can automatically modulate its output down to 25% or less in order to precisely match the demand for heat. This considerably reduces fuel consumption and improves overall seasonal efficiency.

High efficiency, low emissions

The GB162 provides net efficiencies of up to 110% (NCV) with ultra low class 5 levels of CO₂ and NOx emissions. Its compact dimensions make it especially suitable for installations where space is restricted, but demand for a modern high output heating solution is high.

Tax relief with the Carbon Trust

All GB162 boilers are registered on the Carbon Trust’s ECA scheme (Enhanced Capital Allowance). This will enable businesses to claim 100% of the first year capital allowance on investments in energy saving technology.
Heat Distribution Unit

The Heat Distribution Unit (HDU) provides domestic hot water and space heating to properties that are serviced from a district heating system or a centralised boiler plant. The HDU comprises of two heat exchangers, one for providing instant domestic hot water at a regulated temperature and the second for space heating within the property.

Distributing heat from a centralised plant room

The unit is indirect so the primary heating circuit is hydraulically separated from the property space heating by a plate heat exchanger and operates only when DHW or space heating is required ensuring energy efficient operation.

The HDU also comes complete with a first fix rail which allows for the system to be pre-plumbed before the unit is installed. The unit is available in two versions, with or without a heat meter.

How a HDU works

If a hot water tap is opened the pressure temperature control valve senses the difference in pressure and opens, allowing the primary heating water to flow through the heat exchanger. At the same time, a hot water priority valve closes the primary feed to the secondary heat exchanger, thus ensuring maximum temperature is available at the domestic heat exchanger. The cold water flows through the DHW heat exchanger and is heated up instantly.

The temperature of the domestic hot water is controlled by a thermostat*. Using a sensor, this thermostat controls the temperature of the domestic hot water that exits the heat exchanger by regulating the primary flow through the DHW heat exchanger via the priority valve.

When in stand-by mode with no demand for space heating the summer bypass valve controls the bypass flow in the primary circuit. Thus heating water from the primary circuit is immediately available at the heat exchanger ensuring instant supply of DHW.

Features and benefits at a glance:

- Domestic hot water (DHW) and central heating (CH) on demand
- Priority DHW valve – prioritises the temperature at the DHW heat exchanger
- Thermostatic temperature control
- Pressure temperature control valve – allows the DHW heat exchanger to operate on demand only, saving energy
- Low return temperature in the primary circuit
- Modulating space heating pump
- Minimal installation space required
- First fix rail allows installation options†
- Supplied with or without heat meter
- Summer bypass valves ensures instant DHW draw off without wasting thermal energy.

*Preset to 50°C. Please be aware that the actual outlet temperature on the HDU is subject to some fluctuation.
†The first fix rail can be removed from the end of the carton via a perforated flap so that it can be fitted without having to remove the rest of the appliance from the packaging. This reduces the risk of damage to the rest of the appliance whilst the system is being commissioned. The remainder of the appliance remains in the packaging and can be stored safely until needed.
GHP AWO 38 Gas absorption heat pump

Bosch GHP AWO 38 low-carbon gas absorption heat pumps deliver highly efficient, renewable heating solutions for commercial applications. It is an optimal choice for both new and existing buildings as both a stand alone solution or combined with a conventional boiler.

Features and benefits at a glance:
- High efficiencies of up to 164% (NCV) at A7W35
- Suitable for outdoor installation
- Reduced fuel costs due to high efficiency and use of renewable energy
- Low maintenance requirements
- Fast return on investment
- Zero GWP and low NOx operation provides BREEAM credits
- Improved Building Energy Certificate rating
- No requirement for a chimney as flues are included
- Reduced requirements to purchase carbon allowances for those organisations participating in the CRC EES.

Low carbon solution
The gas absorption heat pump draws energy from the air using heat pump technology and a highly-efficient, low NOx, gas condensing heat generator. By using gas as the primary energy source directly at the point of use, rather than electricity which is generated largely in coal or gas-fired power stations, the gas absorption heat pump has a significantly smaller carbon footprint.

Gas absorption heat pumps also cut running costs because gas is typically only a third of the price of electricity and the heat pump provides up to 65% additional heat by drawing in free energy from the surrounding air.

As such, they also deliver reduced energy consumption and carbon emissions compared to conventional methods of providing heat to buildings.

Multiple heat pump cascade systems
For higher heating demands, the GHP AWO 38 can be supplied in a factory-assembled, rig-mounted multi-heat pump cascade system, pre-configured with flow, return and gas manifold. Each unit has its own modulating primary circulation pump to provide optimum flow rates and efficient operation.

Connected in-line, cascades provide outputs up to 205.5kW for five units, and larger cascade systems are available if required. It is also possible to combine multiple cascades to achieve even higher outputs.
Evacuated tube and flat plate collectors

Capturing and utilising solar energy to provide effective sustainable water and space heating for large-scale installations is now a reality with our versatile solar thermal systems. Our range of flat panel and evacuated tube collectors, accessories and controls will not only preserve valuable fuel and help reduce heating costs, but will also help protect our environment for future generations.

Features and benefits at a glance:
- Free renewable energy
- Minimum additional space requirements
- Independence from utility companies
- Straightforward modular installation
- Lower carbon footprint
- Less wear and tear on your boiler or heat pump
- Visible demonstration of environmental responsibility.

SKR6 and SKR12 evacuated tube collectors
In optimum conditions, evacuated tube solar water heating systems can produce up to 60%* of a property’s hot water, but they are even effective on days with little sun. The outstanding thermal insulation provided by the vacuum tubes generates high performance even when the weather is cooler. Evacuated tube collectors can be relied upon to provide low-cost hot water. They produce no CO₂ emissions so they also help to reduce the carbon footprint of a property.

SKS 4.0 flat plate collectors
SKS 4.0 collectors use high specification solar technology to maximise the amount of heat captured from the sun and ensure optimum energy yields. A dual meander copper absorber optimises an even heat transfer across the collector, and an inert gas layer prevents contamination from entering the collector. Highly translucent solar safety glass and a tough fibreglass framework, makes the SKS collector chemical, weather, UV and corrosion resistant.

SKN (Lifestyle) flat plate collectors
SKN (Lifestyle) collectors offer both quality and value for investors wishing to upgrade their heating system with renewable technology. The robust fibreglass collector offers outstanding durability and a superb price/performance ratio. Excellent compatibility with existing heating equipment and straightforward rooftop installation saves time and money, and ensures a hassle-free energy saving solution.

* Source: Energy Saving Trust
CE Combined Heat & Power modules

Total system solution CHP with high efficiency boilers provides electricity, heat and hot water. Bosch combined heat and power (CHP), with outputs from 12kWe to 400kWe, offers a more efficient way to generate heat and electrical power, compared to conventional methods.

Features and benefits at a glance:
- Overall net efficiencies of up to 94.2%
- Bosch renowned standards for manufacturing quality
- Cost-efficient supply of energy on site
- Effective monitoring Communication via remote monitoring modem
- Low noise levels of 35 dB(A) can be achieved with optional air and exhaust silencers
- Trigeneration with an absorption chiller to allow the plant to operate more efficiently (CE 50 NA - CE 400 NA)
- Choice of service and maintenance plans
- Safe and secure energy supply.

Efficiency on a whole new level
A Bosch CHP module consists of a gas engine, a generator and a heat exchange system. The gas engine drives the generator to produce three-phase electrical power, which feeds into the main low voltage distribution system, where it can be used locally or exported to the national grid.

Heat is produced as a by-product of the power generated, which in turn produces hot water via the integral heat exchangers. This hot water may be used for space heating, process heating or heating of domestic hot water (DHW).

Reduced carbon emissions for both power and heat
According to the Carbon Trust, when compared to using conventional boiler systems and mains electricity, CHP has the potential to reduce carbon dioxide emissions for power and heat generation by around 30%.

Bosch CHP delivers a fast return on investment in several ways:
- Reduces the requirement to purchase energy from utility companies
- More cost-effective than buying mains electricity as the cost of mains gas is considerably lower
- Tax benefits: fuel inputs to CHP are exempt from the Climate Change Levy (CCL)*
- Eligible for Enhanced Capital Allowances (ECA)*
- Carbon Allowance: qualifies for favourable allocations under Phase II of the EU Emissions Trading Scheme (EU ETS)*
- Business Rates Exemption.

*Benefit depends on achieving certain CHPQA quality CHP statuses
UNIMAT hot water boiler

UNIMAT UT-M, UT-L and UT-H hot water boilers are a further development of the successful UT boiler construction. The UT-M is used in plants where medium temperatures are required, while the UT-L is the perfect solution for applications with low temperature needs. The UT-H is used in high pressure and high temperatures requirements and for district heating or process heating applications.

Features and benefits at a glance:
- Effective 3-pass design
- Standard utilisation ratio, without a flue gas heat exchanger is up to 95%, and up to 105% with condensing heat exchanger
- Highly flexible as manufactured to customer specification
- Low return temperatures from 50°C
- Compatible with most burner systems
- Reduced emissions due to the use of a highly developed firing systems
- Fully hinged front door for easy access
- No limit on minimum burner turndown
- Smoke tube passes free of flow baffles
- High permissible temperature difference between flow and return, up to 50°C.

Proven technology
The proven UNIMAT 3-pass design has been used for decades – with overwhelming success. The UNIMAT range is offered in various sizes and can also be used as a multi-boiler system. It is CE certified and is designed and equipped in compliance with the European Pressure Equipment Directive.

For a wide range of applications
The UNIMAT proves its outstanding efficiency in central heating systems for district and local heating supply. However, the versatile hot water boiler is also used within a wide range of commercial and industrial applications.

UNIMAT Low NOx industrial boiler option
The UT-M Low NOx is specially designed for when extremely low flue emissions are required. The large combustion chamber reduces the flame temperature and subsequently lowers harmful emissions.

Intuitive controls
All boiler systems can be equipped with intuitive controls. The operational functions of the controls guarantee the fully automatic operation and protection of the boiler systems. The efficient BUS system technology ensures the intelligent networking of the individual modules, as well as enabling an easy connection to higher level building management systems.
Complete product range

With an extensive product range of energy-efficient cast iron boilers, stainless steel boilers, the latest aluminium condensing boilers and an extensive renewable range, we can provide the complete heating and hot water solution. For more information please call 0330 123 3004 or visit www.bosch-industrial.co.uk

Condensing wall hung boilers

- **GB162 (65 - 100kW)**
  The GB162 is a stylish and remarkably compact condensing gas boiler. Up to 110% efficiency, quiet and easy to install and maintain.

- **GB162 Cascades (up to 800kW)**
  Boilers can be installed in an innovative in-line or back-to-back cascade system of up to 8 boilers, with just 4 boilers back-to-back giving a 400kW output in just 1m².

Condensing wall hung water heaters

- **CWi47 (50kW)**
  The condensing CWi47 continuous flow water heater has an efficiency of 104%. With an output of 50kW, this compact water heater is ideal for both small and large commercial hot water applications.

- **CWi47 (up to 600kW)**
  Up to 12 appliances can be cascaded in parallel, offering a continuous flow rate of up to 247 litres/min ∆T 35°C. Alternatively the heaters can be configured with buffer storage vessels, offering rapid recovery times, and providing more than 10,000 litres/hr ∆T 50°C.
Combined heat and power

(12kWe - 400kWe)
- CE12
- CE19
- CE50
- CE70
- CE140
- CE240
- CE365
- CE400

Combined heat and power (CHP) offers a more efficient way of generating heat and electrical power compared to conventional methods.

Floor standing industrial boilers

High efficiency steel

- UNIMAT UT-M and UT-L (650 - 19,200kW)
  A versatile multi-fuel boiler for larger industrial applications. Has an internal/external stainless steel or galvanised steel condensing heat exchanger.

- UNIMAT UT-M LN and UT-L LN (500 - 17,500kW)
  Special "Low NOx" variant of the UNIMAT UT-M and UT-L specified with larger combustion chamber for reduced emissions.

- UNIMAT UT-H and UT-HZ (820 - 38,000kW)
  The UT-H and UT-HZ boiler type ensures a reliable and efficient heat supply in the high output range.
Floor standing boilers

**Condensing pre-mix aluminium**

- **GB312 (90 - 280kW)**
  A compact floor standing, condensing gas boiler, the GB312 is suitable for room-sealed or open flue systems and is fitted with a cast aluminium heat exchanger.

- **GB312 Cascades (180 - 560kW)**
  Available as a two boiler cascade where higher outputs are required.

- **GB402 (320 - 620kW)**
  A floor standing, condensing gas boiler, the GB402 is fitted with a cast aluminium heat exchanger and thermally-insulated boiler body.

- **GB402 Cascades (640 - 1,240kW)**
  Can be used as a multiple boiler cascade where higher outputs are required.

**Condensing stainless steel**

- **SB325 (50 - 115kW)**
- **SB625 (145 - 640kW)**
- **SB745 (790 - 1,200kW)**
  Compact, easy to install, high performance gas condensing boilers with precision-engineered condensing heat exchangers made of high-quality stainless steel.

**High efficiency cast iron**

- **G215 (68 - 83kW)**
- **GE315 (86 - 230kW)**
- **GE515 (201 - 510kW)**
- **GE615 (511 - 1,200kW)**
  The GE range is particularly well suited for replacement boiler installations or where access to the boiler room is restricted. They offer high efficiency and allow very simple, cost-effective hydraulic system design.
Renewable technology

Solar thermal

- **SKR6 and SKR12**
  The SKR6 and SKR12 are the most efficient CPC collectors in the market that enable sizing flexibility and offer an optimum investment in hot water comfort per square metre.

- **SKS 4.0 and SKN (Lifestyle)**
  Flat plate collectors using high specification solar technology to maximise the amount of heat captured from the sun, and ensure optimum energy yields.

Gas absorption heat pump

- **GHP AWO 38 (38.3kW)**
  A low carbon solution for the delivery of highly efficient, renewable heating for commercial, industrial and residential applications.

- **GHP AWO 38 Cascade System (76.6 - 205.5kW)**
  For higher heat demands, the gas absorption heat pump can be supplied in a factory-assembled rig-mounted multi heat pump cascade of up to 205.5kW, and larger cascade systems are available if required.

Floor standing steam boilers

High efficiency steam boilers

- **UNIVERSAL U-ND (175 - 3,200kg/hr)**
- **UNIVERSAL U-HD (175 - 1,250kg/hr)**
- **UNIVERSAL U-MB (200 - 2,000kg/hr)**
- **UNIVERSAL ULS (1,250kg/hr)**
- **UNIVERSAL UL-SX (2,600 - 28,000kg/hr)**
- **UNIVERSAL ZFR (18,000 - 55,000kg/hr)**
- **UNIVERSAL ZFR-X (18,000 - 55,000kg/hr)**

The high efficiency shell boilers of the proven and reliable UNIVERSAL series over the full spectrum of steam capacities from 175 to 55,000kg/hr.
Training – keeping you up to speed with the latest technology

Bosch Thermotechnology Ltd. is as renowned for the quality of its training as it is for the quality of its products. Training that enables specifiers and installers to keep up to speed with the latest regulations, as well as the most recent products to enter the market.

Our technical training officers, who have many years’ experience as heating technicians, combine practical installation tips with heating theory and legislative requirements, ensuring a thorough understanding of all aspects of the application of gas absorption heat pumps.

State-of-the-art facilities
Gas absorption heat pump training is carried out at our new, purpose-built training facilities in Worcester. The facility has been expanded with the opening of a new 400m² unit which includes life-size single-storey buildings with working appliances to simulate real installations.

All aspects of assembly, installation, fluing and control options are explained in detail. With our help, you will be equipped with the skills to ensure that both you and your customers achieve the maximum benefit from Bosch GHP AWO 38 technology.

The training centre also runs certified commercial ACS courses equipping installers with the relevant qualifications for the changeover from domestic to commercial gas work.

Who can benefit from our training course?
Commercial sector installers, engineers and specifiers with the desire to learn and apply new skills, by keeping abreast of industry developments and discover how to best capitalise on the needs of the commercial industry.

Apply now
If you would like further information, or to book a place, you can contact our training team on 0330 123 0166 or email training@uk.bosch.com
<table>
<thead>
<tr>
<th>Training courses</th>
<th>Content</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>Commercial ACS course CODNC01</td>
<td>Changeover qualification from domestic to commercial, including SGA1.</td>
<td>5 days</td>
</tr>
<tr>
<td>CHP overview course</td>
<td>Product overview, systems and controls.</td>
<td>1 day</td>
</tr>
<tr>
<td>GB162 training course</td>
<td>Features and benefits, energy efficiency and legislation requirements.</td>
<td>1 day</td>
</tr>
<tr>
<td>Heat Distribution Unit training course</td>
<td>Product overview, systems, controls, installation and commissioning.</td>
<td>1 day</td>
</tr>
<tr>
<td>Gas-fired instantaneous water heater training course</td>
<td>Product overview, installation, commissioning, servicing and maintenance.</td>
<td>1 day</td>
</tr>
<tr>
<td>GB312 &amp; GB402 training course</td>
<td>Product overview, installation, commissioning, service &amp; maintenance.</td>
<td>1 day</td>
</tr>
<tr>
<td>Gas Absorption Heat Pump training course</td>
<td>Product overview, systems, controls, installation and commissioning.</td>
<td>1 day</td>
</tr>
<tr>
<td>Solar product training course</td>
<td>Installation of panels, system design, Bosch solar components, commissioning, servicing, basic fault finding.</td>
<td>1 day</td>
</tr>
<tr>
<td>Commercial controls training course</td>
<td>Guide to the varied range of Bosch control options that are available with the commercial boiler range. Controls covered: RC25, RC35, 4000.</td>
<td>2 days</td>
</tr>
</tbody>
</table>
A high performance system with a first class service to match

With Bosch Commercial and Industrial Heating and our first class service, you are always on the safe side.

Always there for you
Our customer service is there for you and because of our close-knit service support network, we can ensure the quickest possible reaction times. Along with maintenance services, fault finding and repairs, we also offer support with the regular inspection of your system. Bosch after-sales support also allows us to analyse your system and upgrade it if required.

Customer service
Bosch Commercial and Industrial Heating directly employ service and commissioning engineers to provide exceptional support throughout the UK.

Email: commercial.enquiry@uk.bosch.com or telephone 0330 123 3004

Opening times
Monday - Friday: 7.00am - 8.00pm
Saturday: 8.00am - 5.00pm
Sunday: 9.00am - 12 noon

Reliable supply of spare parts
Genuine spare parts for all supported Bosch appliances are readily available either from stock on a next day delivery basis or delivered direct from Germany.

Email: spares.mailbox@uk.bosch.com or telephone 0330 123 0166.
Bosch Thermotechnology Ltd. has a policy of continuous research and development and this may necessitate alterations to this specification from time to time. Therefore before preparing for the installation of the appliance it is important that the instructions issued with the unit are carefully read and adhered to. The statutory rights of the customer are not affected. Photographs shown are used for illustrative purpose only. All information is correct at time of going to press. Bosch Thermotechnology Ltd. reserves the right to alter any information where necessary. E&OE.