



# BURNERS CATALOGUE

10 | 2024



**baltur**  
Energy for People

# Love

We have been building our excellence day by day in the combustion technology. Since 1950.

## our values

# Reliability

We employ the principles of Lean Management and Industry 4.0, our strength in advanced controls and methods allow for the best performance of processes and quality of products.



# Innovation

Every year we invest new resources in our ability to develop new technologies and machines. Our laboratories conducts continuous testing and experiments on burners up to 50 MW of power.



# Accountability

We believe the wellbeing of humankind depend also on our effort. Baltur is committed in building a more efficient and innovative response to the world's challenges. Products that are increasingly ecological and environmentally friendly, complaint with the strictest national and international regulations





## **BALTUR BURNERS**

### **HIGH PERFORMANCE AND EMISSIONS REDUCTION - A WINNING COMBINATION FOR BALTUR BURNERS**

BALTUR BURNERS ARE GUARANTEED BY THE EXPERIENCE AND KNOW-HOW ACQUIRED DURING 71 YEARS OF PRODUCTION, RESEARCH AND CONTINUOUS INVESTMENT. THE LINE IS TESTED ACCORDING TO ESTABLISHED PROCESSES, WHICH ARE COMPLIANT WITH EU AND EXTRA-EU STANDARDS, AT THE RESEARCH AND TESTING ROOM - A STATE-OF-THE-ART FACILITY FOR THE DEVELOPMENT OF THE BEST TECHNOLOGIES IN THE FIELD OF ENERGY EFFICIENCY.



**ENERGY  
SAVING**



**SAFETY**



**RESPECT FOR THE  
ENVIRONMENT**



## FEATURES THAT MAKE A DIFFERENCE



### Electronic modulation burners

- Easy to regulate thanks to the user-friendly electronic cam software.
  - The regulation of the burner is more precise, reliable and repeatable.
  - Higher modulation ratio.
  - Highly flexible burner configuration according to customer requirements thanks to the modularity of the components that can be used provided by the electronic cam.
  - Possibility of using Combustion Control Systems CCS for combustion optimization and energy saving.
- 



### Low emissions gas burners

- The Baltur low emission burners have also been designed to be used in conjunction with combustion control systems.
  - The Baltur low NOx emissions burners can also be used in industrial processing plants.
- 



### Burners with INVERTER frequency converter

- During normal operation, these allow a significant reduction in primary electrical energy consumption to be achieved, within the burner's modulation range.
  - They guarantee a reduction in the amount of noise produced.
  - The Baltur electronic cam burners can also use the inverter to manage combustion optimization in CCS combustion control systems.
- 



### Burners with O<sub>2</sub> and CO control

- Extensive experience in the configuration, management and installation of active CCS combustion control systems.
  - High reliability and consistency in the measurement, control and processing of the monitored parameters.
  - Possibility of subsequent CCS system installation; its modular design means that the CCS system can be installed even after the burner has been installed and is operational.
- 



### Burners with external recirculation of combustion gases FGR (Flue Gas Recirculation)

- The monoblock and dual block burners can be configured to use exhaust gases from the flue, to reduce nitrogen oxide NOx emissions.
- This system makes it possible to obtain a reduction of between 20% and 50% of nitrogen oxide, according to the amount of flue gas recirculated.
- Baltur provides engineering analysis for the FGR systems by providing technical support for the design of the flue gas systems.



## BALTUR ACADEMY

EXCELLENCE IS ACHIEVED THROUGH CONTINUOUS TRAINING.

BALTUR ENSURES CUSTOMER'S SATISFACTION - CORRECT DIAGNOSIS, QUICK AND EFFECTIVE SERVICES - THROUGH THE TRAINING OF ITS TECHNICAL SUPPORT NETWORK TO PROMOTE NEW COMPETENCIES AND PROBLEM SOLVING SKILLS.

THE COURSES - FOCUSED ON THE OPERATING LOGIC OF THE PRODUCTS - ALLOW PERSONNEL TO QUALIFY AS SKILLED TECHNICIANS AND WORK ON BALTUR PRODUCTS - AN ADDITIONAL GUARANTEE OF EXCELLENCE AND THE ABILITY TO SOLVE PROBLEMS.



REMOTE  
TRAINING



SITE  
TRAINING



TECHNICAL  
TRAINING





## CONTINUOUS INNOVATION

THE FUTURE IS NOW

NEW COMBUSTION TECHNOLOGIES, NEW MATERIALS, REMOTE OPERATIONAL PARAMETER MONITORING AND TRANSMISSION.

Every year we invest new resources in our **R&D laboratories** so that we can conduct continuous testing and experiments on burners up to **50 MW of power**, working to meet our customers' expectations with increasingly efficient products and the lowest environmental impact.



Continuous  
research



Respect for the  
environment





**TECHNICAL ASSISTANCE**  
**EXPERT ASSISTANCE THROUGHOUT  
THE COUNTRY**

TECHNICAL ASSISTANCE IS AN ESSENTIAL ELEMENT FOR BALTUR. THIS IS WHY THE COMPANY HAS AN EXTENSIVE NETWORK OF SERVICE CENTRES ACROSS THE COUNTRY; A WIDESPREAD ORGANISATION OF PEOPLE WHO DEAL EXCLUSIVELY WITH AFTER SALES SERVICES THAT RESOLVE PROBLEMS AS QUICKLY AS POSSIBLE AND PROVIDE TIMELY AND EFFECTIVE SOLUTIONS.



REMOTE  
ASSISTANCE



DIRECT  
CONTACT



PRESENCE





## **APPLICATION ENGINEERING DEPARTMENT**

**CUSTOMISATION FOR SPECIFIED APPLICATIONS,  
ALWAYS ONE STEP AHEAD**

**The Baltur Application Engineering Department supports customers by developing bespoke burners for specified applications, both for large industrial plants and for small thermal power generation systems.**

The Baltur Application Engineering Department is the first and most important technical reference point for the entire sales force, both internal and external, at all stages of the process: pre-sales, feasibility studies, commissioning and start-up, directly in the field.

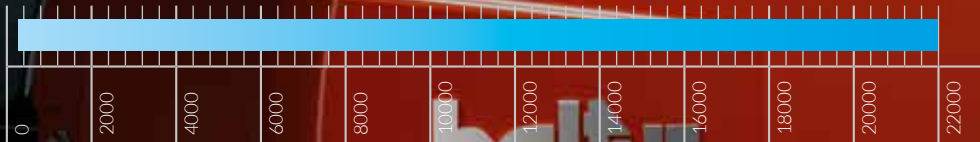
The Department proactively participates in the pre-sales stages of all burners, both standard and non-standard, irrespective of power output (from 30 to 40 kilowatts up to 70 megawatts) while also dealing with even the most complex requests.



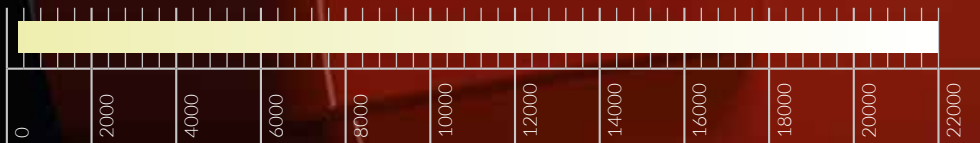


## BURNERS RANGE

**GAS** MONOBLOCK BURNERS **from 16,6 to 22000 kW**



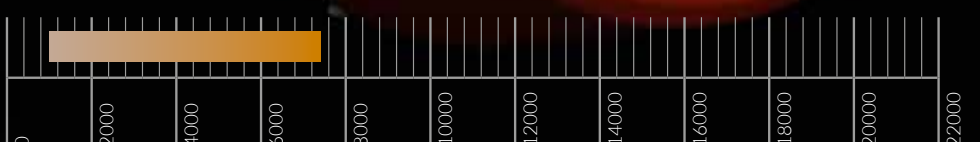
**DUAL FUEL** MONOBLOCK BURNERS **from 800 to 20000 kW**



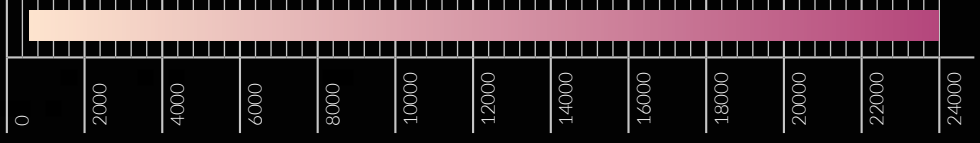
**LIGHT OIL** MONOBLOCK BURNERS **from 16,6 to 12000 kW**



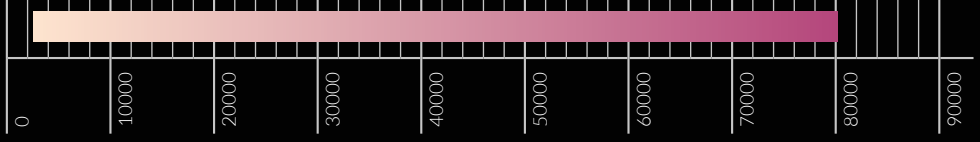
**HEAVY OIL** MONOBLOCK BURNERS **from 1000 to 7500 kW**



**INDUSTRIAL** DUAL-BLOCK BURNERS WITH SEPARATED FAN **from 200 to 24000 kW**



**INDUSTRIAL** DUAL-BLOCK BURNERS WITH ADJUSTABLE FLAME GEOMETRY **from 500 to 80000 kW**





# INDEX

page 12

GENERAL  
INFORMATIONS

page 24

GAS  
BURNERS

page 186

DUAL FUEL  
BURNERS

page 252

LIGHT OIL  
BURNERS

page 300

HEAVY OIL  
BURNERS

page 306

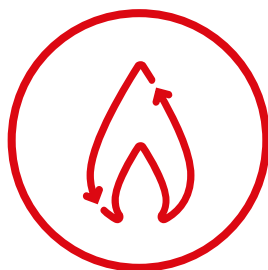
INDUSTRIAL  
BURNERS

page 324

ACCESSORIES

page 330

GAS TRAIN



## WARNINGS

The following must be taken into account when choosing a burner:

### 1 COUPLING FLANGE

- 1.1 All burners up to 3600 kW capacity are equipped with a coupling sliding flange which allows the exact positioning of the combustion head inside the combustion chamber in compliance with the boiler manufacturer's rules.  
This does not apply BTL 3, BTG 3 which can be supplied with a long head sliding on the coupling flange on request.

### 2 BLOWN AIR BURNERS

- 2.1 Blown air burners capacity is closely linked to the back-pressure in the combustion chamber as well as installation conditions like altitude. Please refer to the specific operating range reported for each model and to instruction on pages 18-19 to choose the correct machine for the intended application.

### 3 MODULATING BURNERS

- 3.1 In case modulating burner is required it's necessary to add the PID load controller and related probe modulating KIT to the two stage progressive burner. Please note that TBML ME models up to 3600 kW are provided with load regulator already Included.

### 4 GAS AND DUAL FUEL BURNERS

- 4.1 Gas and dual fuel burners comply with Directive 2009/142/EC and are manufactured according to EN676. This compliance is indicated by the CE mark on the burner itself.
- 4.2 Gas and dual fuel burners, must always be ordered with a gas train and an adapter (if required). These should be selected according to the gas pressure available. Please refer to instruction on page 17 for gas train selection.. **ORDERS FOR BURNERS WITHOUT A GAS TRAIN WILL NOT BE ACCEPTED.**
- 4.3 In the case of gas input pressures that exceed the application field of gas proposed trains, please contact our Sales Office for a dedicated solution.

### 5 DIESEL AND BIOFUEL BURNERS

- 5.1 Diesel burners are compatible with blends of diesel and biofuel.  
Biofuel must meet the requirements of EN14213.  
Diesel blends having a maximum biofuel content of 10%: all the components of the suction line of the system must be compatible with the type of fuel used and the line must be fitted with a filter 40µm rated.

Diesel blends having a maximum biofuel content of 30%: requires in addition to the above a kit for biodiesel operations. Please contact our Sales Office for more information.

### 6 60Hz BURNERS

- 6.1 The operating range of the burners reported in this document has been obtained in compliance with EN267 (Light oil burners) and EN676 (Gas burners) with frequency 50Hz.

### 7 HEAVY OIL BURNERS

- 7.1 If you use heavy oil with a viscosity higher than 5° E at 50°C and up to 15°E the system must be equipped with a feed circuit employing an auxiliary pump as per our technical drawings.

### 8 IMPORTANT Note

- 8.1 Diagrams are indicative only and refer to test boilers as per the standards in force.  
The performance of the overall thermal unit strongly depend on correct matching between burner and boiler/combustion chamber.  
In case of specific and mandatory requirements are in place please contact our Sales Office for a validation of the solution.

### 9 Note

- 9.1 For technical data and special products offers please refer to the local Baltur dealer or contact directly Baltur Head Office at tel. +39 0516843711, e-mail info@baltur.it

**ALL DATA IS INDICATIVE ONLY; BALTUR RESERVES THE RIGHT TO MODIFY, CHANGE AND AMEND TECHNICAL DATA AND OTHER INFORMATION ON THE CATALOGUE WITHOUT GIVING PRIOR NOTICE.**



## SYMBOLOLOGY

### GAS

#### **BPM...**

Modulating gas premix burners.

#### **BTG... • TBG...**

Single-stage gas burners .

#### **BTG... Lxxx**

Long head single-stage gas burners.

#### **BTG...P • TBG...P • TBG...LX P**

Two-stage gas burners.

#### **BTG...P Lxxx**

Long head two-stage gas burners.

#### **TBG...MC • TBG... LX MC**

Two-stage progressive/modulating gas burners with mechanical cam.

#### **BTG...ME • TBG...ME • TBG...LX ME**

Two-stage progressive / modulating gas burners with electronic cam.

#### **TBG...ME V • TBG...LX ME V**

Modulating gas burners with electronic modulation and frequency converter (inverter).

#### **TBG SLX...ME**

Super Low NOx (FIR) gas burners with electronic modulation.

#### **TBG... LX ME FGR**

Modulating gas burners with electronic modulation and flue gas recirculation system (FGR).

### DUAL FUEL

#### **TBML...P**

Two-stage gas/light oil burners.  
Dual operating mode.

#### **TBML...MC**

Two-stage progressive/modulating gas/light oil burners with mechanical cam on gas, two-stage on light oil.  
Dual operating mode.

#### **TBML 50/80/120/160/200/260/360 ME**

Modulating gas/light oil burners with electronic modulation on gas, two-stage on light oil. Dual operating mode.

#### **TBML from 450 to 2000 ME**

Modulating gas/light oil burners with electronic modulation. Dual operating mode.

#### **TBMN...ME**

Modulating gas/heavy oil burners with electronic modulation. Dual operating mode.

### LIGHT OIL

#### **BTL... • TBL...**

Single-stage light oil burners.

#### **BTL... Lxxx**

Long head single-stage light oil burners.

#### **BTL...P • TBL... P • TBL...LX**

Two-stage light oil burners.

#### **BTL...P Lxxx**

Long head two-stage light oil burners.

#### **BT...DSPG**

Two-stage progressive/modulating light oil burners with mechanical cam.

#### **TBL... ME**

Two-stage progressive/modulating light oil burners with electronic cam.

### HEAVY OIL

#### **TBN...ME**

Two-stage progressive / modulating heavy oil burners with electronic cam.

**N.B.** The letters indicate the model; burner power is indicated in the spaces.

**...DACA** Burner equipped with automatic air closure device.

**...O2** Kit for O<sub>2</sub> control.

**...CO** Kit for CO and O<sub>2</sub> control.

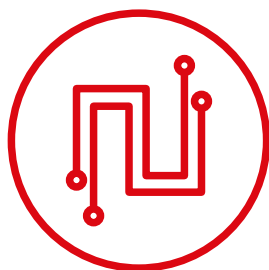
**...H** Burner equipped with preheating.

**GAS EMISSIONS:**  
Emissions  
classes defined according  
to EN676 directive.

Class	NOx Emissions [mg/kWh]	
	natural gas	LPG
1	≤ 170	≤ 230
2	≤ 120	≤ 180
3	≤ 80	≤ 140
4	≤ 60	≤ 110

**LIGHT OIL EMISSIONS:**  
Emissions  
classes defined according  
to EN267 directive.

Class	NOx Emissions	CO Emissions
	[mg/kWh]	[mg/kWh]
1	≤ 250	≤ 110
2	≤ 185	≤ 110
3	≤ 120	≤ 60



## BURNERS WITH ELECTRONIC MODULATION (ME SERIES)

Traditional modulation systems (mechanical modulation) used in standard burners have a mechanical connection between the servomotors and the adjustment parts which use rods, drive levers and joints.

This implies mechanical play and hysteresis in the combustion air/fuel calibration system, which results to imprecision for the combustion adjustment, especially at the minimum loads.

This combustion adjustment imprecision translates as loss of efficiency in terms of energy yield.

With electronic modulation, there is absolutely no mechanical play and hysteresis as the

servomotors are connected directly to the adjustment devices, without drive levers or rods.

This guarantees optimal combustion values at all the load points.

The correct position of the servomotors (stepping mode, with precision to one tenth of a degree) is guaranteed by the electronic cam, the new microprocessor "flame control", which is used to command and monitor all the burner functions.

The electronic cam has a built-in gas seal control. The PID temperature/pressure load adjuster is an optional for the BTG, TBG series and standard series. The combustion air/

## BTGME e TBGME series



### BURNER OPERATION DISPLAY WITH PROGRAMMING KEYBOARD

Allows to display the running sequence of the position of the air servomotor and the control of the servomotors.

Backlit display for an accurate reading even in difficult lighting conditions. Lamp block and reset button built into the programming keypad.

In case of shut down it is possible to immediately recognize the cause through an error code. Storage of the last 10 block reports.

Allows to display the fuel consumption through a pulse signal coming from the gas flow meter. Simple navigation menu with icons for easy programming.



### ELECTRONIC CAM

Modular electronic programmer with microprocessor for control and monitoring of the burner functions.

Version for continuous running on demand. Modulating operation through the use of a thermoregulator (optional).

Gas valves tightness control integrated in the control box. Electrical connection via encoded plug connections to prevent wiring errors. Remote reset.

On demand the following expansion modules are available: PID module for modulating operation, inverter module, O<sub>2</sub>/CO control for automatic fuel optimization, Interface Bus (PROFIBUS, MODBUS).



### SERVOMOTORS FOR AIR AND FUEL ADJUSTMENT

The air and gas flows are adjusted using stepping mode servomotors with precision to one tenth of a degree.

The considerable precision of the adjustments makes it possible to maintain the combustion at optimal values at all the load points.





fuel ratio adjustment curve (with configurable working points) is programmed using a programming keypad with display. This curve is password-protected. The display can be used to display a whole series of information. For example, if the burner is blocked, an error code will be displayed for immediate recognition of the cause of the block and rapid solving of the problem. The ME series burners comply with the ever increasingly demanding requirements of a market which requires combustion systems with high energy efficiency, reliable technological and cost cuts for installation and maintenance.

The ME burners series has been designed to match also the most demanding installation requests thanks to several expansions module such as: PID module for modulating operation, inverter communication module, O<sub>2</sub> and CO controls for automatic fuel optimization and digital interface BUS modules (PROFIBUS and MODBUS) for remote system monitoring.

## TBML series

### 1 - BURNER OPERATING DISPLAY WITH KEYPAD

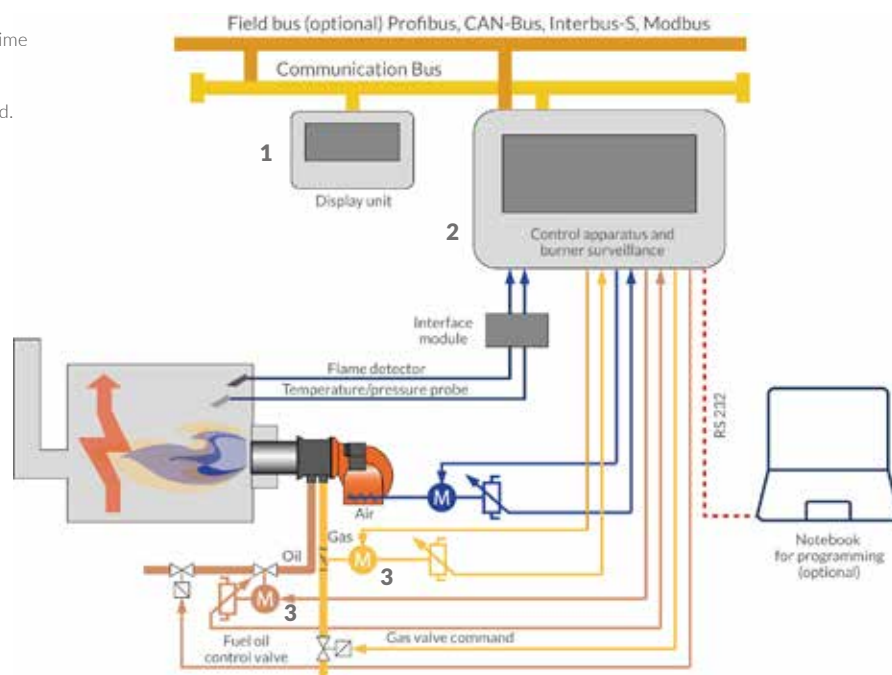
Enables the sequence of the servo motors' working position and the loading value to be viewed. Burner operating time and number of successful start-ups. Set point display. Also indicates the quality of the flame detected. If the burner is blocked, an error code will be displayed for immediate recognition of the cause of the block. Log of last ten lock-outs with date and time indicated. Keypad for burner calibration. These functions are password-protected.

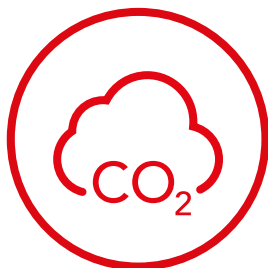
### 2 - ELECTRONIC CAM

Electronic programmer with double fail safe microprocessor to control and monitor burner functions. Built-in gas valve seal control. PID integrated load adjuster. TRD 604 certification. Available on request, connections to Modbus, CAN-bus, Profibus and Interbus-s.

### 3 - SERVOMOTORS FOR AIR AND FUEL ADJUSTMENT

The adjustment of air and gas flow is by means of servo motors with potentiometer feedback. The considerable precision of the adjustments makes it possible to maintain the combustion at optimal values at all the load points.





## BURNERS WITH O<sub>2</sub> AND CO CONTROL

In thermal combustion processes it is best to make sure that all the fuel is completely burnt to prevent the appreciable quantities of unburnt fuel finding its way into the combustion products.

In theory, the complete combustion of fuel could also be obtained by using the stoichiometric amount of combustion air.

In practice, however, one has to use excess combustion air with respect to the minimum stoichiometric amount, to ensure the fuel is completely burnt.

If however, the excess air is higher than a certain amount, there is the risk of excessive flame cooling with a consequent increase in heat loss to the flue and an increase in pollution.

It is therefore evident that the air-fuel ratio has to be maintained within an appropriate range in order to ensure maximum combustion efficiency and minimum air pollution.

The amount of excess air is determined by measuring the percent of oxygen in the exhaust fumes.

The active oxygen control system consists of:

- a zirconium oxide probe, located at the outlet of the combustion chamber or in the flue
- monitoring and control equipment.

The regulator, via the probe, monitors and measures the amount of oxygen in the fumes and by controlling a servomotor, automatically modifies the amount of combustion air, thereby maintaining an optimum air / fuel ratio and ensuring increased performance with less pollution.

The advantage of this system can be better understood with an example:

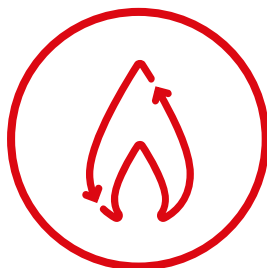
- 6MW methane fuelled power plant.
- use of 50 weeks/year, for 5 days/week, 16 h/day.
- the O<sub>2</sub> monitoring in the system, where the oxygen percent can be reduced up to 2,5%,

you can obtain energy savings of 52TOE (tonne of oil equivalent) and 142 tonnes/year of CO<sub>2</sub>, equal to 2%.

The performance that can be obtained using CO<sub>2</sub> monitoring in gas burners becomes even better.

In this case the combustion air is further reduced, (using an inverter, if fitted), by means of an air servomotor until a few dozen of CO<sub>2</sub> ppm are detected at the flue.

With CO monitoring, the minimum air excess on the entire work range can be ensured so as to increase energy efficiency of a further 0.5% with respect to O<sub>2</sub> monitoring.



## HOW TO CHOOSE THE RIGHT GAS TRAIN FOR THE BURNER

Using the specific diagrams, it is possible to select the gas train that is most suitable for the burner.

First of all it is necessary to identify:

- Burner's output  $Q_i$  [kW], to be identified along the x-coordinate.
- Gas pressure available at the regulator  $P_g$  [mbar], to be identified along the y-coordinate.

The available gas pressure is determined by the formula:  $P_g = P_a - P_c$  where:

$P_a$  = gas pressure provided by the mains supply;  
 $P_c$  = the pressure in the boiler combustion chamber.

The intersection point of the two lines defines the operational parameters of the gas train.

The gas train characterised by the first curve underneath the intersection point must be chosen.

### EXAMPLE:

- Burner = TBG 210 P
- $Q_i = 1700$  kW
- $P_a = 45$  mbar
- $P_c = 5$  mbar
- $P_g = 45 - 5 = 40$  mbar

Choose the indicated curve 123C.

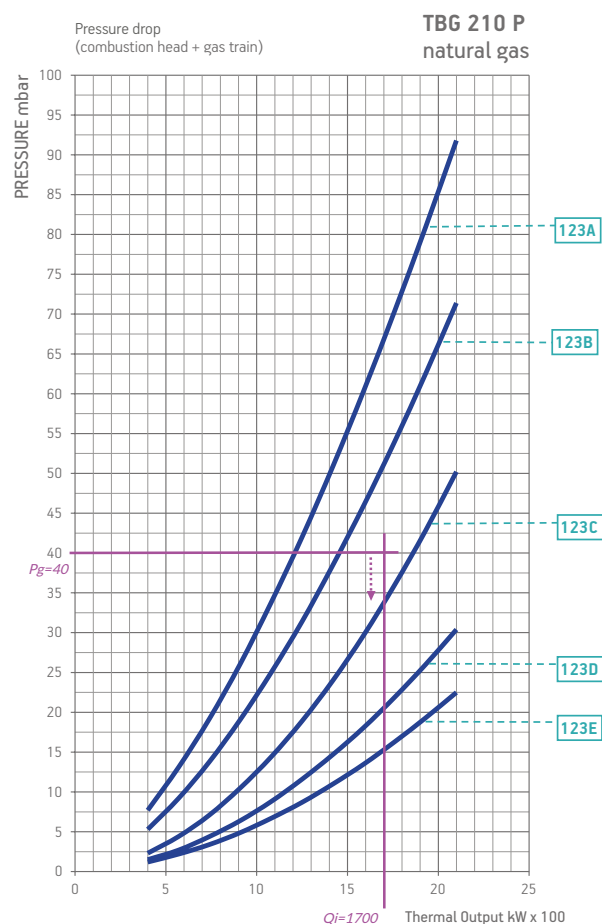
To identify the codes for the gas train, pressure regulator and adapter to be ordered refer to the BURNER/GAS train match-up table relative to burner TBG 210 P and curve reference 123C.

### Note:

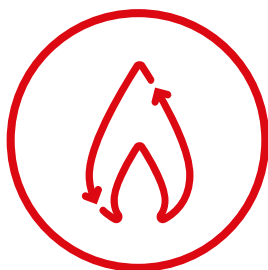
In the graphs the curves of the losses of load have different colors.

The BLUE curve shows ramp with valve block.  
 The RED curve shows ramp dedicated to extra CE market.

The pressure regulator is provided with springs in the different setting adjustment. These will replace, possibly, one already installed depending on the pressure of the gas that serves to ramp in that particular flow condition and pressure.







## COMBUSTION AIR FLOW CORRECTION FACTOR IN ACCORDANCE WITH THE TEMPERATURE AND ALTITUDE (ABOVE SEA LEVEL)

The burner operating ranges indicated in the various documentation refer to a temperature of 15°C and an altitude of 0 m above sea level. It may occur that the burner has to operate with air at different temperatures and/or altitudes. Therefore, its operating features must be modified.

Heating of the air and/or increasing of the altitude reduce the density of the air, with a resulting reduction in the oxygen content. Therefore, burning the same quantity of fuel requires the same quantity of oxygen contained in a greater volume of air.

Given that the burner fan is not set up to increase the volume of air, it is necessary to reduce the quantity of the fuel to be burned, with a resulting reduction in the maximum Thermal output.

This reduction leads to a reduction in the burner operating range obtained by multiplying the maximum Thermal output of the burner by a coefficient (see Table) which accounts for the temperature of the combustion air and the altitude.

It is necessary, therefore, to check if the working point is still within the new operating range. If it is, the burner is still suitable for that application. If it is not, you must select a bigger

burner.

### EXAMPLE:

Combining a gas boiler burner with a boiler for an application with following characteristics:

- thermal power 1100 kW
- counter pressure 4.5 mbar
- ambient temperature 50°C
- altitude 1000 m above sea level

Considering normal operating conditions TBG 120ME is the correct choice. However it's necessary to consider the correction of operating range due to different operating conditions.

### Using the formula

$$Q_r = Q_{\max} \times f$$

Where:

$Q_r$  = reduced burner output

$Q_{\max}$  = max Thermal

output of burner TBG 120ME = 1200 kW

$f$  = correction factor calculated using the table, by combining the 1000m column with the 50°C one.

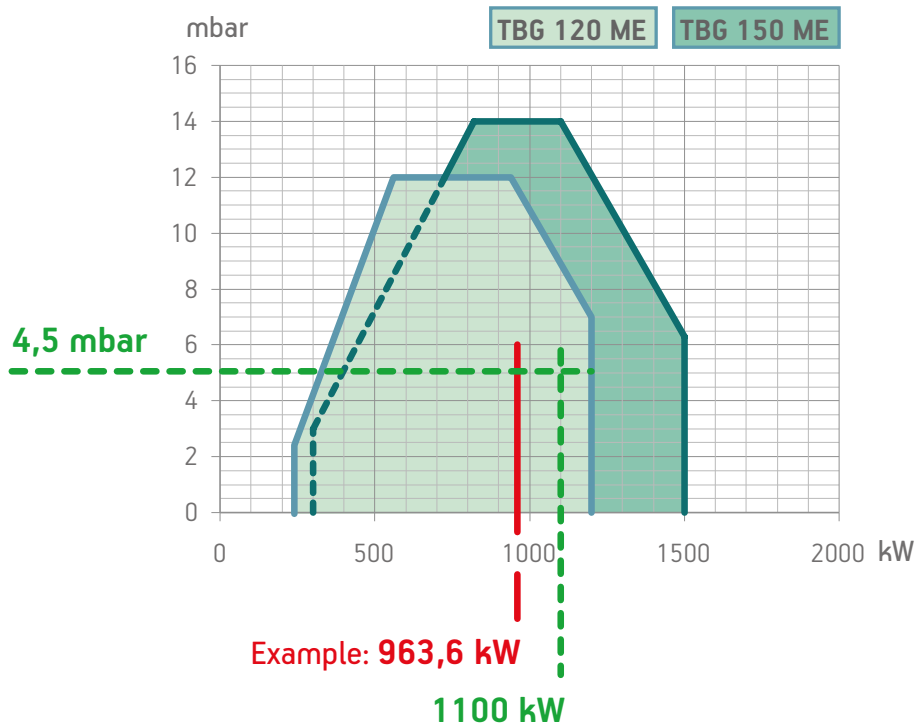
$f = 0.803$

$$Q_r = 1200 \times 0.803 = 963.6 \text{ kW}$$

Under these conditions TBG 120ME has a maximum output power of 963.6 kW which is insufficient for the application.

The correct choice is a TBG 150ME with maximum nominal power of 1500 kW, that after correction is reduced to  $1500 \times 0.803 = 1204 \text{ kW}$ .

Which is suitable for the application.



Air temperature in °C	Height in meters above sea level												
	0	250	500	750	1000	1250	1500	1750	2000	2250	2500	2750	3000
0	1,071	1,040	1,009	0,978	0,950	0,920	0,895	0,867	0,841	0,813	0,791	0,765	0,741
5	1,052	1,021	0,991	0,960	0,933	0,904	0,879	0,851	0,826	0,798	0,776	0,751	0,728
10	1,033	1,033	0,973	0,943	0,916	0,888	0,863	0,836	0,812	0,784	0,763	0,738	0,715
15	1,015	0,986	0,956	0,927	0,900	0,872	0,848	0,822	0,797	0,771	0,749	0,725	0,703
20	0,998	0,969	0,940	0,911	0,885	0,857	0,834	0,807	0,784	0,758	0,737	0,713	0,691
25	0,981	0,953	0,924	0,896	0,870	0,843	0,820	0,794	0,771	0,745	0,724	0,701	0,679
30	0,965	0,937	0,909	0,881	0,856	0,829	0,806	0,781	0,758	0,733	0,712	0,689	0,668
40	0,934	0,907	0,880	0,853	0,828	0,803	0,781	0,756	0,734	0,709	0,690	0,667	0,647
<b>EXAMPLE 50</b>	0,905	0,879	0,853	0,827	0,803	0,778	0,756	0,733	0,711	0,687	0,668	0,647	0,627
60	0,878	0,853	0,827	0,802	0,779	0,754	0,734	0,711	0,690	0,667	0,648	0,627	0,608
80	0,828	0,804	0,780	0,756	0,735	0,712	0,692	0,670	0,651	0,629	0,611	0,592	0,573
100	0,784	0,761	0,739	0,716	0,695	0,674	0,655	0,634	0,616	0,595	0,579	0,560	0,543
150	0,691	0,671	0,651	0,631	0,613	0,594	0,578	0,559	0,543	0,525	0,510	0,494	0,478
200	0,618	0,600	0,582	0,565	0,548	0,531	0,517	0,500	0,486	0,469	0,456	0,442	0,428
250	0,559	0,543	0,527	0,511	0,496	0,480	0,467	0,452	0,439	0,425	0,413	0,400	0,387
300	0,510	0,496	0,481	0,466	0,453	0,439	0,426	0,413	0,401	0,387	0,377	0,365	0,353

f



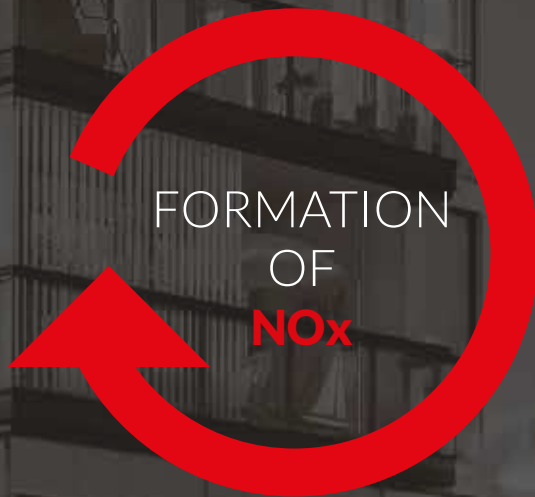
## **FGR**

### FLUE GAS RICIRCULATION FOR NO<sub>x</sub> REDUCTION

#### **NITROGEN OXIDES**

During combustion, oxygen (O<sub>2</sub>) and nitrogen (N<sub>2</sub>) present in the air can combine with each other in a number of ways, generating nitrogen oxides (NO<sub>x</sub>). Among them, nitrogen monoxide (NO) and dioxide

(NO<sub>2</sub>) are the protagonists in many pollutant processes and have an impact on health. There are three main paths for the formation of NO<sub>x</sub>:



- 1 **Thermal NO<sub>x</sub>**  
Related to flame temperature.
- 2 **Quick NO<sub>x</sub>**  
Related to chemical reactions.
- 3 **NO<sub>x</sub> due to fuel**  
Related to the amount of nitrogen in the fuel.

#### **FLUE GAS RICIRCULATION (FGR)**

Recirculation of combustion products is a technique to reduce the flame temperature. It consists in withdrawing a part of combustion fumes from the chimney and dilute them with combustion air, in order

to reduce the concentration of oxygen and increase the concentration of inerts (N<sub>2</sub> and CO<sub>2</sub>), which in turn will absorb a part of the energy developed during combustion, thus reducing the flame temperature.



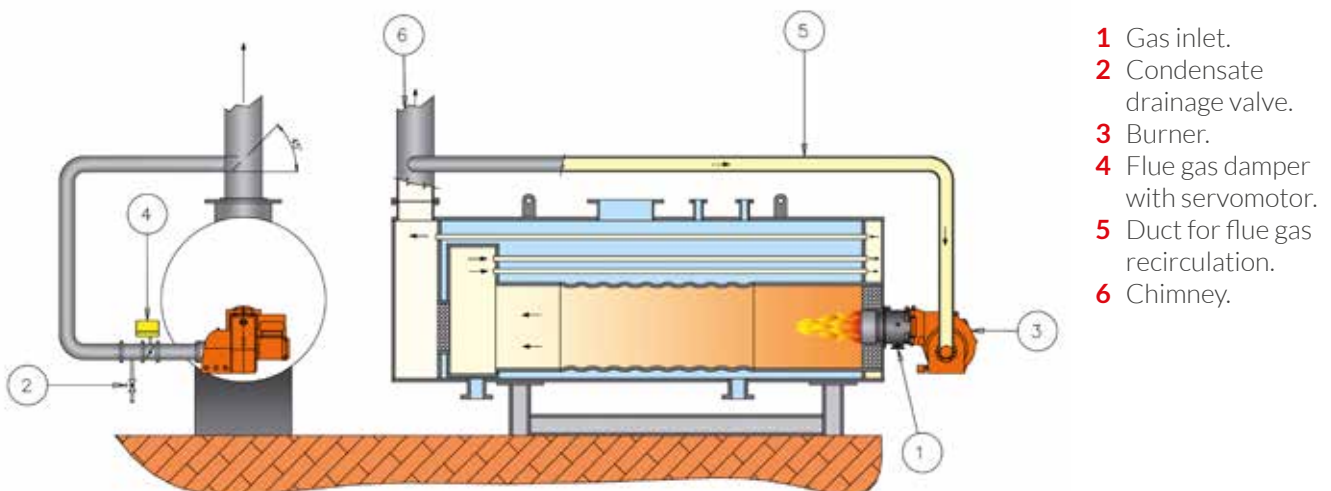
## FGR FOR MONOBLOCK BURNERS



FGR systems are generally demanding in terms of installation and maintenance. A solution which does not take into account the combination of mechanical, thermal and chemical stresses will lead to early failure of system. Baltur has engineered its FGR solution with the aim to provide the highest level of reliability and long standing performances. Our FGR systems are equipped with:

- double condensation drainage system,
- flue gas duct and ventilation made with special steel,
- full protection of UV sensor,
- additional UV sensor cleaning and cooling system for the most demanding application.

**Diagram 1** - External gas recirculation for monoblock burners.

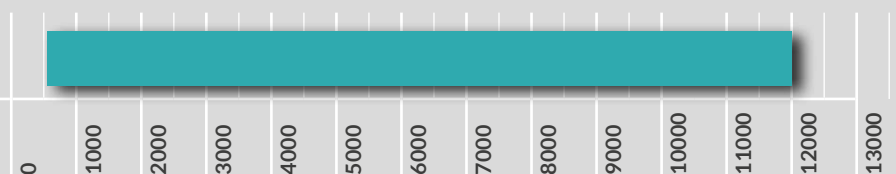


- 1 Gas inlet.
- 2 Condensate drainage valve.
- 3 Burner.
- 4 Flue gas damper with servomotor.
- 5 Duct for flue gas recirculation.
- 6 Chimney.

## FGR RANGE

12 MODELS AVAILABLE  
POWER FROM 600 TO 12000 KW

kW





## ENERGY SAVING WITH $O_2$ & CO CONTROL SYSTEMS

### Do you know that combustion efficiency is not constant over time?

Combustion efficiency is a critically important element of any heating plant: higher efficiency means lower fuel consumption and hence lower operating costs.

However, combustion efficiency is not always constant over time. This depends on the ability of the plant to regulate the combustion optimally, despite the different variables to which it is continuously subject, such as:

- > The combustion air temperature and pressure (intake air used to generate combustion)
- > The back pressure in the generator furnace and the chimney draught
- > The variations in the heating power, flow rate or density of the fuel, whatever it is (methane, LPG or other)
- > The condition of the protection filters
- > The mechanical hysteresis of the regulators
- > The loss of efficiency of mechanical parts

These factors, however, cannot be controlled by the traditional combustion regulation systems currently available on the market.

Regular (annual or semi-annual) checks of the system settings, mandatory by law, help to limit such inefficiencies but are not always enough.

In fact, since a correct operation must be ensured in different ambient conditions, the combustion regulation performed during regular checks never guarantees maximum efficiency.

## BENEFITS OF CO CONTROL OVER O2 ALONE



### HIGHER ENERGY SAVING:

estimated up to +0.5% compared to O2 control



### INDEPENDENT OF EXTERNAL AIR:

the measurement and regulation of combustion is highly reliable as it is independent of external air (infiltration). The O2 control requires a perfect tightness of the connection between boiler, fume duct and chimney, precisely to prevent external air from entering and distorting the O2 probe reading and hence the combustion regulation.



### ABSOLUTE OPERATIONAL SAFETY:

with this system, absolute operational safety is also guaranteed, since unburned gases are directly measured by a CE-certified sensor.

## O2 / CO PROBE AND VFD:

### THE ULTIMATE BENEFIT FOR YOU AND THE ENVIRONMENT



**Attention to the environment and proper use of resources have become an obligation for all business activities.** In Baltur, we see this as an opportunity not only to contribute to the reduction of pollutant emissions, but also to offer significant economic benefits to our customers.



Baltur burners equipped with VFD (Variable Frequency Drive) technology are capable of significantly reducing power consumption, starting from a minimum of 35% savings up to over 45%, depending on the application.



**TBG... SLX ME**  
Electronic modulating  
super Low NOx gas  
burners - FIR

 SUPER Low NOx - FIR

## SUPER LOX NOx GAS burners - FIR



### Features

- New head design with double distribution system
- Independent gas regulation over two channels
- Hinged-opening for a facilitated maintenance
- Programmable electronic cam
- Available in combination with inverter and O2/CO sensor
- Suitable for 72 h continuous operation
- LPG operation



### Your benefits

- Granted NOx emission < 50 mg/kWh
- Lower installation cost respect to FGR solution
- Lower maintenance cost respect to FGR solution
- Lower electrical consumption
- Higher combustion efficiency and fuel saving
- Allows you to adapt the thermal power plants without replacing the boiler



### Patented technology, how does it work

The **exclusive design of the combustion head** is the result of an optimization process of gas and air flow channels with the targets to **reduce NOx emissions and ensure stability over the complete working field of the machine.**

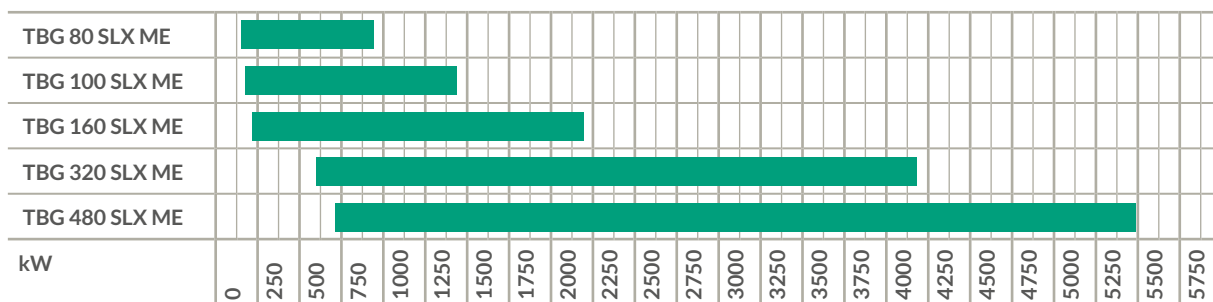
The natural gas supply is separated at gas train level in two different stream lines which serve respectively the central area of the flame and the lateral one.

The independent management of gas flow over different combustion area allow to reach multiple benefits:

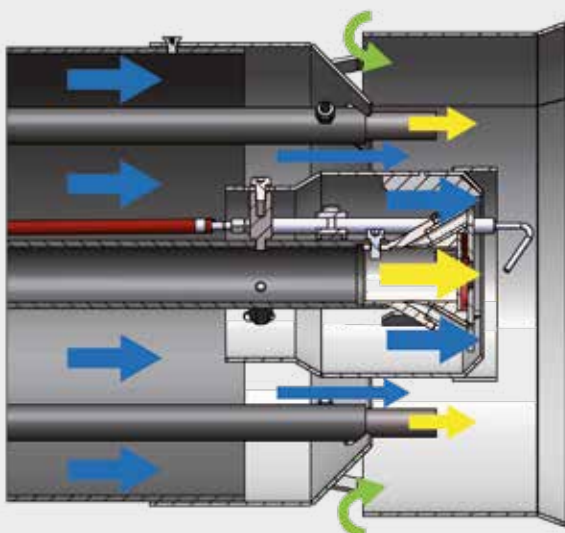
- **Great stability of root flame in any working conditions** reducing vibrations, noise and risk of shut down
- **Low thermal NOx** formation thanks to mixing with flue gas
- **Performance of the machine granted over the complete working field thanks to fine tuning capability.**



## TWO STAGE PROGRESSIVE



NOx emissions  
**<50** mg/kWh



The new concept of combustion head is designed to ensure the **maximum of stability** and performance with **ease of operation**.



TBG 80 - 160 SLX ME

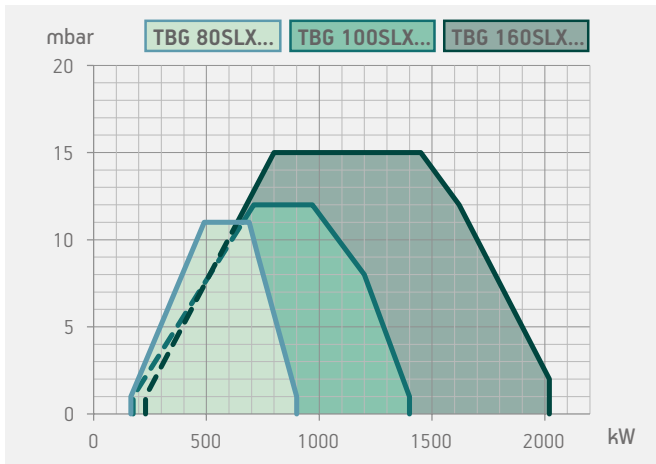
SUPER LOW NOx  
- FIR - BURNERS

	TBG 80 SLX ME	TBG 100 SLX ME	TBG 160 SLX ME
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	○
Modulation ratio	1 : 5	1 : 7	1 : 10
Low NOx and CO emissions gas burner according to European standard EN676:	class 4	class 4	class 4
72 h continuous operation	○	○	○
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	servomotor	servomotor	servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, maximum and minimum pressure switch with gas leakage control, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up/down	up/down	up/down
Secondary gas train outlet:	right/left	right/left	right/left
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●	●
Electric protection rating:	IP40	IP40	IP40
Noise level dB(A)	74	75	79
Residual oxygen (O <sub>2</sub> ) monitoring in the fumes in order to maintain an optimal air/fuel ratio and ensure increased performance	○	○	○
Residual oxygen (O <sub>2</sub> ) and carbon monoxide (CO) and monitoring of oxidizing components (H <sub>2</sub> ) in fumes to ensure increased performance and less atmospheric pollution	○	○	○
VDS fan motor to reduce overall electrical power consumption	○	○	○

**LEGEND:**

○ Optional; ● As standard

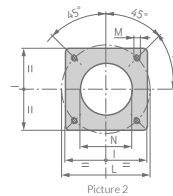
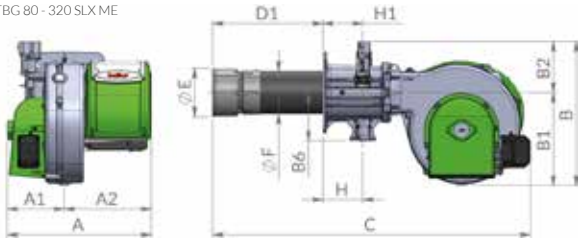




Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 80 SLX	1130	800	663	64,8
TBG 100 SLX	1130	800	663	69,2
TBG 160 SLX	1130	800	663	74,8

SUPER LOW NOX  
- FIR - BURNERS

TBG 80 - 320 SLX ME



Flange dimensions  
and boiler drilling  
template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	H mm	H1 mm	L mm	M mm	N mm	Pic.
TBG 80 SLX	597	237	360	594	386	211	200	1289	448	201	176	328	165	165	278-378	M12	216	2
TBG 100 SLX	597	237	360	594	386	211	200	1289	448	201	176	328	167	165	278-378	M12	216	2
TBG 160 SLX	597	237	360	594	386	211	200	1294	453	250	225	328	167	165	278-378	M12	254	2

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Notes
Frequency 50 Hz							
	class 4	165 ÷ 900	<b>TBG 80 SLX</b>	<b>18240010</b>	3N AC 50Hz 400V	1,5	3) 4)
	class 4	175 ÷ 1400	<b>TBG 100 SLX</b>	<b>18260010</b>	3N AC 50Hz 400V	2,2	3) 4)
	class 4	230 ÷ 2020	<b>TBG 160 SLX</b>	<b>18280010</b>	3N AC 50Hz 400V	3	3) 4)
Frequency 60 Hz							
	class 4	165 ÷ 900	<b>TBG 80 SLX</b>	<b>18245410</b>	3N AC 60Hz 380V	1,5	3) 4)
	class 4	175 ÷ 1400	<b>TBG 100 SLX</b>	<b>18265410</b>	3N AC 60Hz 380V	2,2	3) 4)
	class 4	230 ÷ 2020	<b>TBG 160 SLX</b>	<b>18285410</b>	3N AC 60Hz 380V	3	3) 4)

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating kit	98000059
Modulating probe for LCM 100 (see page 324)	
TBG 80 SLX: LPG nozzle kit 2)	98000447
TBG 100 SLX: LPG nozzle kit 2)	98000448
TBG 160 SLX: LPG nozzle kit 2)	98000449

## NOTE

- Please contact your Sales Representative for the LPG application.
  - Sound proof lid on burner air intake.
  - Equipped with automatic air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	

## GAS BURNER ACCESSORIES

Boiler coupling kit, plug for wiring.

## N.B.

For O2/CO kit combination please refer to the sales department.



TBG 320 SLX ME



TBG 480 SLX ME

SUPER LOW NOx  
- FIR - BURNERS

### TBG 320 SLX ME

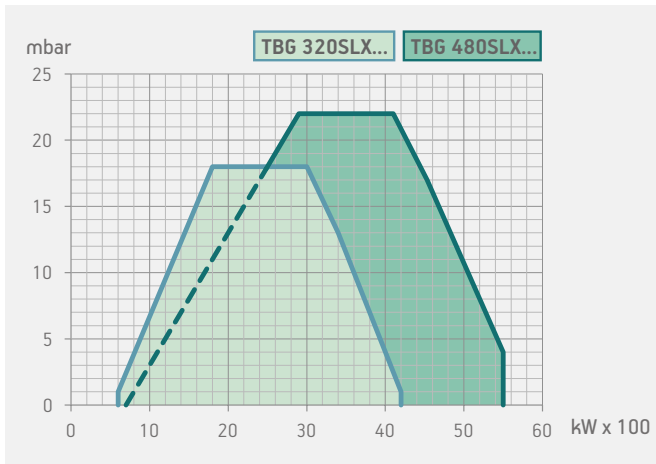
### TBG 480 SLX ME

#### Gas burner compliant with European standard EN676. Operation:

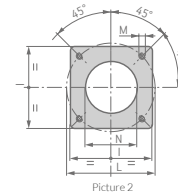
	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio	1 : 7	1 : 8
Low NOx and CO emissions gas burner according to European standard EN676:	class 4	class 4
72 h continuous operation	○	○
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●
Fixed coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	servomotor	servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, maximum and minimum pressure switch with gas leakage control, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	down	down
Secondary gas train outlet:	up	up
Flame detection by ionisation electrode with connector for microamperometer	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54
Noise level dB(A)	81	88
Residual oxygen (O <sub>2</sub> ) monitoring in the fumes in order to maintain an optimal air/fuel ratio and ensure increased performance	○	○
Residual oxygen (O <sub>2</sub> ) and carbon monoxide (CO) and monitoring of oxidizing components (H <sub>2</sub> ) in fumes to ensure increased performance and less atmospheric pollution	○	○
VDS fan motor to reduce overall electrical power consumption	○	○

#### LEGEND:

○ Optional; ● As standard



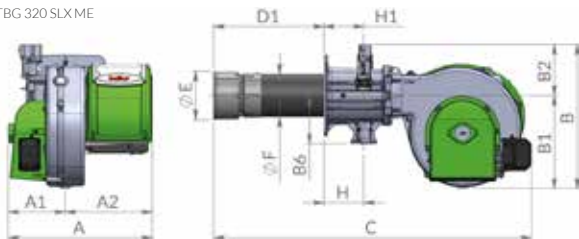
Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 320 SLX	1500	1150	970	197
TBG 480 SLX	1500	1320	970	204



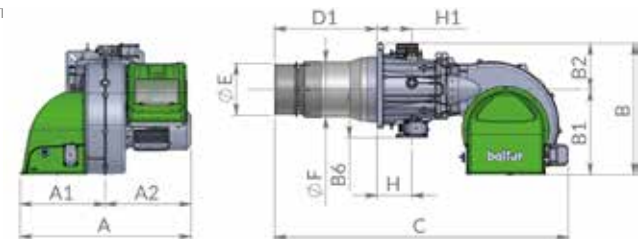
Flange dimensions and boiler drilling template.

SUPER LOW NOX - FIR - BURNERS

TBG 320 SLX ME



1



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	H mm	H1 mm	L mm	M mm	N mm	Pic.
TBG 320 SLX	1060	530	530	810	525	285	295	1820	630	344	410	480	223	223	520-600	M20	415	2
TBG 480 SLX	1110	530	580	810	525	285	295	1840	650	344	410	480	223	223	520-600	M20	415	2

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Notes
Frequency 50 Hz							
	class 4	600 ÷ 4200	<b>TBG 320 SLX</b>	<b>18440010</b>	3N AC 50Hz 400V	11	3) 4)
	class 4	700 ÷ 5500	<b>TBG 480 SLX</b>	<b>18460010</b>	3N AC 50Hz 400V	15	3) 4)
Frequency 60 Hz							
	class 4	600 ÷ 4200	<b>TBG 320 SLX</b>	<b>18445410</b>	3N AC 60Hz 380V	11	3) 4)
	class 4	700 ÷ 5500	<b>TBG 480 SLX</b>	<b>18465410</b>	3N AC 60Hz 380V	15	3) 4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating kit	98000059
Modulating probe for LCM 100 (see page 324)	

### NOTE

- 2 Please contact your Sales Representative for the LPG application.
  - 3 Sound proof lid on burner air intake.
  - 4 Equipped with automatic air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	

### GAS BURNER ACCESSORIES

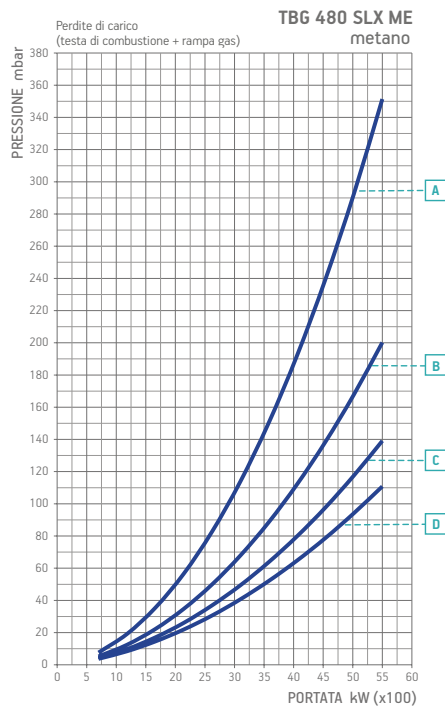
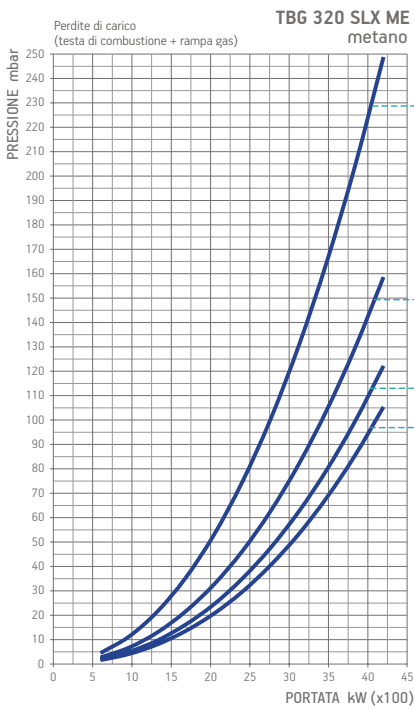
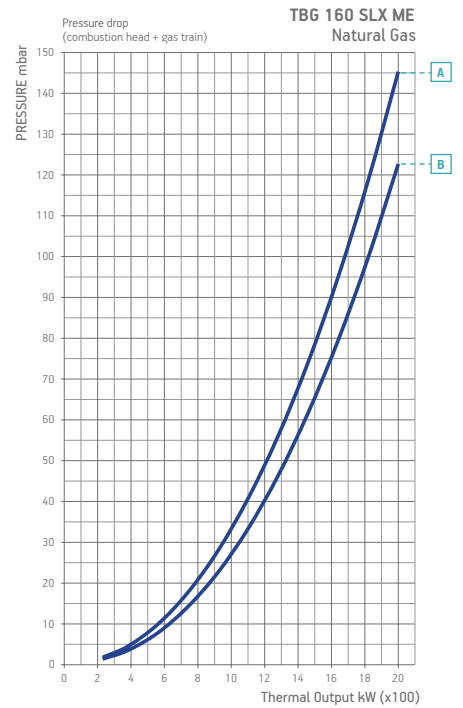
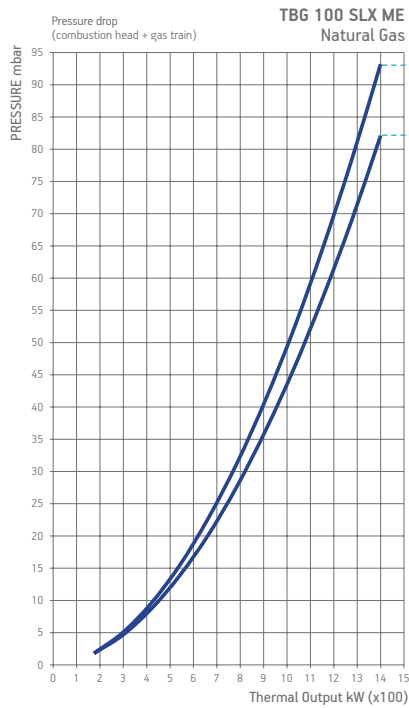
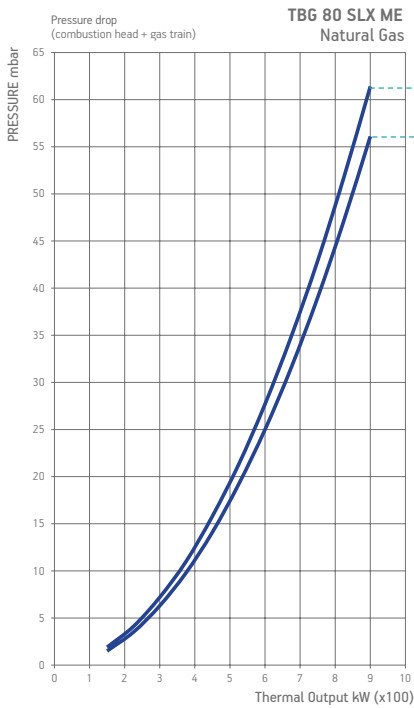
Boiler coupling kit, plug for wiring.

### N.B.

For O2/CO kit combination please refer to the sales department.

## BURNER/GAS TRAIN MATCH

SUPER LOW NOX  
- FIR - BURNERS





### BURNER/GAS TRAIN MATCH

CE GAS TRAIN VERSION COMPLIES WITH EN676, EXP GAS TRAIN VERSION IS FOR EXTRA-EUROPEAN MARKETS.

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Notes
						Part no.	Part no.	Part no.	Part no.		
TBG 80 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990668	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990734	Included	-	Included	F1	
TBG 100 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990668	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990734	Included	-	Included	F1	
TBG 160 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990668	Included	-	Included	F1	
		B	CE/EXP	200	CTV	19990734	Included	-	Included	F1	
TBG 320 SLX	Natural gas	A	CE/EXP	500	CTV	19990675	Included	-	Included	F1	
		B	CE/EXP	500	CTV	19990676	Included	-	Included	F1	
		C	CE/EXP	500	CTV	19990677	Included	-	Included	F1	
		D	CE/EXP	500	CTV	19990678	Included	-	Included	F1	
		B	CE/EXP	500	CTV	19990762	Included	-	Included	F1	
		C	CE/EXP	500	CTV	19990763	Included	-	Included	F1	
		D	CE/EXP	500	CTV	19990764	Included	-	Included	F1	
TBG 480 SLX	Natural gas	A	CE/EXP	500	CTV	19990675	Included	-	Included	F1	
		B	CE/EXP	500	CTV	19990676	Included	-	Included	F1	
		C	CE/EXP	500	CTV	19990677	Included	-	Included	F1	
		D	CE/EXP	500	CTV	19990678	Included	-	Included	F1	
		B	CE/EXP	500	CTV	19990762	Included	-	Included	F1	
		C	CE/EXP	500	CTV	19990763	Included	-	Included	F1	
		D	CE/EXP	500	CTV	19990764	Included	-	Included	F1	

SUPER LOW NOX  
- FIR - BURNERS

### NOTES

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.

**TBG... LX ME FGR**  
 Modulating gas burners with electronic modulation and flue gas recirculation system (FGR).

Low NOx

## GAS BURNERS FGR FLUE GAS RECIRCULATION

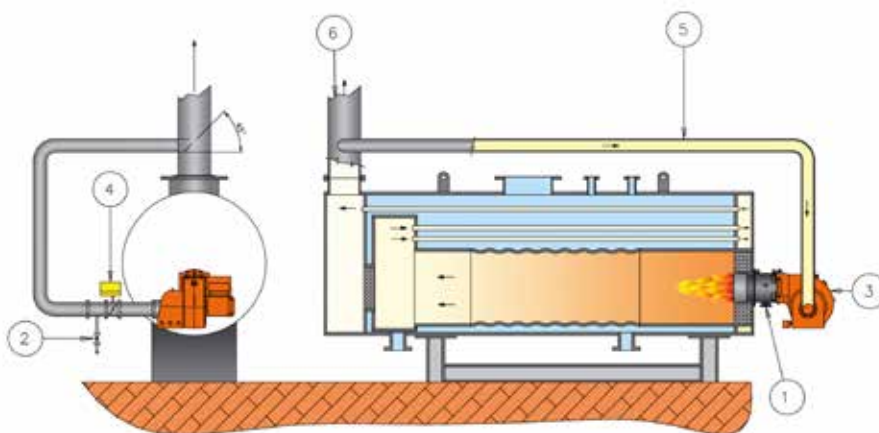
The flue gas recirculation system (FGR) is a technique to reduce NOx emissions which is increasingly spreading thanks to the growing attention to environmental issues.

Today it represents the best compromise between costs and benefits, with a performance in terms of NOx reduction that is hard to reach with traditional burners.

The cost of FGR system implementation is relatively low if compared with the other methods for NOx reduction, and such system can be installed on existing plants.

With regard to the above, it is always recommended to contact the burner manufacturer for sizing and for the choice of fume recirculation system components.

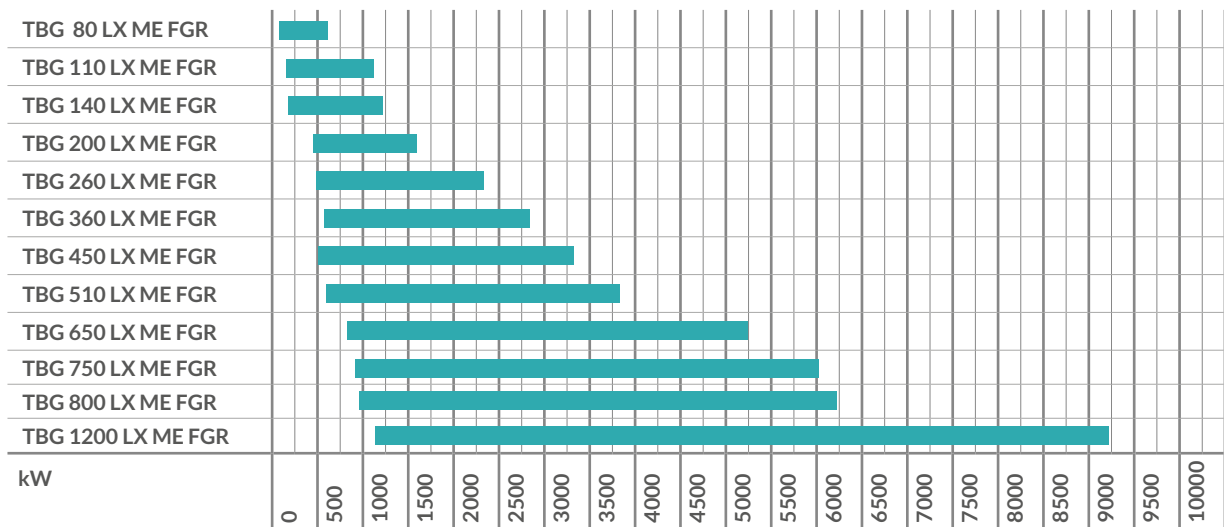
### FGR INSTALLATION SCHEME FOR MONOBLOCK BURNERS



MONOBLOCK FGR BURNER

- 1 Gas inlet.
- 2 Condensate drainage valve.
- 3 Burner.
- 4 Fume damper with servomotor.
- 5 Duct for fume recirculation.
- 6 Chimney.

## MODULATING ELECTRONIC



NOx emissions  
**<30 mg/Nm<sup>3</sup>** over the all working field

Below recommended chamber dimensions table are based on below conditions:

Steam boiler, features:

- P = 12 bar, T vap. = 198°C, T fumi = 230°C;
- Hot-water boiler;
- The combustion chamber is three-pass;
- The length is total, therefore sum between the combustion chamber and the inversion chamber.
- The fume extraction fitting on the chimney positioned before the heat exchanger;
- Suggested thermal load: 0,9 < C.T. < 1,2 [MW / m<sup>3</sup>];
- Based on above situations, NOx emission of Baltur FGR burner is less than 30mg/Nm<sup>3</sup>.

Baltur burner model	Boiler output (three-pass) kW	Chamber diameter [mm]	Chamber length [mm]	Chamber volume [m <sup>3</sup> ]	Burner output [kW]	Thermal load [MW/m <sup>3</sup> ]
TBG 80 LX ME FGR	350	550	1.400	0,33	383,50	1,15
TBG 110 LX ME FGR	690	680	1.950	0,71	767,00	1,08
TBG 140 LX ME FGR	1.040	740	2.350	1,01	1.150,50	1,14
TBG 260 LX ME FGR	1.380	800	2.650	1,33	1.534,00	1,15
TBG 360 LX ME FGR	2.070	950	2.950	2,09	2.301,00	1,10
TBG 450 LX ME FGR	2.760	1.000	3.400	2,67	3.068,00	1,15
TBG 510 LX ME FGR	3.450	1.100	3.600	3,42	3.835,00	1,12
TBG 650 LX ME FGR	4.140	1.190	3.950	4,39	4.602,00	1,05
TBG 750 LX ME FGR	4.830	1.230	4.400	5,23	5.369,00	1,03
TBG 800 LX ME FGR	5.520	1.270	4.700	5,95	6.136,00	1,03
TBG 1200 LX ME FGR	6.900	1.400	5.250	8,08	7.670,00	0,95



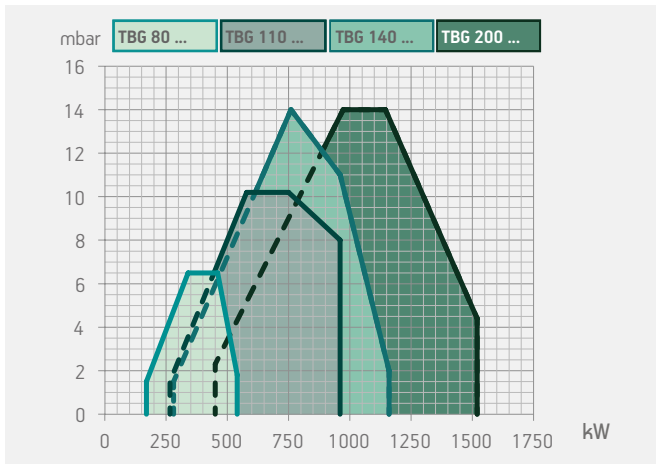
FGR  
GAS BURNERS

Gas burner operation:	TBG 80	TBG 110	TBG 140	TBG 200
	LX ME FGR	LX ME FGR	LX ME FGR	LX ME FGR
	modulating electronic	modulating electronic	modulating electronic	modulating electronic
Modulation ratio:	1:3	1:3	1:4	1:3
NOx <30 mg/Nm <sup>3</sup> over the all working field	•	•	•	•
Adjusting the combustion head	•	•	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•	•	•
High ventilation efficiency, low electrical input, low noise	•	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•	•	•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	•	•	•
Device made of sound-absorbing material to reduce fan noise	•	•	•	•
Stainless steel exhaust smoke inlet joint with probe well, integrated with stainless steel butterfly damper for adjusting the flue gas door with electric servomotor	•	•	•	•
Protective case of UV photocell	•	•	•	•
Cleaning and cooling system of the UV photocell with air compressor	○	○	○	○
Condensate water drain through manual valves for schell and exhaust smoke inlet joint	•	•	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	•	•	•	•
Fail proof connectors for burner/gas train connection	•	•	•	•
Gas train outlet:	up/down	up/down	up/down	up/down
Flame detection by UV photocell	•	•	•	•
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	•	•	•	•
Electric protection rating:	IP40	IP40	IP40	IP40

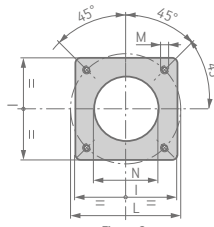
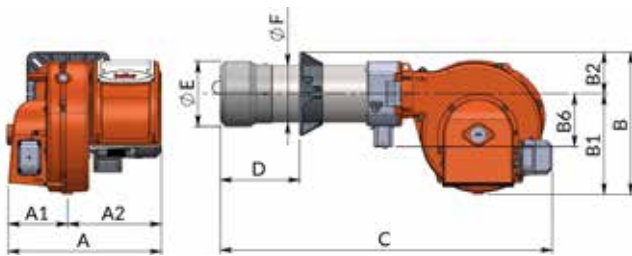
### LEGEND:

○ Optional; • As standard





Model	Size of packaging			Weight kg
	Larg.	Prof. mm	Alt.	
TBG 80 LX ME FGR	1070	800	700	93
TBG 110 LX ME FGR	1070	800	700	103
TBG 140 LX ME FGR	1070	800	700	108
TBG 200 LX ME FGR	1530	760	700	111



Flange dimensions and boiler drilling template.

Model	I mm	L mm	M mm	N mm
TBG 80 LX ME FGR	280	250 ÷ 325	M12	190
TBG 110 LX ME FGR	320	280 ÷ 370	M12	250
TBG 140 LX ME FGR	320	280 ÷ 370	M12	250
TBG 200 LX ME FGR	320	280 ÷ 370	M12	255

Model	A mm	A2 mm	A5 mm	B mm	B1 mm	B2 mm	B6 mm	B8 mm	C mm	D mm	E mm	F mm	G2 ø	H2 mm
TBG 80 LX ME FGR	820	370	450	730	510	220	200	157	1265	175 ÷ 400	180	178	DN65	550 ÷ 775
TBG 110 LX ME FGR	820	370	450	730	510	220	200	157	1315	200 ÷ 450	240	219	DN65	540 ÷ 790
TBG 140 LX ME FGR	830	370	460	730	510	220	200	157	1315	200 ÷ 450	240	219	DN80	540 ÷ 790
TBG 200 LX ME FGR	830	370	460	730	510	220	200	157	1315	200 ÷ 450	250	219	DN80	540 ÷ 790

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	NOx < 30 mg/Nm <sup>3</sup>	170 ÷ 540	<b>TBG 80 LX ME FGR</b>	<b>17530040</b>	3N AC 50Hz 400V	1,1	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	265 ÷ 960	<b>TBG 110 LX ME FGR</b>	<b>17600040</b>	3N AC 50Hz 400V	1,5	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	280 ÷ 1160	<b>TBG 140 LX ME FGR</b>	<b>17670040</b>	3N AC 50Hz 400V	2,2	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	450 ÷ 1520	<b>TBG 200 LX ME FGR</b>	<b>17740040</b>	3N AC 50Hz 400V	3,0	3) 4)
Frequency 60 Hz							
	NOx < 30 mg/Nm <sup>3</sup>	170 ÷ 540	<b>TBG 80 LX ME FGR</b>	<b>17535440</b>	3N AC 60Hz 380V	1,1	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	265 ÷ 960	<b>TBG 110 LX ME FGR</b>	<b>17605440</b>	3N AC 60Hz 380V	1,5	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	280 ÷ 1160	<b>TBG 140 LX ME FGR</b>	<b>17675440</b>	3N AC 60Hz 380V	2,2	3) 4)
	NOx < 30 mg/Nm <sup>3</sup>	450 ÷ 1520	<b>TBG 200 LX ME FGR</b>	<b>17745440</b>	3N AC 60Hz 380V	3,0	3) 4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	98000059
UV safe kit (see page 324)	

### NOTE

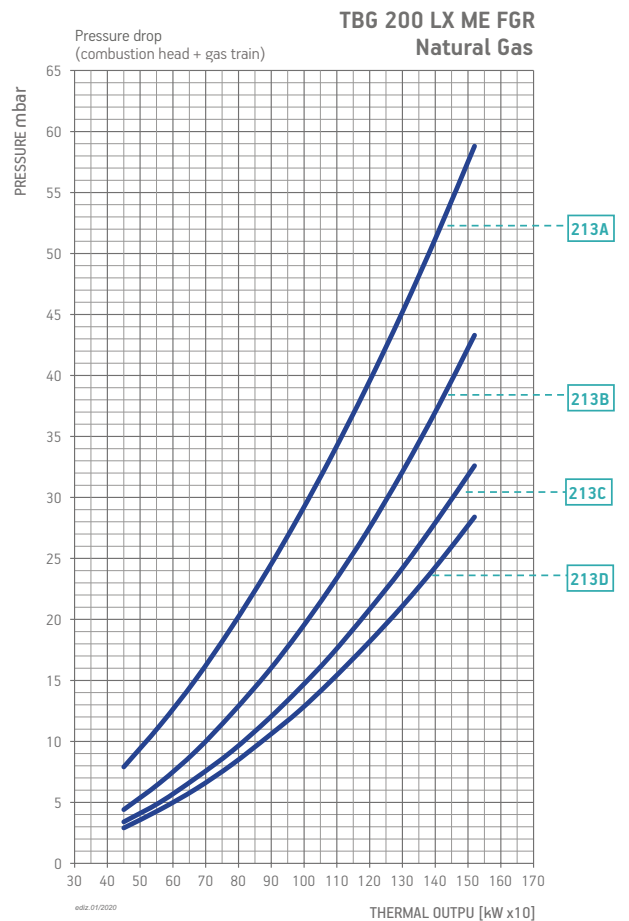
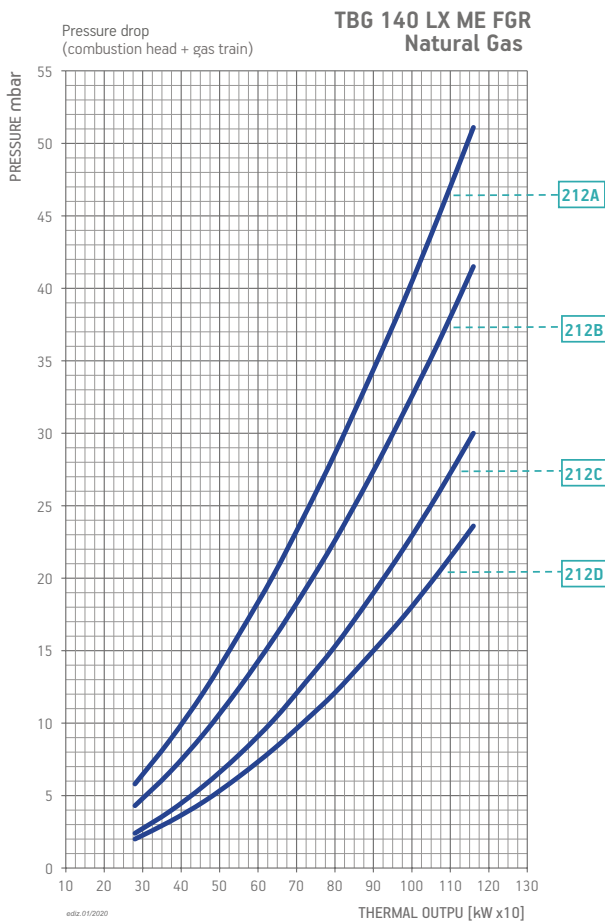
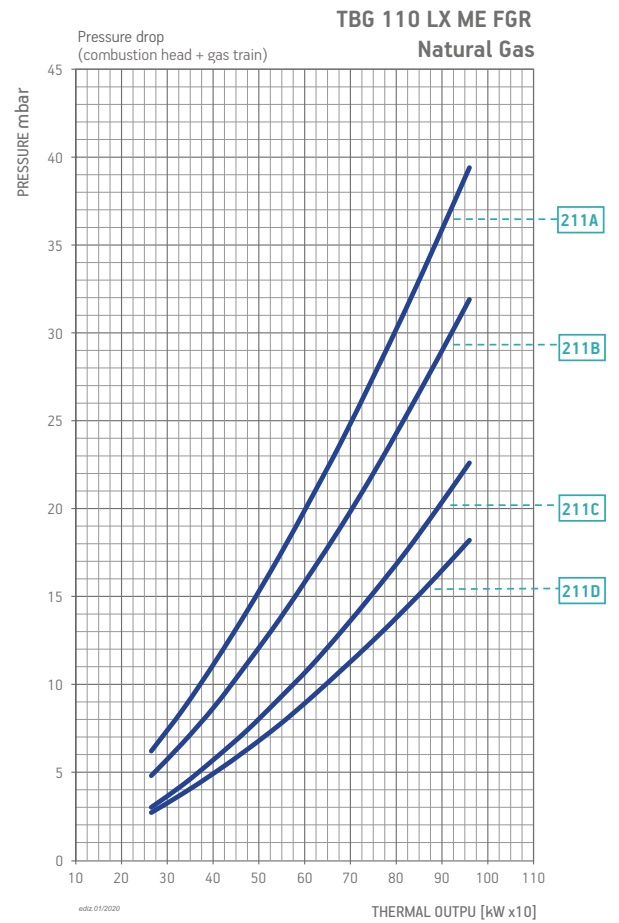
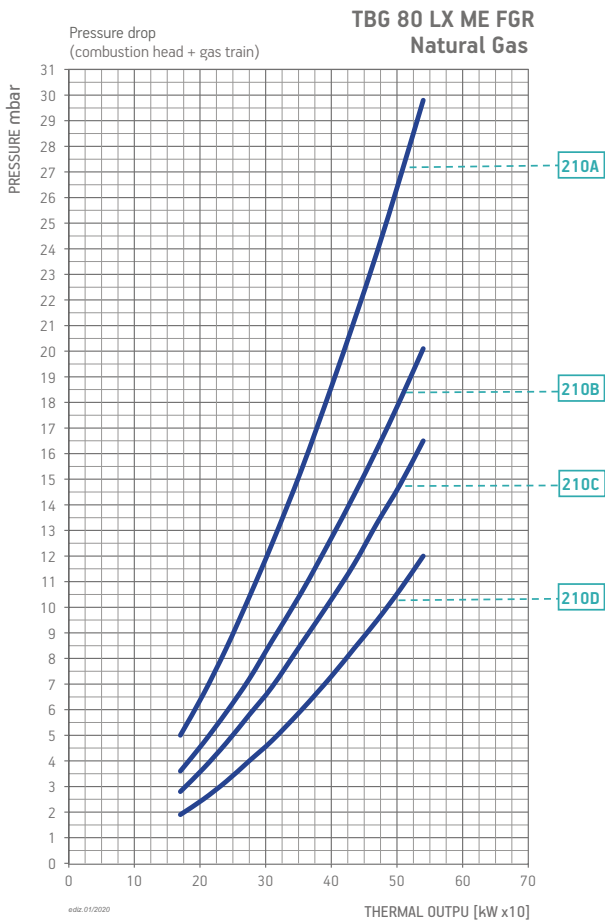
- 3 Sound proof lid on burner air intake.
  - 4 Equipped with air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

## BURNER/GAS TRAIN MATCH

FGR  
GAS BURNERS



## BURNER/GAS TRAIN MATCH

Burner Model	Gas type	Curve on graph	P <sub>Max</sub> ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.
					Part no.	Part no.	Part no.	Part no.	
TBG 80 LX ME FGR	Natural gas	210A	360	CTV	19990557	Included	96000032	Included	D2
		210B	360	CTV	19990558	Included	96000007	Included	D2
		210C	360	CTV	19990559	Included	-	Included	D2
		210D	500	CTV	19990524	Included	-	Included	D2
TBG 110 LX ME FGR	Natural gas	211A	360	CTV	19990561	Included	96000007	Included	D2
		211B	360	CTV	19990562	Included	-	Included	D2
		211C	500	CTV	19990524	Included	-	Included	D2
		211D	500	CTV	19990525	Included	-	Included	D2
TBG 140 LX ME FGR	Natural gas	212A	360	CTV	19990561	Included	96000007	Included	D2
		212B	360	CTV	19990562	Included	-	Included	D2
		212C	500	CTV	19990524	Included	-	Included	D2
		212D	500	CTV	19990525	Included	-	Included	D2
TBG 200 LX ME FGR	Natural gas	213A	360	CTV	19990562	Included	-	Included	D2
		213B	500	CTV	19990524	Included	-	Included	D2
		213C	500	CTV	19990525	Included	-	Included	D2
		213D	500	CTV	19990526	Included	-	Included	D2

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

#### NOTES

CTV) Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



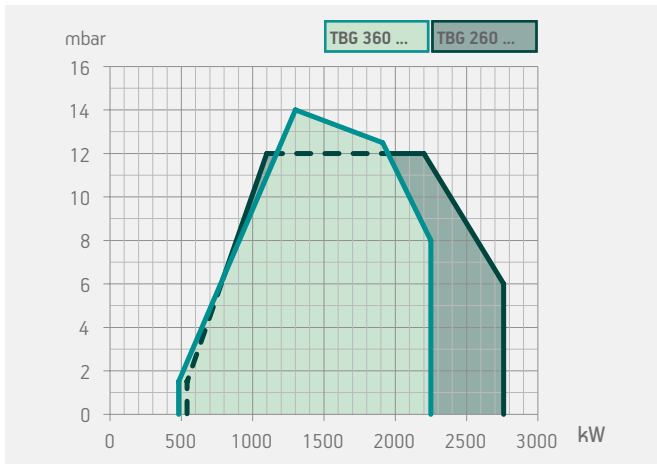
FGR  
GAS BURNERS

Gas burner operation:	TBG 260 LX ME FGR	TBG 360 LX ME FGR
	modulating electronic	modulating electronic
Modulation ratio:	1:4	1:5
NOx <30 mg/Nm <sup>3</sup> over the all working field	•	•
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
Stainless steel exhaust smoke inlet joint with probe well, integrated with stainless steel butterfly damper for adjusting the flue gas door with electric servomotor	•	•
Protective case of UV photocell	•	•
Cleaning and cooling system of the UV photocell with air compressor	○	○
Condensate water drain through manual valves for schell and exhaust smoke inlet joint	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up/down	up/down
Flame detection by UV photocell	•	•
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	•	•
Electric protection rating:	IP40	IP 40

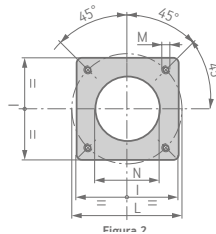
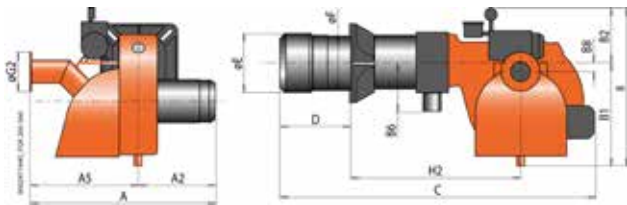
### LEGEND:

○ Optional; • As standard





Model	Size of packaging			Weight kg
	Larg.	Prof. mm	Alt.	
TBG 260 LX ME FGR	1070	870	810	132
TBG 360 LX ME FGR	1070	870	810	135



Flange dimensions and boiler drilling template.

Model	I mm	L mm	M mm	N mm
TBG 260 LX ME FGR	320	280 ÷ 370	M12	275
TBG 360 LX ME FGR	320	310 ÷ 370	M12	275

Model	A mm	A2 mm	A5 mm	B mm	B1 mm	B2 mm	B6 mm	B8 mm	C mm	D mm	E mm	F mm	G2 ø	H2 mm
TBG 260 LX ME FGR	1100	420	680	795	510	285	200	100	1350	200 ÷ 450	270	219	DN100	545 ÷ 795
TBG 360 LX ME FGR	1100	420	680	795	510	285	200	100	1350	200 ÷ 450	270	219	DN100	545 ÷ 795

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	480 ÷ 2250	<b>TBG 260 LX ME FGR</b>	<b>17780040</b>	3N AC 50Hz 400V	5,5	3) 4)
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	540 ÷ 2760	<b>TBG 360 LX ME FGR</b>	<b>17950040</b>	3N AC 50Hz 400V	7,5	3) 4)
Frequency 60 Hz							
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	480 ÷ 2250	<b>TBG 260 LX ME FGR</b>	<b>17785440</b>	3N AC 60Hz 380V	5,5	3) 4)
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	540 ÷ 2760	<b>TBG 360 LX ME FGR</b>	<b>17955440</b>	3N AC 60Hz 380V	7,5	3) 4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	98000059
UV safe kit (see page 324)	

### NOTE

- 3 Sound proof lid on burner air intake.
- 4 Equipped with air closure device.

Net calorific value at reference conditions of 0°C, 1013mbar:

Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>.

LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.

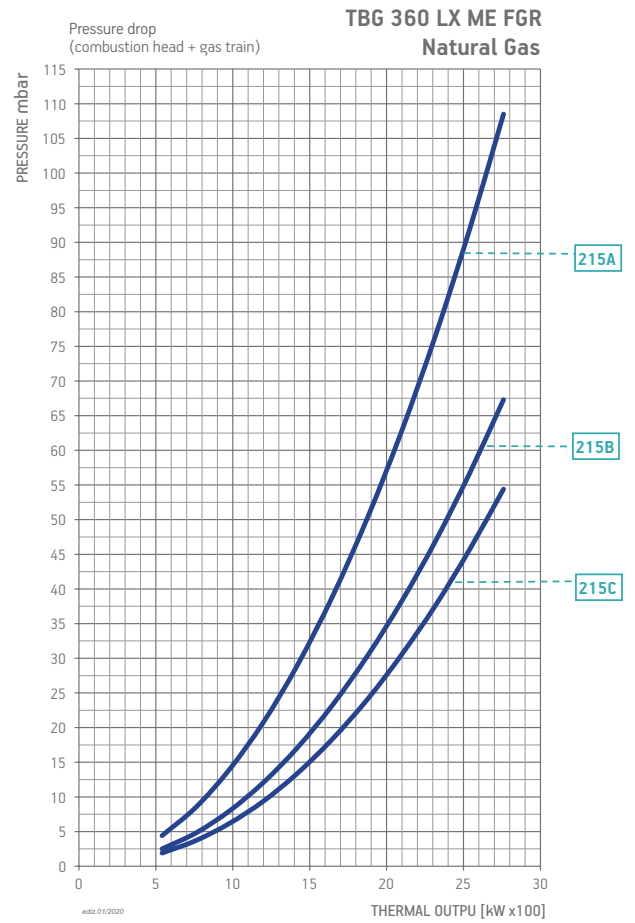
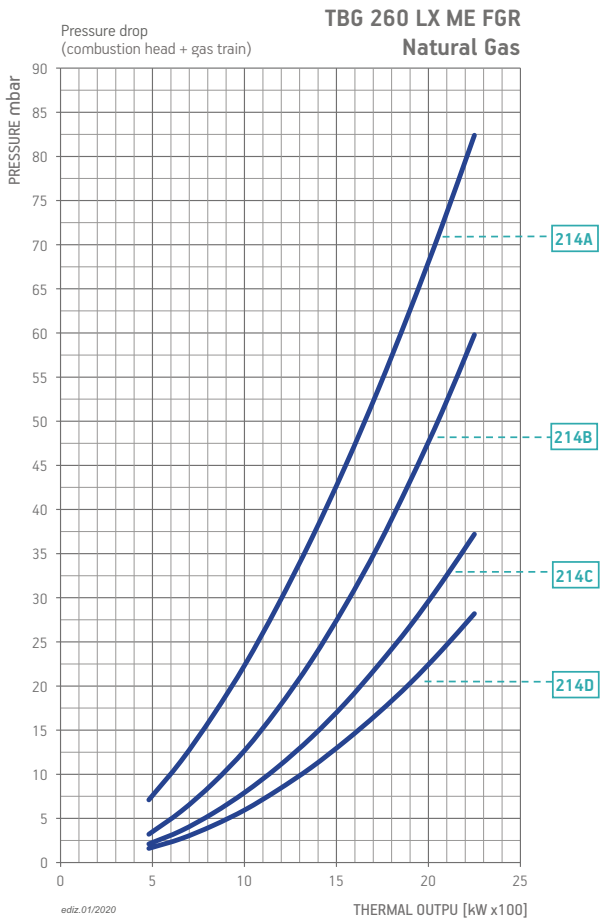
For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### BURNER/GAS TRAIN MATCH

FGR  
GAS BURNERS



## BURNER/GAS TRAIN MATCH

Burner Model	Gas type	Curve on graph	P,Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 260 LX ME FGR	Natural gas	214A	360	CTV	19990562	Included		Included		D2
		214B	500	CTV	19990524	Included	-	Included		D2
		214C	500	CTV	19990525	Included	-	Included		D2
		214D	500	CTV	19990526	Included	-	Included		D2
TBG 360 LX ME FGR	Natural gas	215A	500	CTV	19990524	Included	96000035	Included		D2
		215B	500	CTV	19990577	Included	-	Included		D2
		215C	500	CTV	19990578	Included	-	Included		D2

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

**NOTE**

CTV) Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



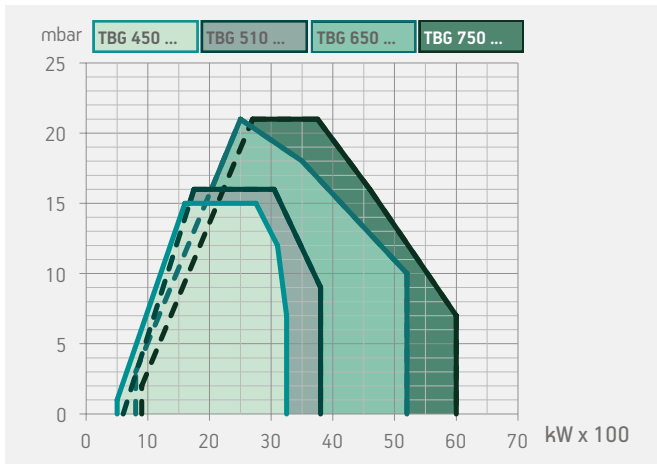
FGR  
GAS BURNERS

	TBG 450 LX ME FGR	TBG 510 LX ME FGR	TBG 650 LX ME FGR	TBG 750 LX ME FGR
<b>Gas burner operation:</b>	modulating electronic	modulating electronic	modulating electronic	modulating electronic
Modulation ratio:	1:6	1:6	1:6	1:6
NOx <30 mg/Nm <sup>3</sup> over the all working field	●	●	●	●
Adjusting the combustion head	●	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●	●
Stainless steel exhaust smoke inlet joint with probe well, integrated with stainless steel butterfly damper for adjusting the flue gas door with electric servomotor	●	●	●	●
Protective case of UV photocell	●	●	●	●
Cleaning and cooling system of the UV photocell with air compressor	○	○	○	○
Condensate water drain through manual valves for schell and exhaust smoke inlet joint	●	●	●	●
Gas train in Version CE composta da valvola farfalla, valvola di funzionamento e di sicurezza ad azionamento elettromagnetico, controllo tenuta valvole, pressostato di massima e di minima, regolatore di pressione e filtro gas.	●	●	●	●
Fail proof connectors for burner/gas train connection.	●	●	●	●
Gas train outlet:	up/down	up/down	up/down	up/down
Flame detection by UV photocell	●	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●	●	●
Electric protection rating:	IP40 *)	IP40 *)	IP40 *)	IP40 *)

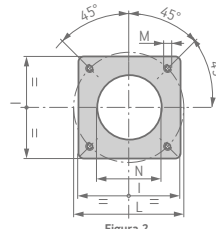
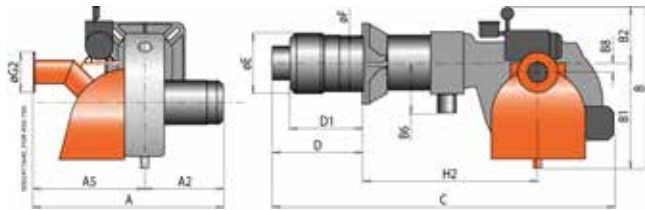
### LEGEND:

\*) IP54 on request; ○ Optional; ● As standard





Model	Size of packaging			Weight kg
	Larg.	Prof. mm	Alt.	
TBG 450 LX ME FGR	1500	1320	970	250
TBG 510 LX ME FGR	1500	1320	970	260
TBG 650 LX ME FGR	1500	1320	970	270
TBG 750 LX ME FGR	1500	1320	970	307



Flange dimensions and boiler drilling template.

Model	I mm	L mm	M mm	N mm
TBG 450 LX ME FGR	480	520 ÷ 600	M20	415
TBG 510 LX ME FGR	480	520 ÷ 600	M20	415
TBG 650 LX ME FGR	480	520 ÷ 600	M20	415
TBG 750 LX ME FGR	480	520 ÷ 600	M20	415

Model	A mm	A2 mm	A5 mm	B mm	B1 mm	B2 mm	B6 mm	B8 mm	C mm	D mm	D1 mm	E mm	F mm	G2 ø	H2 mm
TBG 450 LX ME FGR	1245	530	715	930	645	285	295	45	1820	625	575 ÷ 625	397	410	DN150	800
TBG 510 LX ME FGR	1245	530	715	930	645	285	295	45	1820	625	575 ÷ 625	397	410	DN150	800
TBG 650 LX ME FGR	1295	580	715	930	645	285	295	45	1840	645	560 ÷ 610	397	410	DN150	800
TBG 750 LX ME FGR	1365	650	715	930	645	285	295	45	1840	645	560 ÷ 610	397	410	DN150	800

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	NOx < 30 mg/Nm <sup>3</sup>	500 ÷ 3250	<b>TBG 450 LX ME FGR</b>	<b>18110040</b>	3N AC 50Hz 400V	9,2	4)
	NOx < 30 mg/Nm <sup>3</sup>	600 ÷ 3800	<b>TBG 510 LX ME FGR</b>	<b>18140040</b>	3N AC 50Hz 400V	11,0	4)
	NOx < 30 mg/Nm <sup>3</sup>	800 ÷ 5200	<b>TBG 650 LX ME FGR</b>	<b>18170040</b>	3N AC 50Hz 400V	15,0	4)
	NOx < 30 mg/Nm <sup>3</sup>	900 ÷ 6000	<b>TBG 750 LX ME FGR</b>	<b>18200040</b>	3N AC 50Hz 400V	18,5	4)
Frequency 60 Hz							
	NOx < 30 mg/Nm <sup>3</sup>	500 ÷ 3250	<b>TBG 450 LX ME FGR</b>	<b>18115440</b>	3N AC 60Hz 380V	9,2	4)
	NOx < 30 mg/Nm <sup>3</sup>	600 ÷ 3800	<b>TBG 510 LX ME FGR</b>	<b>18145440</b>	3N AC 60Hz 380V	11,0	4)
	NOx < 30 mg/Nm <sup>3</sup>	800 ÷ 5200	<b>TBG 650 LX ME FGR</b>	<b>18175440</b>	3N AC 60Hz 380V	15,0	4)
	NOx < 30 mg/Nm <sup>3</sup>	900 ÷ 6000	<b>TBG 750 LX ME FGR</b>	<b>18205440</b>	3N AC 60Hz 380V	18,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	98000059
UV safe kit (see page 324)	

### NOTE

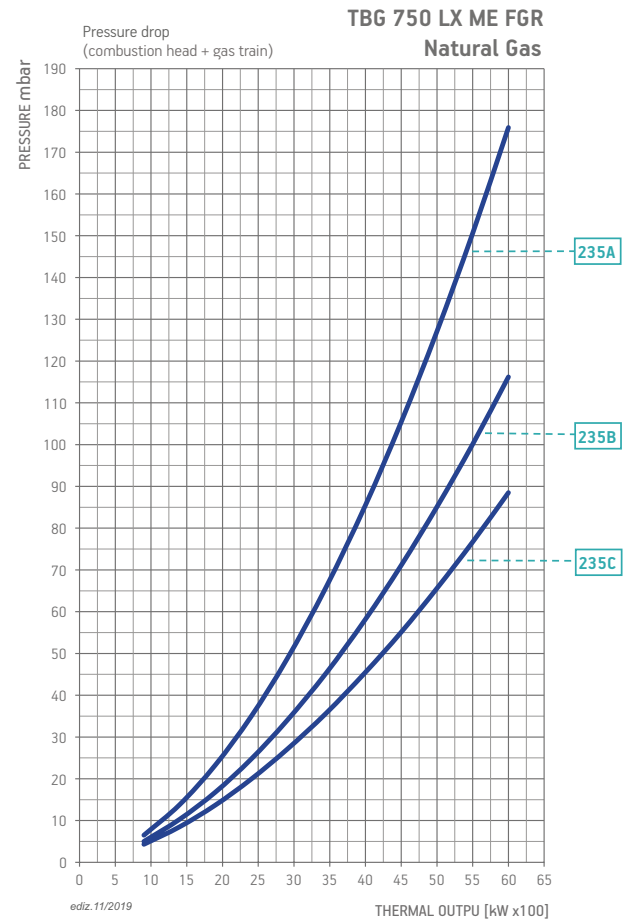
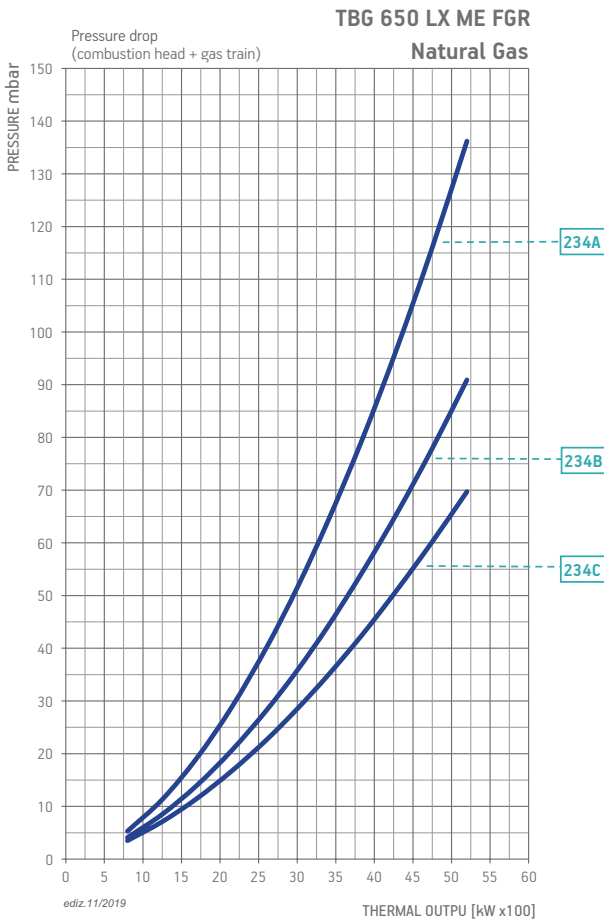
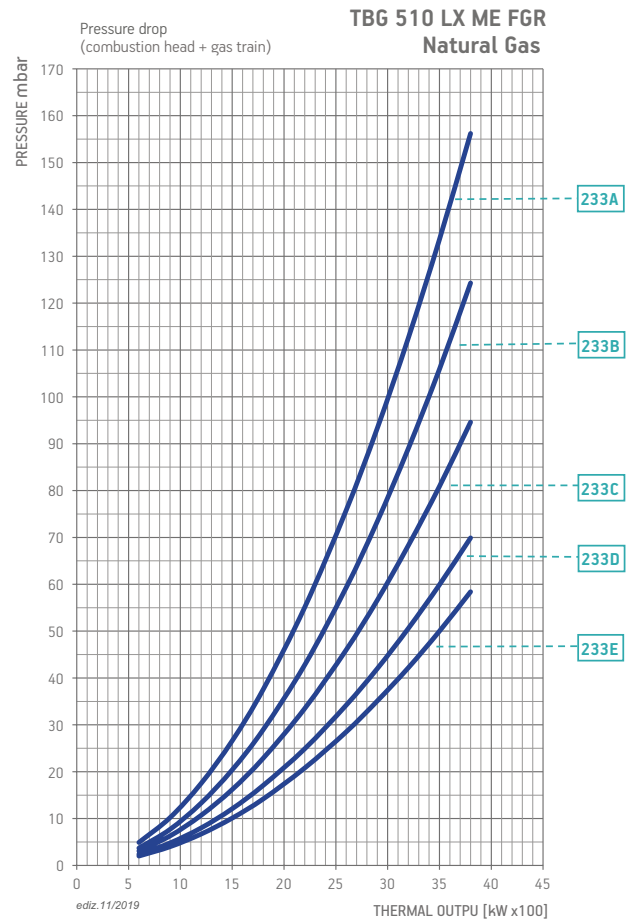
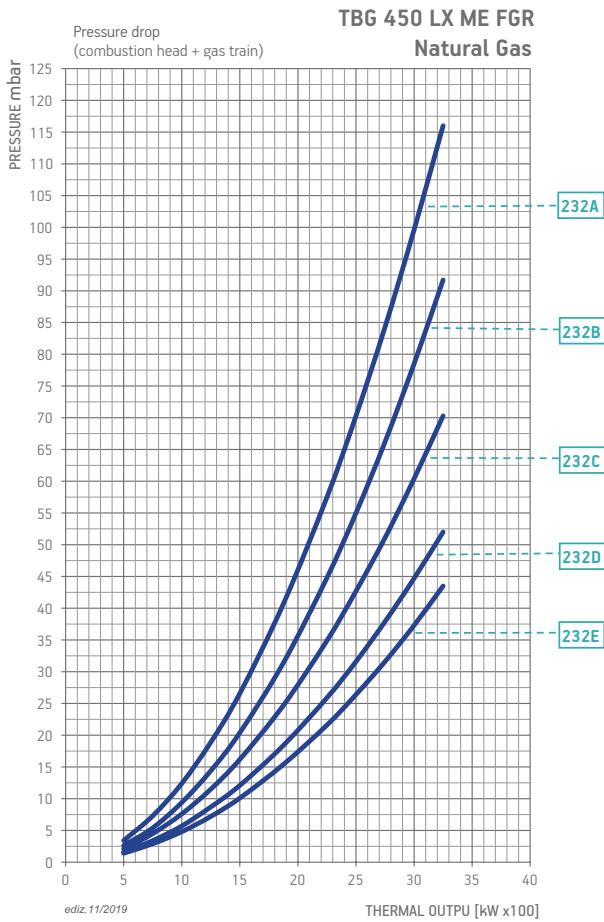
4 Equipped with air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### BURNER/GAS TRAIN MATCH

FGR  
GAS BURNERS



## BURNER/GAS TRAIN MATCH

Burner Model	Gas type	Curve on graph	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 450 LX ME FGR	Natural gas	232A	500	CTV	19990541	Included	-	Included	D4	
		232B	500	CTV	19990666	Included	-	Included	D4	
		232C	500	CTV	19990542	Included	-	Included	D4	
		232D	500	CTV	19990543	Included	-	Included	D4	
		232E	500	CTV	19990544	Included	-	Included	D4	
TBG 510 LX ME FGR	Natural gas	233A	500	CTV	19990541	Included	-	Included	D4	
		233B	500	CTV	19990666	Included	-	Included	D4	
		233C	500	CTV	19990542	Included	-	Included	D4	
		233D	500	CTV	19990543	Included	-	Included	D4	
		233E	500	CTV	19990544	Included	-	Included	D4	
TBG 650 LX ME FGR	Natural gas	234A	500	CTV	19990542	Included	-	Included	D4	
		234B	500	CTV	19990543	Included	-	Included	D4	
		234C	500	CTV	19990544	Included	-	Included	D4	
TBG 750 LX ME FGR	Natural gas	235A	500	CTV	19990542	Included	-	Included	D4	
		235B	500	CTV	19990543	Included	-	Included	D4	
		235C	500	CTV	19990544	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV) Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



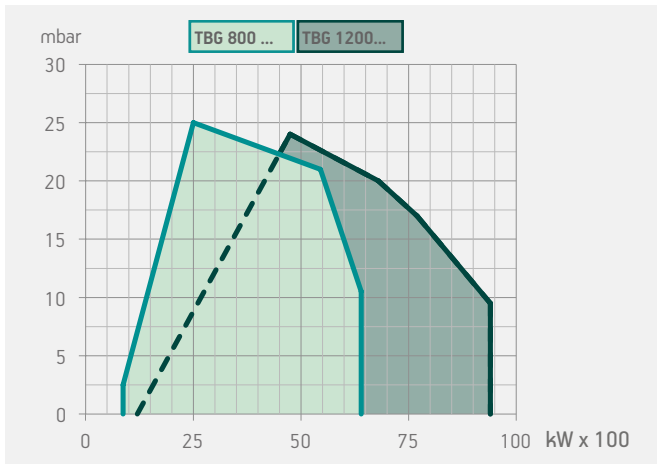
FGR  
GAS BURNERS

Gas burner operation:	TBG 800 LX ME FGR	TBG 1200 LX ME FGR
	modulating electronic	modulating electronic
Modulation ratio:	1:7	1:7
NOx <30 mg/Nm <sup>3</sup> over the all working field	•	•
Adjusting the combustion head		•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
Fixed boiler coupling flange.	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Device made of sound-absorbing material to reduce fan noise	•	
Stainless steel exhaust smoke inlet joint with probe well, integrated with stainless steel butterfly damper for adjusting the flue gas door with electric servomotor	•	•
Protective case of UV photocell	•	•
Cleaning and cooling system of the UV photocell with air compressor	○	○
Condensate water drain through manual valves for schell and exhaust smoke inlet joint	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter.	•	•
Fail proof connectors for burner/gas train connection.	•	•
Gas train outlet:	up/down	up/down
Flame detection by UV photocell	•	•
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	•	•
Electric protection rating:	IP40 *)	IP40 *)

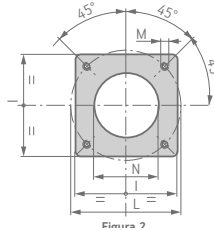
### LEGEND:

\*) IP54 on request; ○ Optional; • As standard



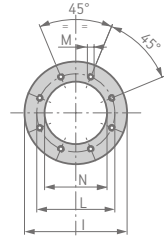
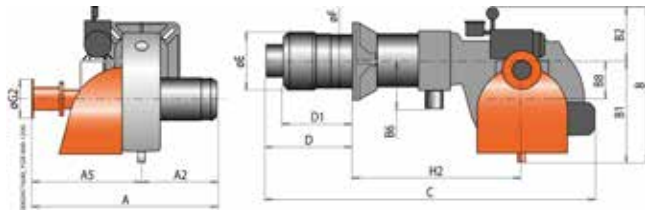


Model	Size of packaging			Weight kg
	Larg.	Prof. mm	Alt.	
TBG 800 LX ME FGR	1950	1510	1210	508
TBG 1200 LX ME FGR	1950	1680	1300	660



Flange dimensions and boiler drilling template.

Model	I mm	L mm	M mm	N mm
TBG 800 LX ME FGR	520	594	M20	440



Model	I mm	L mm	M mm	N mm
TBG 1200 LX ME FGR	685	630	M20	515

Model	A mm	A2 mm	A5 mm	B mm	B1 mm	B2 mm	B6 mm	B8 mm	C mm	D mm	D1 mm	E mm	F mm	G2 ø	H2 mm
TBG 800 LX ME FGR	1630	660	970	1160	870	290	310	420	1900	610	520 ÷ 580	425	432	DN150	835
TBG 1200 LX ME FGR	1785	770	1015	1250	900	350	360	430	2320	780	670	485	503	DN200	1035

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	870 ÷ 6400	<b>TBG 800 LX ME FGR</b>	<b>67220040</b>	3N AC 50Hz 400V	18,5	4)
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	1200 ÷ 9400	<b>TBG 1200 LX ME FGR</b>	<b>67260040</b>	3N AC 50Hz 400V	22,0	4)
Frequency 60 Hz							
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	870 ÷ 6400	<b>TBG 800 LX ME FGR</b>	<b>67225440</b>	3N AC 60Hz 380V	18,5	4)
	NO <sub>x</sub> < 30 mg/Nm <sup>3</sup>	1200 ÷ 9400	<b>TBG 1200 LX ME FGR</b>	<b>67265440</b>	3N AC 60Hz 380V	22,0	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	98000059
UV safe kit (see page 324)	

### NOTE

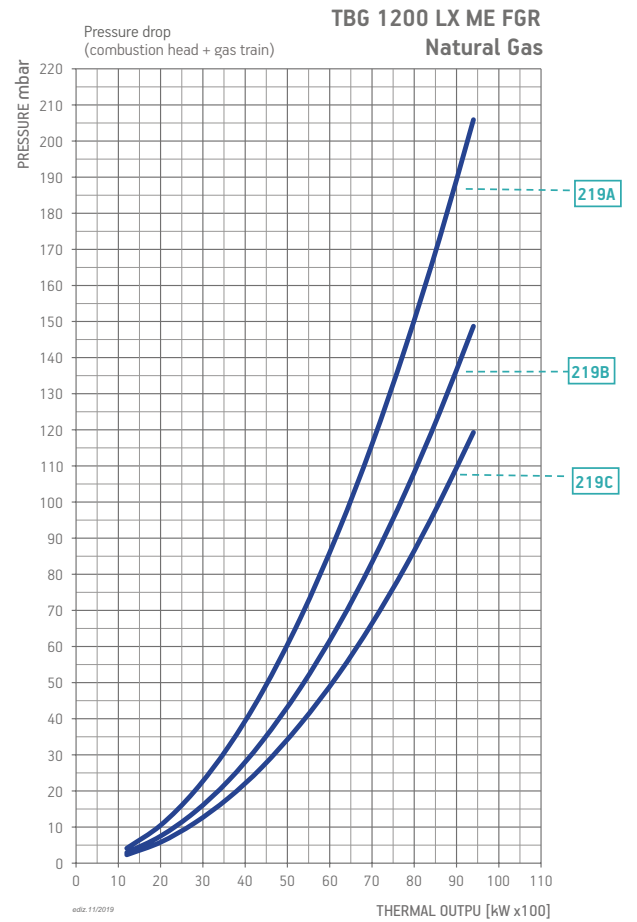
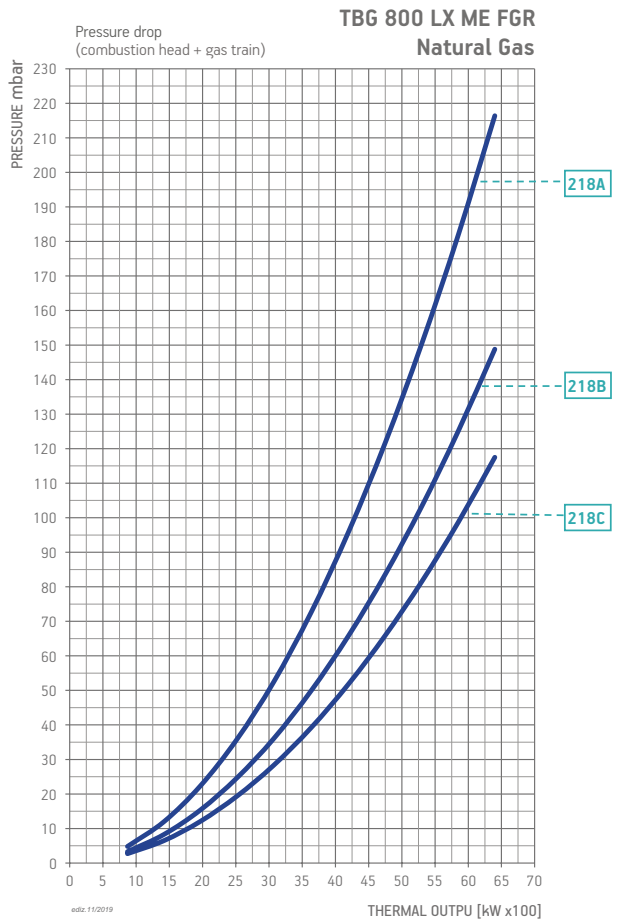
4 Equipped with air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.
---------------------------------------

## BURNER/GAS TRAIN MATCH

FGR  
GAS BURNERS



## BURNER/GAS TRAIN MATCH

Burner Model	Gas type	Curve on graph	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 800 LX ME FGR	Natural gas	218A	500	CTV	19990542	Included	-	Included	D4	
		218B	500	CTV	19990543	Included	-	Included	D4	
		218C	500	CTV	19990544	Included	-	Included	D4	
TBG 1200 LX ME FGR	Natural gas	219A	500	CTV	19990606	Included	-	Included	D4	
		219B	500	CTV	19990607	Included	-	Included	D4	
		219C	500	CTV	19990608	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV) Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.

Symbology

**BTG...  
TBG...**  
Single-stage gas burners.

**BTG...P  
TBG...P  
TBG...LX P**  
Two-stage gas burners.

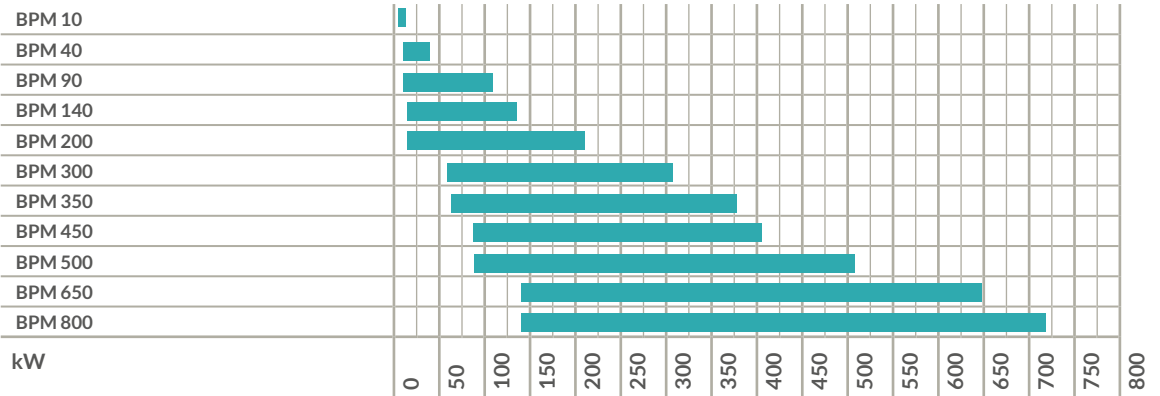
**TBG...MC  
TBG...LX MC**  
Two-stage progressive/modulating gas burners with mechanical cam.

**BTG...ME  
TBG...ME  
TBG...LX ME**  
Two-stage progressive/modulating gas burners with electronic cam.

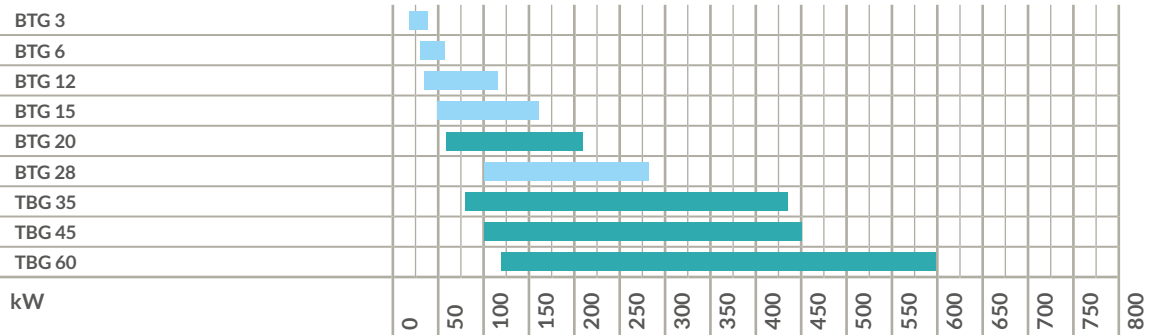
**TBG...ME V  
TBG...LX ME V**  
Modulating gas burners with electronic modulation and with frequency converter (inverter).

## MODULATING PREMIX BURNERS

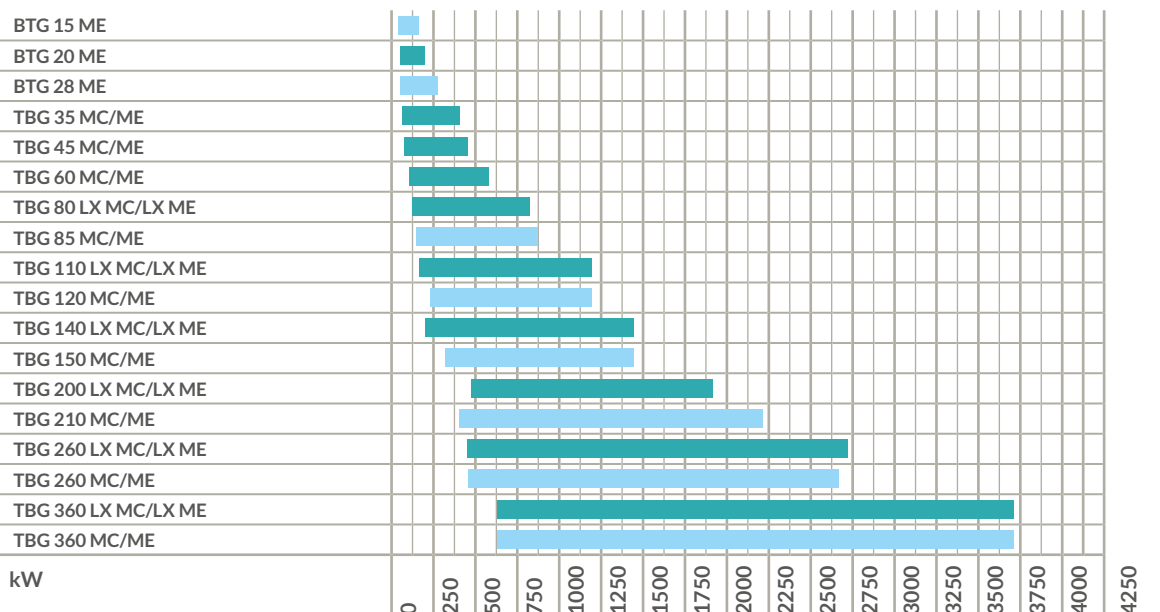
Low NOx  
Class 3 according to  
EN676 standard



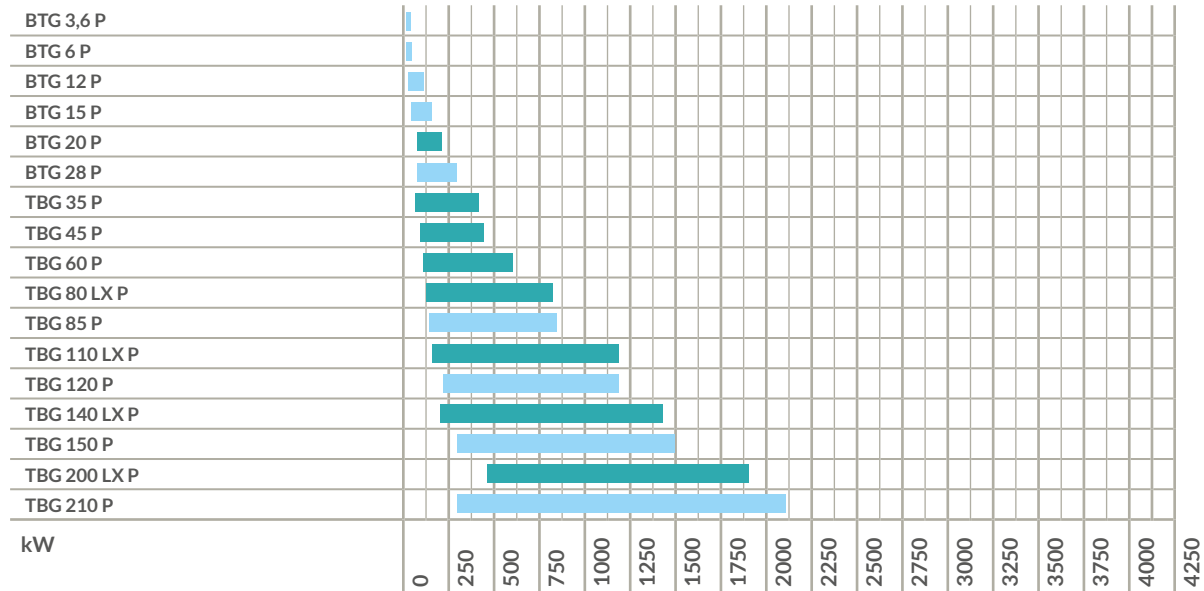
## SINGLE - STAGE GAS BURNERS



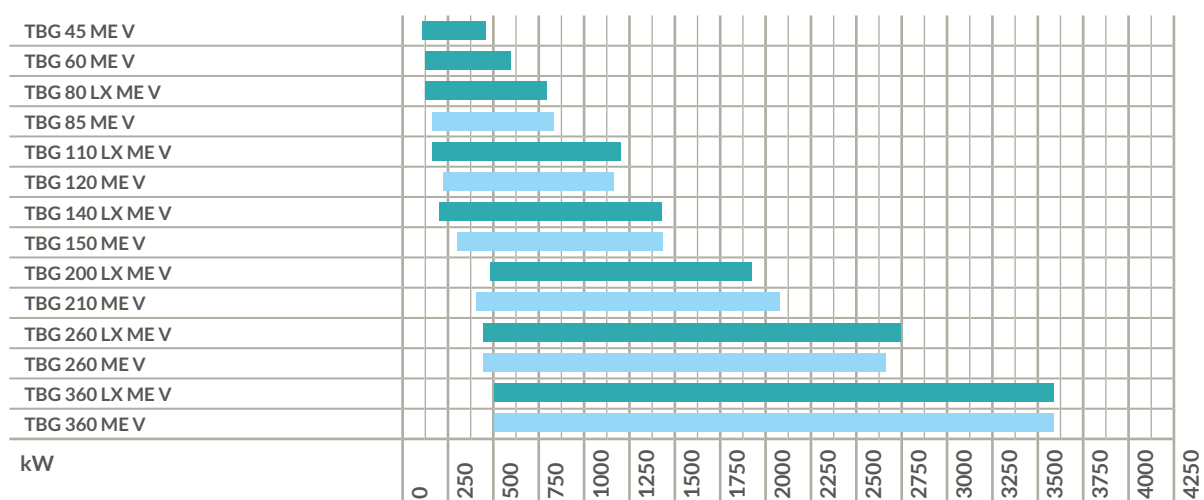
## TWO - STAGE PROGRESSIVE GAS BURNERS



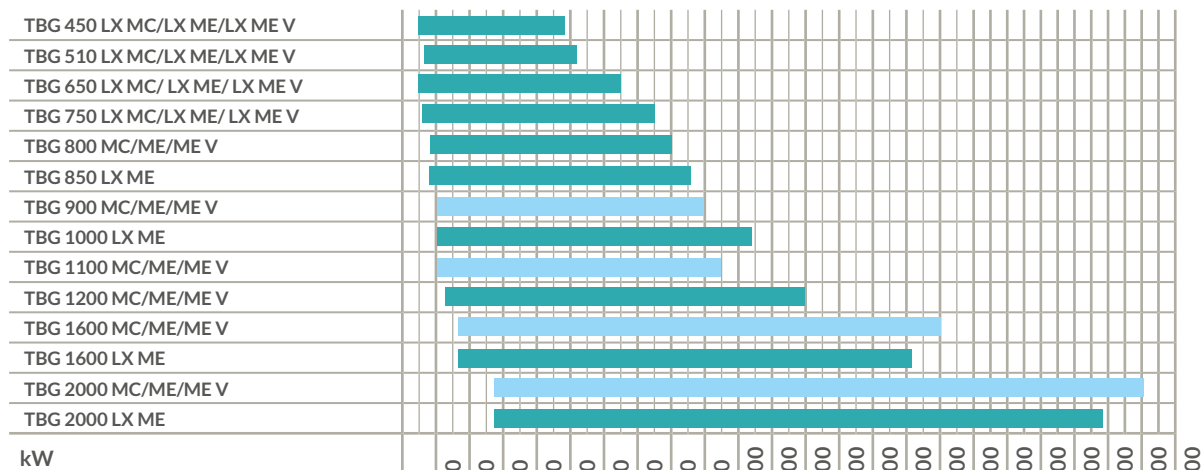
## TWO-STAGE GAS BURNERS



## MODULATING GAS BURNERS



## INDUSTRIAL GAS BURNERS







### CUSTOMISED SOLUTIONS:

WE SUPPORT THE CUSTOMER WITH THE DEFINITION AND OPTIMISATION OF THE SYSTEM.

mean a better operating efficiency, since the capability to modulate the heat gain based on real current needs reduces cooling caused by switching on and off to the minimum.

### BENEFITS

- Flexible and adaptable to any type of application in various industrial sectors: heat generators, steam generators, ovens for food applications, spray booths, heat exchangers, special custom applications.
- Ideal for OEM applications: burners are designed in partnership with the customer in various forms and dimensions according to the exchanger and application.
- Compact flame with radial development and incandescence burner: reduction of contact between the flame and furnace walls.
- Low nitric oxide (NOx) and CO polluting emissions.
- Modulating operation.
- Extremely silent operation.
- Compact design.
- Wide range available: from 10 kW to 720 kW.
- Natural gas and LPG operation\* (\*on request).
- High modulation ratios (up to 1/6).
- Electrical consumption reduced by up to 40%.
- Easy adjustment and maintenance.

### ON REQUEST

Activation of analogue modulation signal 0 ÷ 10V/4 ÷ 20 mA.

### BALTUR PREMIXING KNOW HOW

The new BPM series burner range makes use of the combustion and premixing technology.

Combustion air and fuel gas are mixed in the right proportions before being introduced into the burner.

The main characteristics of these new compact burners are the energy savings deriving from the high modulating ratios, together with an extremely silent operation.

Thanks to the special metal fibre combustion head, it is possible to obtain low nitric oxide (NOx) and CO polluting emissions.

Baltur is proud to offer its Customers the benefits of its know-how on premixing technology gained in thirty years of experience, i.e. since, as early as 1986, a first premixed burner was an integral part of the historic wall-mounted Balturella boiler.

### GAS BURNERS WITH PREMIXED FLAME AND LOW EMISSIONS

The premixed burner is made up of a combustion head consisting of a special wire cloth on which a very compact flame (microflame) develops radially, thus allowing the application of BPM burners on furnaces with contained dimensions and reducing the boiler overall dimensions.

The premixed burner is supplied by a brushless modulating blower and an electro-pneumatic gas valve.

This technical solution makes it possible to obtain high modulating ratios (up to 1/6 depending on the model) which

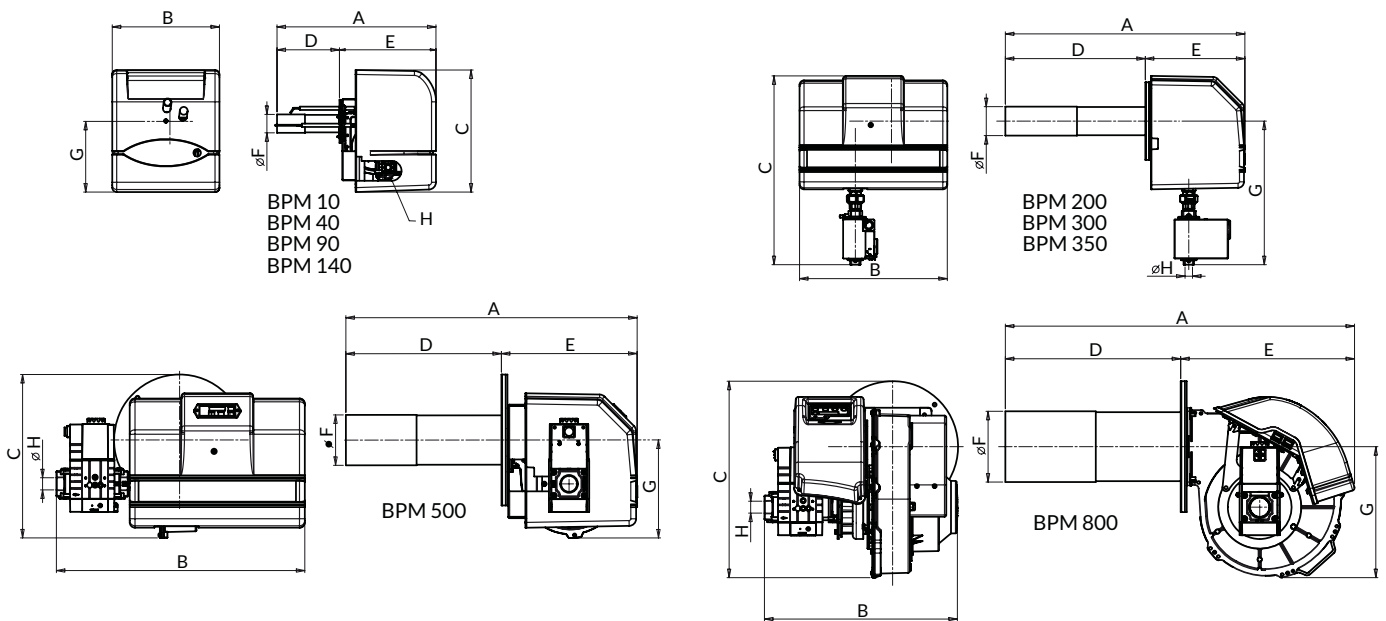
### HEAD AND COMBUSTION CHAMBER DIMENSIONS

Code	Model	Combustion head dimensions			Minimum generator combustion chamber dimensions	
		Total length (mm)	Diameter (mm)	Torch length (mm)	Diameter (mm)	Length (mm)
18000103	BPM 10	175	53	77	120 ÷ 150	225 ÷ 300
18000409	BPM 40	250	35	150	190 ÷ 230	350 ÷ 450
18000708	BPM 90	295	66	200	250 ÷ 290	325 ÷ 400
18000907	BPM 140	311	84	205	450 ÷ 490	500 ÷ 700
18001204	BPM 200	420	97	240	450 ÷ 500	700 ÷ 950
18001302	BPM 300	500	97	360	500 ÷ 590	700 ÷ 1200
18001402	BPM 350	595	143	440	600 ÷ 680	800 ÷ 1300
18001501	BPM 450	680	143	440	620 ÷ 670	900 ÷ 1400
18001603	BPM 500	680	143	440	650 ÷ 700	900 ÷ 1400
18001701	BPM 650	550	200	350	670 ÷ 750	1000 ÷ 1500
18001801	BPM 800	615	200	450	670 ÷ 500	1000 ÷ 1500

Part no.	Model	Thermal power (kW)	Emission class		Electric power supply	Fuel	Type of control	Operation
			Natural gas	LPG				
18000103	BPM 10	2 ÷ 10	3	3	1N AC 230V 50 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18000409	BPM 40	22 ÷ 43	3	3	1N AC 230V 50 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18000708	BPM 90	20 ÷ 103	3	3	1N AC 230V 50 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18000907	BPM 140	30 ÷ 142	3	3	1N AC 230V 50 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001204	BPM 200	30 ÷ 210	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001302	BPM 300	63 ÷ 310	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001402	BPM 350	70 ÷ 350	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001501	BPM 450	90 ÷ 410	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001603	BPM 500	90 ÷ 520	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001701	BPM 650	142 ÷ 650	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating
18001801	BPM 800	142 ÷ 720	3	3	1N AC 230V 50/60 Hz	Natural gas/LPG	Siemens LME 71	Modulating

For the correct burner-generator combination in particular applications, contact our sales office.  
NOx and CO emissions using G20 fuel and according to European standard EN 676.

### DIMENSIONS



Model	A	B	C	D	E	F Ø	G	H
BPM 10	450	305	345	175	275	53	193,5	3/4" M
BPM 40	525	305	345	250	275	35	193,5	3/4" M
BPM 90	573	305	345	295	278	66	191	3/4" M
BPM 140	595	305	345	311	284	84	232	3/4" F
BPM 200	760	495	660	420	340	97	500	1" F
BPM 300	840	495	660	500	340	97	500	1" F
BPM 350	935	495	660	595	340	143	500	1" F
BPM 450	1070	700	463	680	390	143	277	1"1/2 F
BPM 500	1070	700	463	680	390	143	277	1"1/2 F
BPM 650	1025	560	555	550	475	200	370	1"1/2 F
BPM 800	1110	560	555	615	495	200	370	1"1/2 F



**Gas burner compliant with European standard EN676. Operation:**

Low NOx and CO emissions gas burner according to European standard EN676:

Adjusting the combustion head

Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler

Fixed boiler coupling flange

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney

CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter

Possibility to add gas train with valve tightness control

Fail proof connectors for burner/gas train connection

Gas train outlet:

Flame detection by ionisation electrode with connector for microamperometer

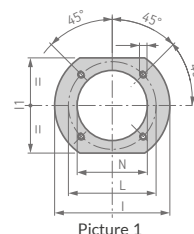
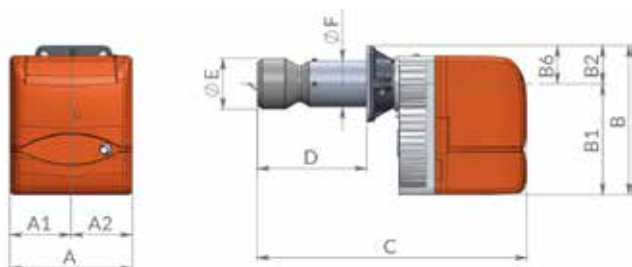
Electric protection rating:

Sound-proof plastic protective cover

	BTG 3	BTG 3,6 P
	single-stage	two-stage
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
Fixed boiler coupling flange	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers		•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control		•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up	up
Flame detection by ionisation electrode with connector for microamperometer	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

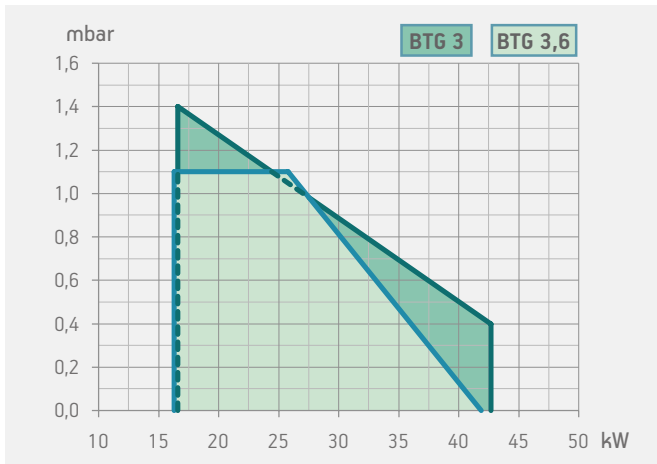
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Modello	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTG 3	250	120	130	242	170	72	48	330	90	90	90	170	144	135 ÷ 161	M8	95	1
BTG 3 L200	250	120	130	242	170	72	48	460	50 ÷ 200	90	90	170	140	135 ÷ 161	M8	95	1
BTG 3,6	246	123	123	289	219	70	53	410	50 ÷ 105	90	90	170	140	130 ÷ 155	M8	95	1
BTG 3,6 P	246	123	123	289	219	70	53	410	50 ÷ 105	90	90	170	140	130 ÷ 155	M8	95	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 3	400	300	280	9
BTG 3 L200	560	310	350	10
BTG 3,6	560	310	350	12
BTG 3,6 P	560	310	350	12

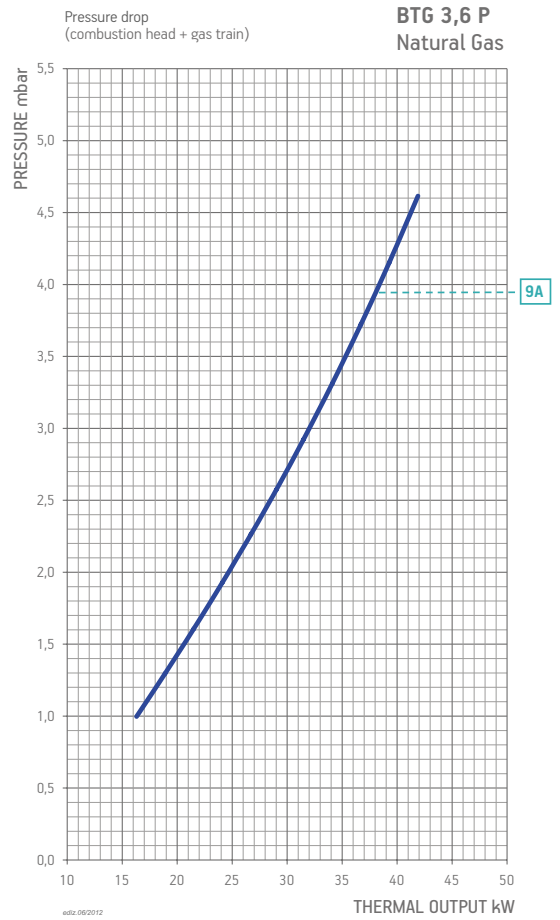
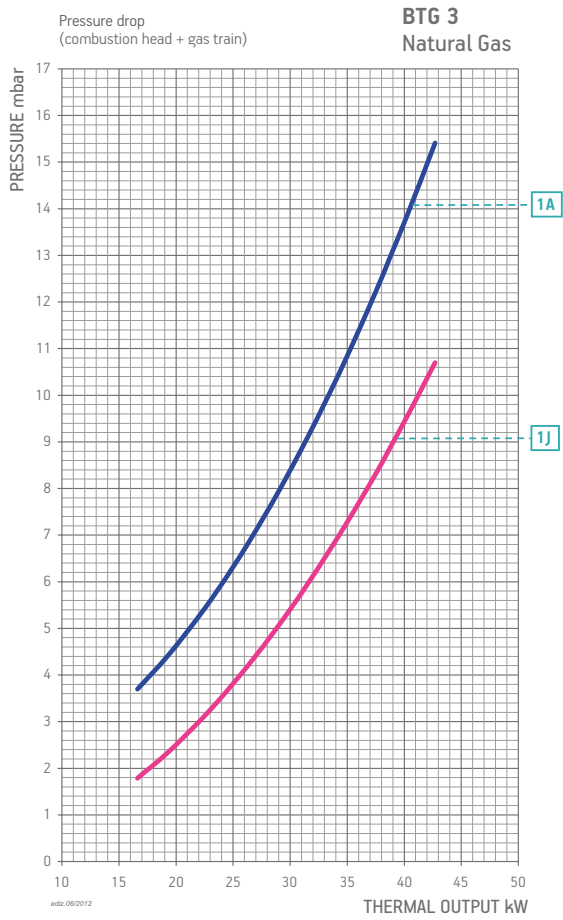
	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	16,6 ÷ 42,7	<b>BTG 3</b>	<b>17000010</b>	1N AC 50Hz 230V	0,09	1)
	class 2	16,6 ÷ 42,7	<b>BTG 3 L200</b>	<b>17000020</b>	1N AC 50Hz 230V	0,09	1)
	class 2	16,6 ÷ 42,0	<b>BTG 3,6</b>	<b>17020010</b>	1N AC 50Hz 230V	0,09	1)
	class 2	16,3 ÷ 41,9	<b>BTG 3,6 P</b>	<b>17030010</b>	1N AC 50Hz 230V	0,10	1)
Frequency 60 Hz							
	class 2	16,6 ÷ 42,7	<b>BTG 3</b>	<b>17000010</b>	1N AC 60Hz 220V	0,09	1)
	class 2	16,3 ÷ 41,9	<b>BTG 3,6 P</b>	<b>17030010</b>	1N AC 60Hz 220V	0,10	1)

### GAS BURNER ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

1 Equipped with air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural Gas:  $H_i = 35,80 \text{ MJ/m}^3 = 8550 \text{ kcal/m}^3$ .  
 LPG:  $H_i = 92 \text{ MJ/m}^3 = 22000 \text{ kcal/m}^3$ .  
 For different type of gas and pressure values, please get in contact with our commercial department.





## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 3	Natural gas	1A	CE/EXP	65		19990466	Included	-	-	M2	
		1J	EXP	40		19990235	-	96000030	-	ME1	
BTG 3,6 P	Natural gas	9A	CE/EXP	360		19990016	Included	-	-	B2	
					CTV	19990016	Included	-	98000100	B2	12)

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 3	LGP	CE	65		19990466	Included	-	-	M2	
		EXP	40		19990235	-	96000030	-	ME1	
BTG 3,6 P	LGP	CE/EXP	360		19990016	Included	-	-	B2	
				CTV	19990016	Included	-	98000100	B2	12)

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

## NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.



**Gas burner compliant with European standard EN676. Operation:**

Low NOx and CO emissions gas burner according to European standard EN676:

Adjusting the combustion head

Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney

CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter

Possibility to add gas train with valve tightness control

Fail proof connectors for burner/gas train connection

Gas train outlet:

Flame detection by ionisation electrode with connector for microamperometer

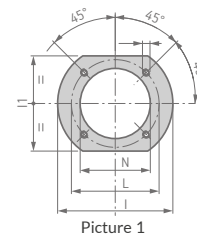
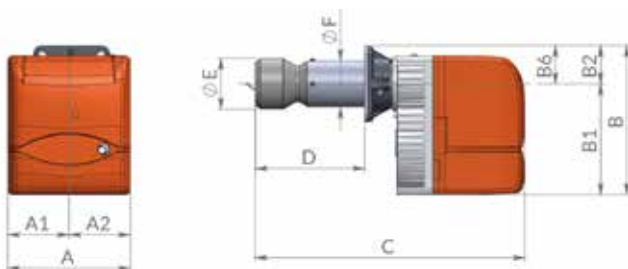
Electric protection rating:

Sound-proof plastic protective cover

	BTG 6	BTG 6 P
	single-stage	two-stage
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up	up
Flame detection by ionisation electrode with connector for microamperometer	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

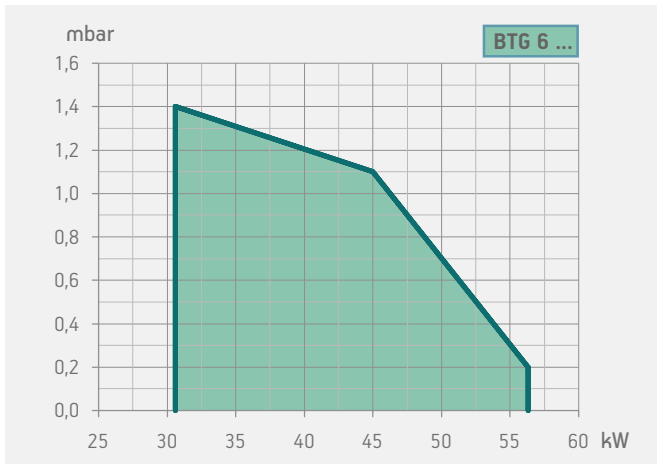
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTG 6	246	123	123	289	219	70	53	410	50 ÷ 105	90	90	170	140	130 ÷ 155	M8	95	1
BTG 6 L300	246	123	123	289	219	70	53	610	50 ÷ 300	90	90	170	140	130 ÷ 155	M8	95	1
BTG 6 P	246	123	123	289	219	70	53	410	50 ÷ 105	90	90	170	140	130 ÷ 155	M8	95	1
BTG 6 P L300	246	123	123	289	219	70	53	610	50 ÷ 300	90	90	170	140	130 ÷ 155	M8	95	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 6	560	310	350	12
BTG 6 L300	760	310	350	12
BTG 6 P	560	310	350	12
BTG 6 P L300	760	310	350	12

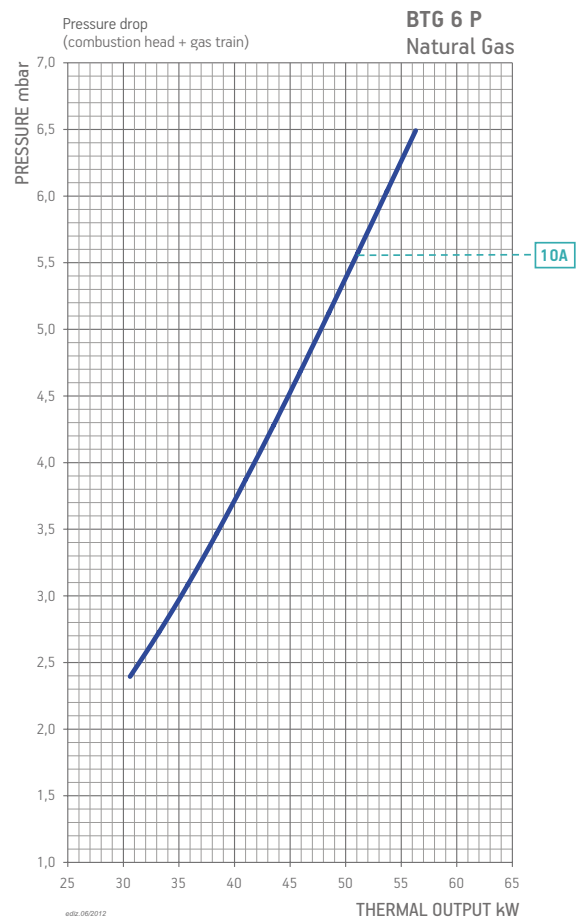
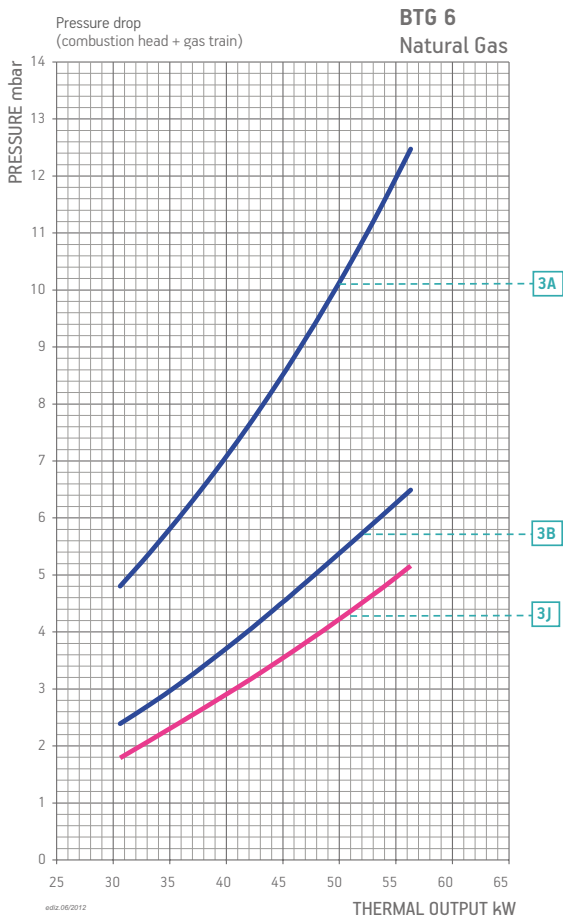
	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	30,6 ÷ 56,3	<b>BTG 6</b>	<b>17040010</b>	1N AC 50Hz 230V	0,1	1)
	class 2	30,6 ÷ 56,3	<b>BTG 6 L300</b>	<b>17040020</b>	1N AC 50Hz 230V	0,1	1)
	class 2	30,6 ÷ 56,3	<b>BTG 6 P</b>	<b>17050010</b>	1N AC 50Hz 230V	0,1	1)
	class 2	30,6 ÷ 56,3	<b>BTG 6 P L300</b>	<b>17050020</b>	1N AC 50Hz 230V	0,1	1)
Frequency 60 Hz							
	class 2	30,6 ÷ 56,3	<b>BTG 6</b>	<b>17040010</b>	1N AC 60Hz 220V	0,1	1)
	class 2	30,6 ÷ 56,3	<b>BTG 6 P</b>	<b>17050010</b>	1N AC 60Hz 220V	0,1	1)

### GAS BURNER ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

1 Equipped with air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural Gas:  $H_i = 35,80 \text{ MJ/m}^3 = 8550 \text{ kcal/m}^3$ .  
 LPG:  $H_i = 92 \text{ MJ/m}^3 = 22000 \text{ kcal/m}^3$ .  
 For different type of gas and pressure values, please get in contact with our commercial department.



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 6	Natural gas	3A	CE/EXP	65		19990466	Included	96000001	-	M2	
		3B	CE/EXP	360		19990002	Included	-	-	M2	
		3J	EXP	40	CTV	19990002	Included	-	98000100	M2	12)
BTG 6 P	Natural gas	10A	CE/EXP	360		19990235	-	-	-	ME1	
					CTV	19990016	Included	-	-	B2	
					CTV	19990016	Included	-	98000100	B2	12)

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 6	LPG	CE	65		19990466	Included	96000001	-	M2	
		EXP	40		19990235	-	-	-	ME1	
BTG 6 P	LPG	CE/EXP	360		19990016	Included	-	-	B2	
				CTV	19990016	Included	-	98000100	B2	12)

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.

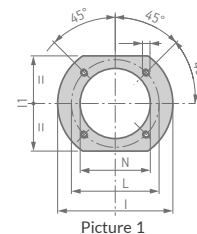
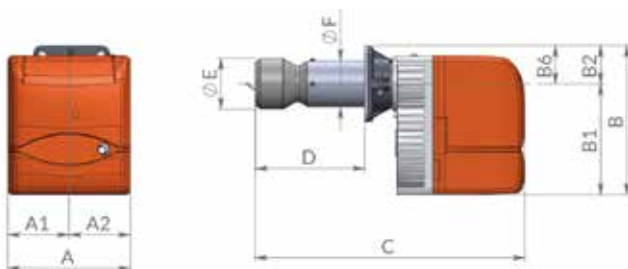




	BTG 12	BTG 12 P
	single-stage	two-stage
<b>Gas burner compliant with European standard EN676. Operation:</b>		
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up	up
Flame detection by ionisation electrode with connector for microamperometer	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

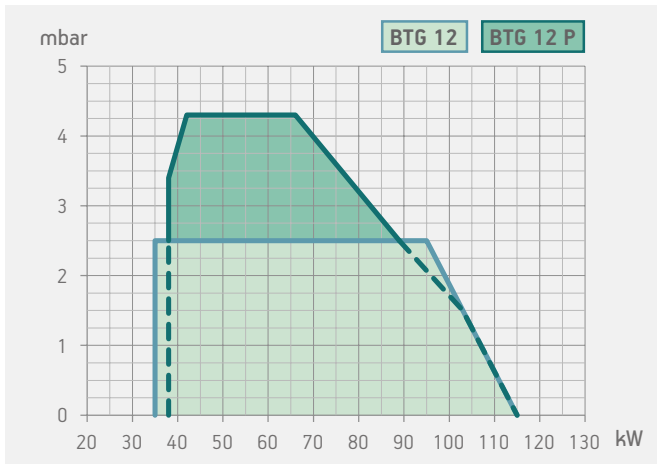
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTG 12	246	123	123	289	219	70	53	450	70 ÷ 150	90	90	170	140	130 ÷ 155	M8	95	1
BTG 12 L300	246	123	123	289	219	70	53	600	70 ÷ 300	90	90	170	140	130 ÷ 155	M8	95	1
BTG 12 P	246	123	123	289	219	70	53	450	70 ÷ 150	90	90	170	140	130 ÷ 155	M8	95	1
BTG 12 P L300	246	123	123	289	219	70	53	600	70 ÷ 300	90	90	170	140	130 ÷ 155	M8	95	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 12	560	310	350	12
BTG 12 L300	760	310	350	14
BTG 12 P	560	310	350	12
BTG 12 PL300	760	310	350	14

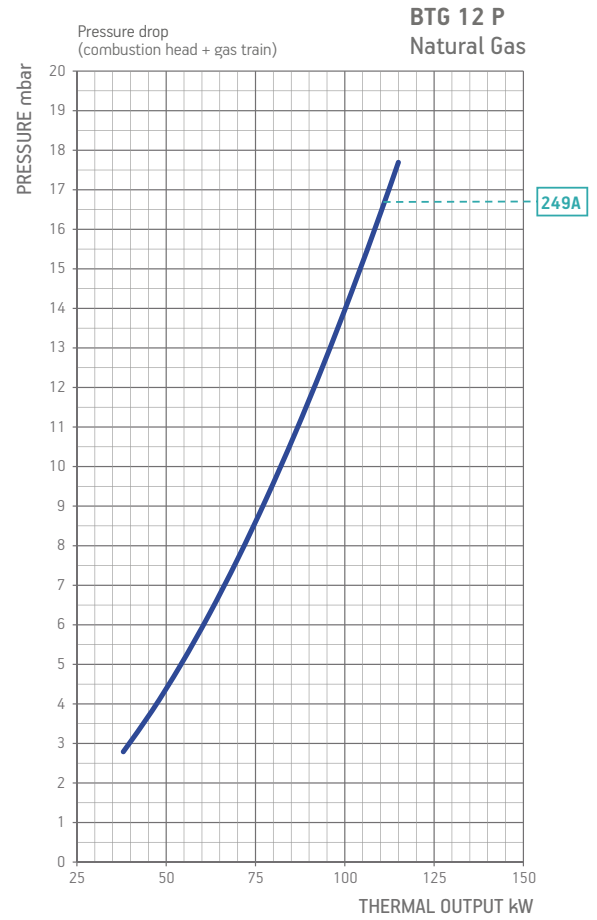
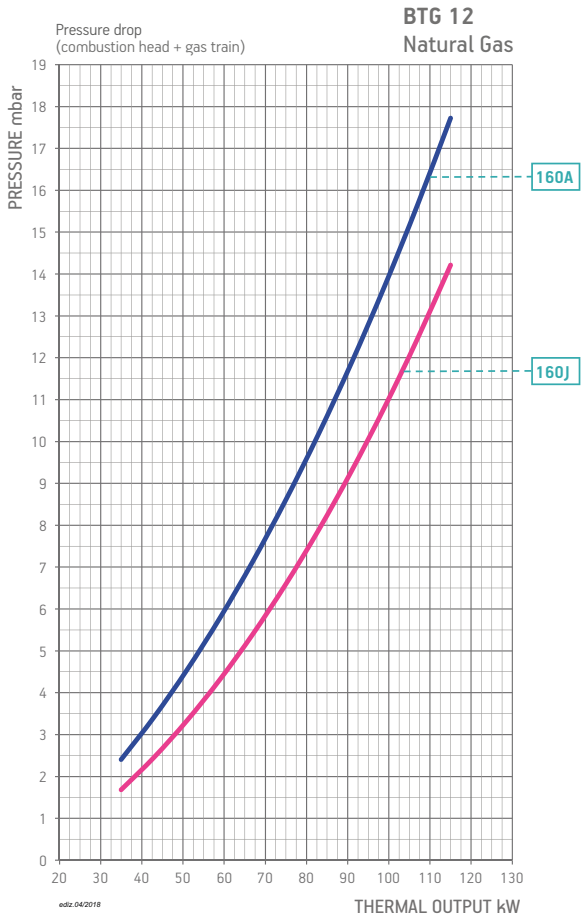
	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	35,0 ÷ 115,0	<b>BTG 12</b>	<b>17170010</b>	1N AC 50Hz 230V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 L300</b>	<b>17170020</b>	1N AC 50Hz 230V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 P</b>	<b>17180010</b>	1N AC 50Hz 230V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 P L300</b>	<b>17180020</b>	1N AC 50Hz 230V	0,1	1)
Frequency 60 Hz							
	class 2	35,0 ÷ 115,0	<b>BTG 12</b>	<b>17175410</b>	1N AC 60Hz 220V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 L300</b>	<b>17175420</b>	1N AC 60Hz 220V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 P</b>	<b>17185410</b>	1N AC 60Hz 220V	0,1	1)
	class 2	35,0 ÷ 115,0	<b>BTG 12 P L300</b>	<b>17185420</b>	1N AC 60Hz 220V	0,1	1)

### GAS BURNER ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

1 Equipped with air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural Gas:  $H_i = 35,80 \text{ MJ/m}^3 = 8550 \text{ kcal/m}^3$ .  
 LPG:  $H_i = 92 \text{ MJ/m}^3 = 22000 \text{ kcal/m}^3$ .  
 For different type of gas and pressure values, please get in contact with our commercial department.



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 12	Natural gas	160A	CE/EXP	360	CTV	19990002	Included	-	-	M2	
			EXP			19990002	Included	-	98000100	M2	12)
BTG 12 P	Natural gas	249A	CE/EXP	360	CTV	19990235	-	-	-	ME1	
			EXP			19990016	Included	-	-	B2	
						19990016	Included	-	98000100	B2	12)

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 12	LPG	CE	65		19990466	Included	96000001	-	M2	
		EXP	40		19990235	-	-	-	ME1	
BTG 12 P	LPG	CE/EXP	360	CTV	19990016	Included	-	-	B2	
					19990016	Included	-	98000100	B2	12)

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



BTG 15 - 15 P

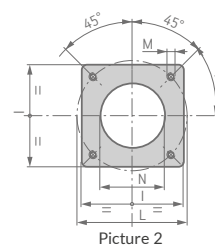
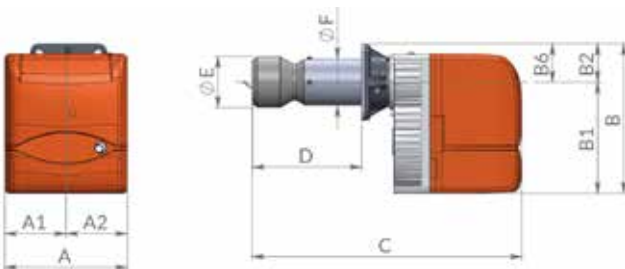


BTG 15 ME

	BTG 15	BTG 15 P	BTG 15 ME
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>single-stage</b>	<b>two-stage</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel			○
Modulation ratio:			1:3
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●	●	
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter			●
Possibility to add gas train with valve tightness control	●	●	
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up	up
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment			●
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	●	●	●

### LEGEND:

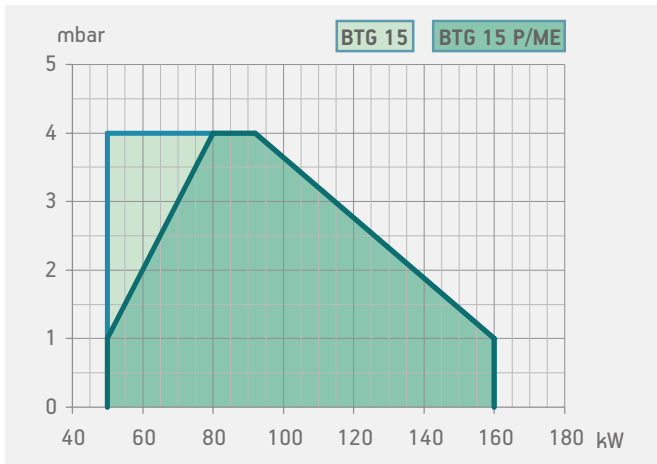
○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTG 15	303	158	145	368	275	93	70	680	150 ÷ 280	126	114	185	170 ÷ 210	M10	135	2
BTG 15 P	303	158	145	368	275	93	70	680	150 ÷ 280	126	114	185	170 ÷ 210	M10	135	2
BTG 15 ME	303	158	145	368	275	93	70	680	150 ÷ 280	126	114	185	170 ÷ 210	M10	135	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 15	780	370	410	20
BTG 15 P	780	370	410	20
BTG 15 ME	780	370	410	18

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	50 ÷ 160	<b>BTG 15</b>	<b>17080010</b>	1N AC 50Hz 230V	0,18	1)
	class 2	50 ÷ 160	<b>BTG 15 P</b>	<b>17090010</b>	1N AC 50Hz 230V	0,18	1)
	class 2	50 ÷ 160	<b>BTG 15 ME</b>	<b>17130020</b>	1N AC 50Hz 230V	0,18	4)
Frequency 60 Hz							
	class 2	50 ÷ 160	<b>BTG 15</b>	<b>17080010</b>	1N AC 60Hz 220V	0,18	1)
	class 2	50 ÷ 160	<b>BTG 15 P</b>	<b>17090010</b>	1N AC 60Hz 220V	0,18	1)
	class 2	50 ÷ 160	<b>BTG 15 ME</b>	<b>17130020</b>	1N AC 60Hz 220V	0,18	4)

### MODULATING MODE

DESCRIPTION	PART NO.
BTG 15 ME: modulation kit (see page 324)	98000059
BTG 15 ME: modulating probe (see page 324)	

### GAS BURNERS ACCESSORIES

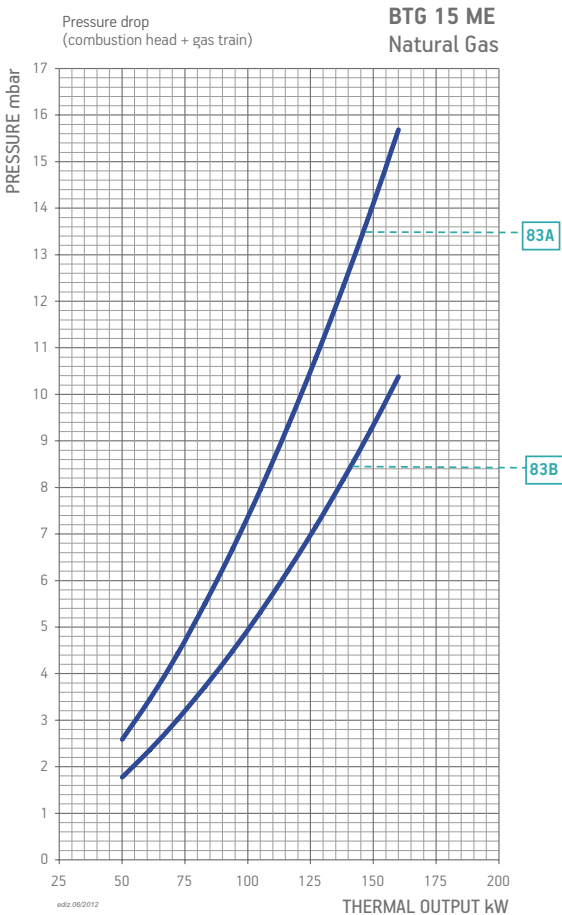
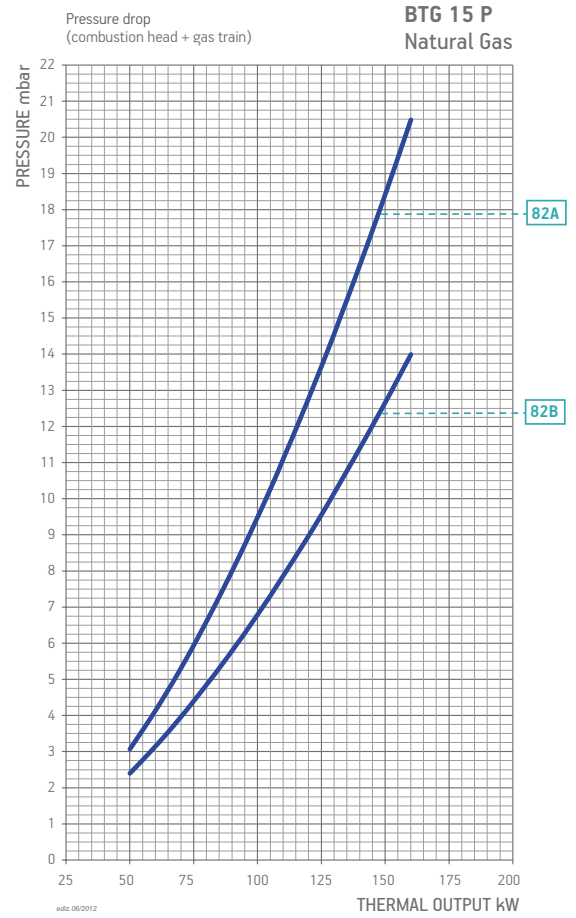
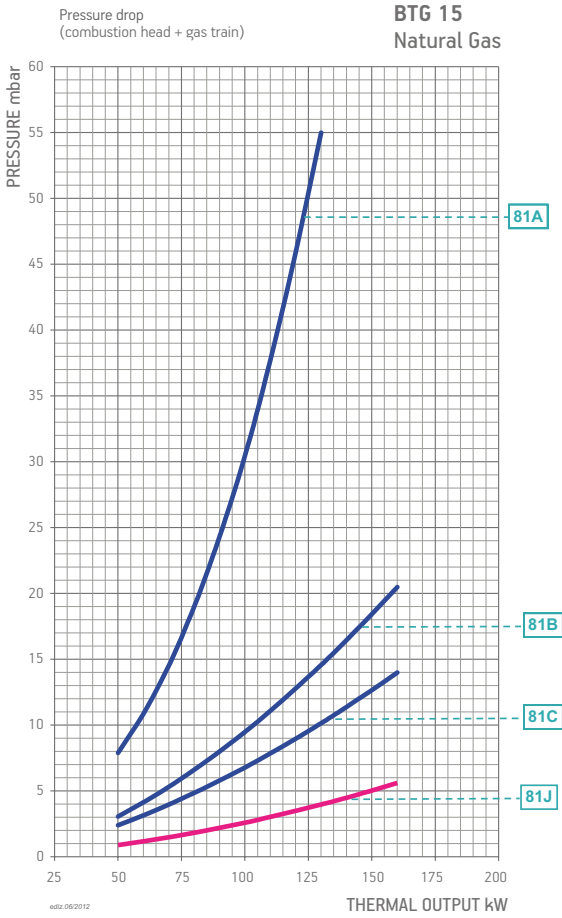
Boiler coupling kit, plug for wiring.

### NOTE

1 Equipped with air closure device.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max mbar **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 15	Natural gas	81A	CE/EXP	65		19990466	Included	96000001	-	M2	
		81B	CE/EXP	360		19990002	Included	-	-	M2	
					CTV	19990002	Included	-	98000100	M2	12)
		81C	CE/EXP	360		19990005	Included	-	-	M2	
CTV	19990005				Included	-	98000100	M2	12)		
	81J	EXP	40		19990670	-	-	-	ME1		
BTG 15 P	Natural gas	82A	CE/EXP	360		19990016	Included	-	-	B2	
					CTV	19990016	Included	-	98000100	B2	12)
		82B	CE/EXP	360		19990020	Included	-	-	B2	
CTV	19990020				Included	-	98000100	B2	12)		
BTG 15 ME	Natural gas	83A	CE/EXP	360	CTV	19990573	Included	-	Included	D2	
		83B	CE/EXP	360	CTV	19990574	Included	-	Included	D2	

Burner model	Gas type	Version	P.Max mbar **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 15	LPG	CE/EXP	65		19990466	Included	96000001	-	M2	
BTG 15 P	LPG	CE/EXP	360		19990016	Included	-	-	B2	
				CTV	19990016	Included	-	98000100	B2	12)
BTG 15 ME	LPG	CE/EXP	360	CTV	19990573	Included	-	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.



BTG 20 - 20 P



BTG 20 ME

	BTG 20	BTG 20 P	BTG 20 ME
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	single-stage	two-stage	electronic modulation
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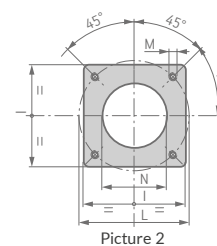
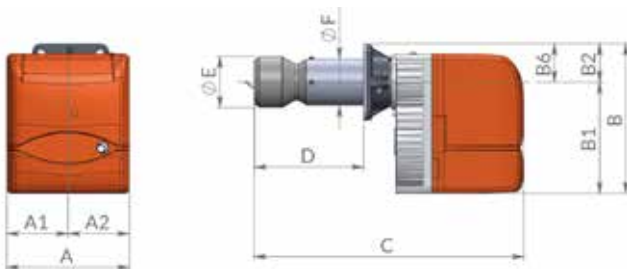
**Gas burner compliant with European standard EN676.**

**Operation:**

P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel			○
Modulation ratio:			1:3
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●	●	
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter			●
Possibility to add gas train with valve tightness control	●	●	
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up	up
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment			●
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	●	●	●

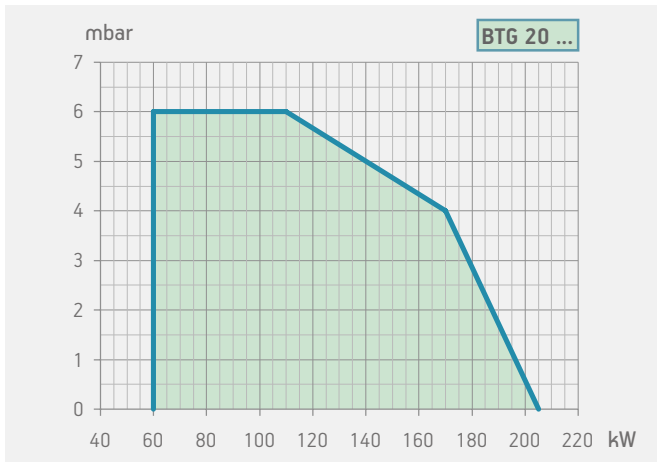
**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTG 20	303	158	145	368	275	93	70	695	150 ÷ 300	127	114	185	170 ÷ 210	M10	135	2
BTG 20 P	303	158	145	368	275	93	70	695	150 ÷ 300	127	114	185	170 ÷ 210	M10	135	2
BTG 20 ME	303	158	145	368	275	93	70	695	150 ÷ 300	127	114	185	170 ÷ 210	M10	135	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 20	780	370	410	18
BTG 20 P	780	370	410	18
BTG 20 ME	780	370	410	18

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 3	60 ÷ 205	<b>BTG 20</b>	<b>17100010</b>	1N AC 50Hz 230V	0,18	1)
	class 3	60 ÷ 205	<b>BTG 20 P</b>	<b>17110010</b>	1N AC 50Hz 230V	0,18	1)
	class 3	60 ÷ 205	<b>BTG 20 ME</b>	<b>17120020</b>	1N AC 50Hz 230V	0,18	4)
Frequency 60 Hz							
	class 3	60 ÷ 205	<b>BTG 20</b>	<b>17100010</b>	1N AC 60Hz 220V	0,18	1)
	class 3	60 ÷ 205	<b>BTG 20 P</b>	<b>17110010</b>	1N AC 60Hz 220V	0,18	1)
	class 3	60 ÷ 205	<b>BTG 20 ME</b>	<b>17120020</b>	1N AC 60Hz 220V	0,18	4)

### MODULATING MODE

DESCRIPTION	PART NO.
BTG 20 ME: modulation kit (see page 324)	98000059
BTG 20 ME: modulating probe (see page 324)	

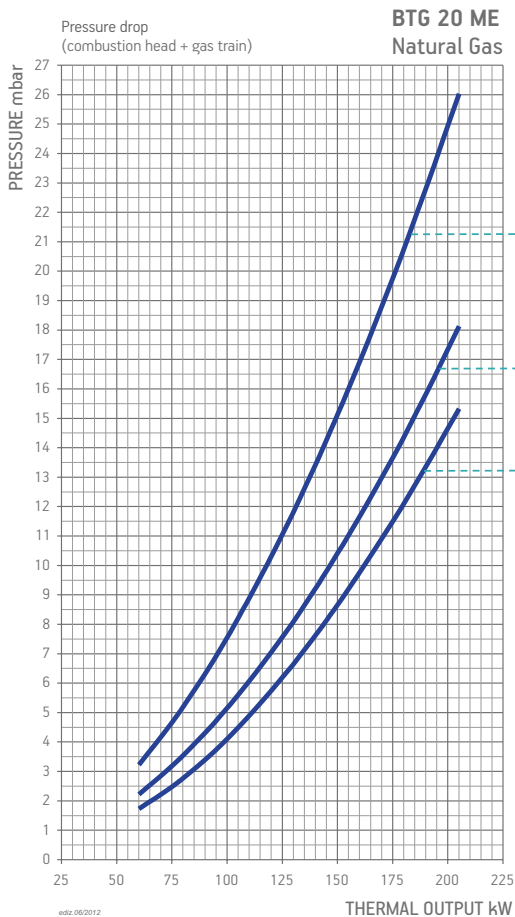
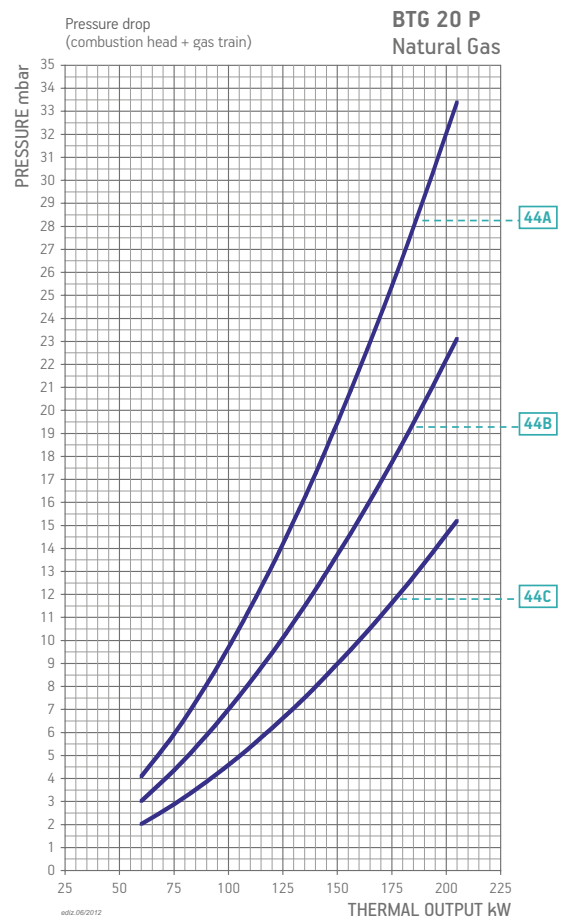
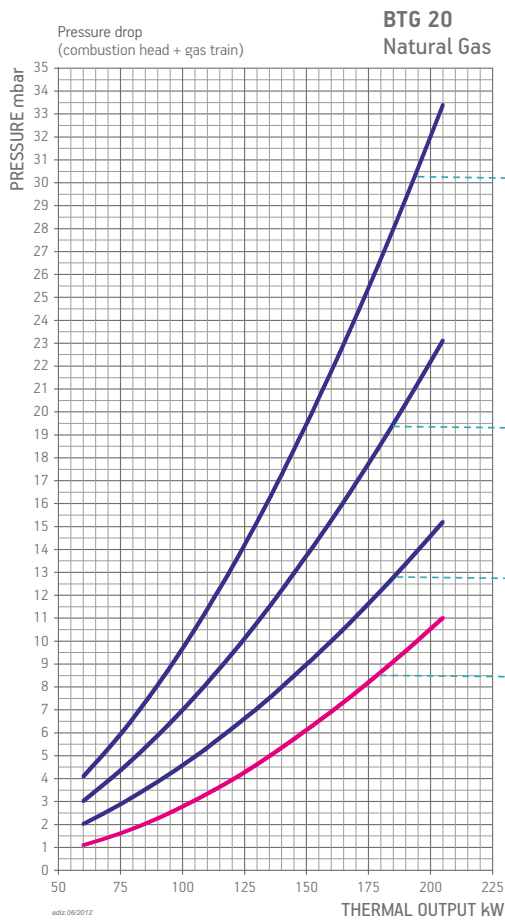
### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 4 Equipped with automatic air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 20	Natural gas	43A	CE/EXP	360	CTV	19990002	Included	-	-	M2	
						19990002	Included	-	98000100	M2	12)
		43B	CE/EXP	360	CTV	19990005	Included	-	-	M2	
						19990005	Included	-	98000100	M2	12)
		43C	CE/EXP	360	CTV	19990008	Included	96000031	-	M2	
19990008	Included					96000031	98000100	M2	12)		
43J	EXP	40		19990670	-	-	-	ME1			
BTG 20 P	Natural gas	44A	CE/EXP	360	CTV	19990016	Included	-	-	B2	
						19990016	Included	-	98000100	B2	12)
		44B	CE/EXP	360	CTV	19990020	Included	-	-	B2	
						19990020	Included	-	98000100	B2	12)
44C	CE/EXP	360	CTV	19990024	Included	96000031	-	B2			
				19990024	Included	96000031	98000100	B2	12)		
BTG 20 ME	Natural gas	84A	CE/EXP	360	CTV	19990573	Included	-	Included	D2	
		84B	CE/EXP	360	CTV	19990574	Included	-	Included	D2	
		84C	CE/EXP	360	CTV	19990575	Included	-	Included	D2	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 20	LPG	CE/EXP	360	CTV	19990002	Included	-	-	M2	
					19990002	Included	-	98000100	M2	12)
BTG 20 P	LPG	CE/EXP	360	CTV	19990016	Included	-	-	B2	
					19990016	Included	-	98000100	B2	12)
BTG 20 ME	LPG	CE/EXP	360	CTV	19990573	Included	-	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.





BTG 28 - 28 P



BTG 28 ME

Gas burner compliant with European standard EN676.

Operation:

P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel

Modulation ratio:

Low NOx and CO emissions gas burner according to European standard EN676:

Adjusting the combustion head

Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney

CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter

CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter

Possibility to add gas train with valve tightness control

Fail proof connectors for burner/gas train connection

Gas train outlet:

Flame detection by ionisation electrode with connector for microamperometer

Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment

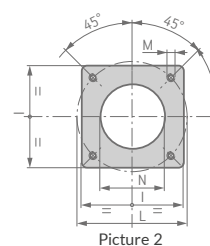
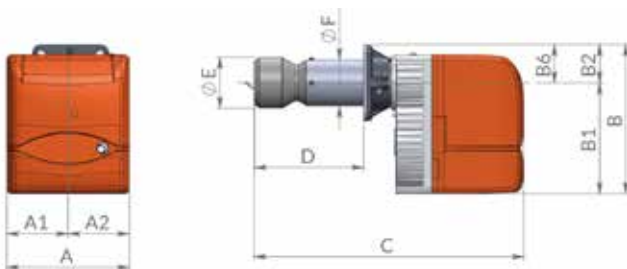
Electric protection rating:

Sound-proof plastic protective cover

	BTG 28	BTG 28 P	BTG 28 ME
	single-stage	two-stage	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel			○
Modulation ratio:			1:3
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●	●	
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter			●
Possibility to add gas train with valve tightness control	●	●	
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up	up
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment			●
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	●	●	●

### LEGEND:

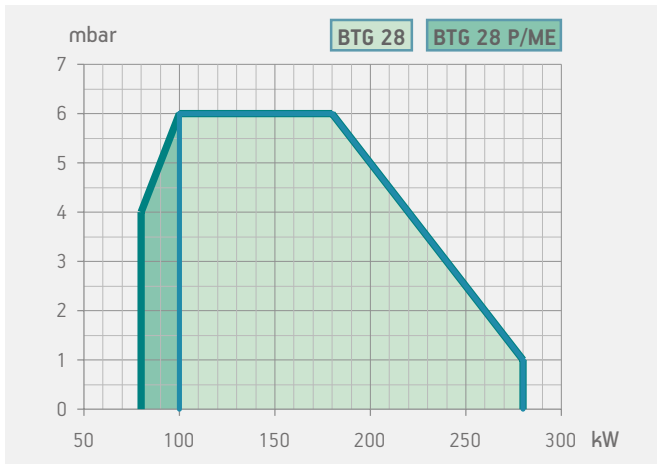
○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTG 28	303	158	145	368	275	93	70	695	150 ÷ 300	135	114	185	170 ÷ 210	M10	145	2
BTG 28 P	303	158	145	368	275	93	70	695	150 ÷ 300	135	114	185	170 ÷ 210	M10	145	2
BTG 28 ME	303	158	145	368	275	93	70	695	150 ÷ 300	135	114	185	170 ÷ 210	M10	145	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTG 28	780	370	410	19
BTG 28 P	780	370	410	20
BTG 28 ME	780	370	410	18

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	100 ÷ 280	<b>BTG 28</b>	<b>17140010</b>	1N AC 50Hz 230V	0,18	1)
	class 2	80 ÷ 280	<b>BTG 28 P</b>	<b>17150010</b>	1N AC 50Hz 230V	0,18	1)
	class 2	80 ÷ 280	<b>BTG 28 ME</b>	<b>17160020</b>	1N AC 50Hz 230V	0,18	4)
Frequency 60 Hz							
	class 2	100 ÷ 280	<b>BTG 28</b>	<b>17145410</b>	1N AC 60Hz 220V	0,25	1)
	class 2	80 ÷ 280	<b>BTG 28 P</b>	<b>17155410</b>	1N AC 60Hz 220V	0,25	1)
	class 2	80 ÷ 280	<b>BTG 28 ME</b>	<b>17165420</b>	1N AC 60Hz 220V	0,25	4)

### MODULATING MODE

DESCRIPTION	PART NO.
BTG 28 ME: modulation kit (see page 324)	98000059
BTG 28 ME: modulating probe (see page 324)	

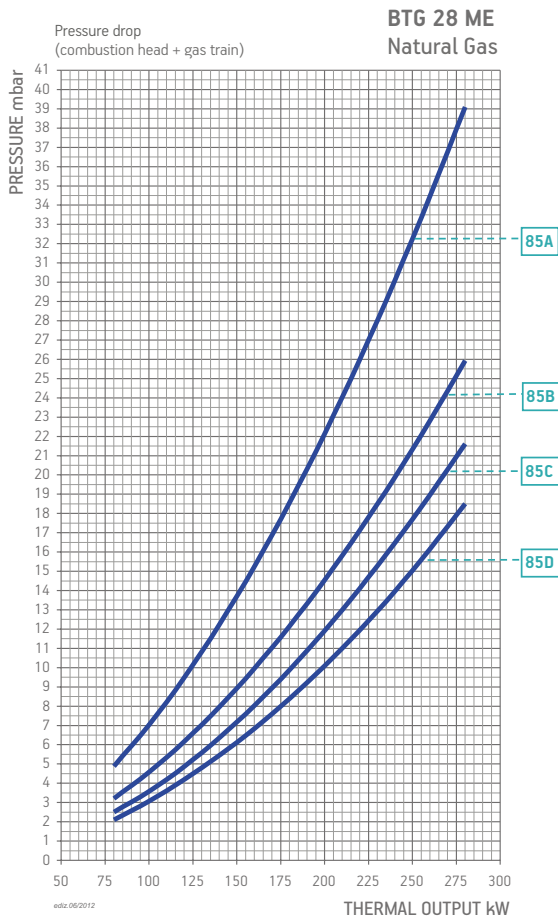
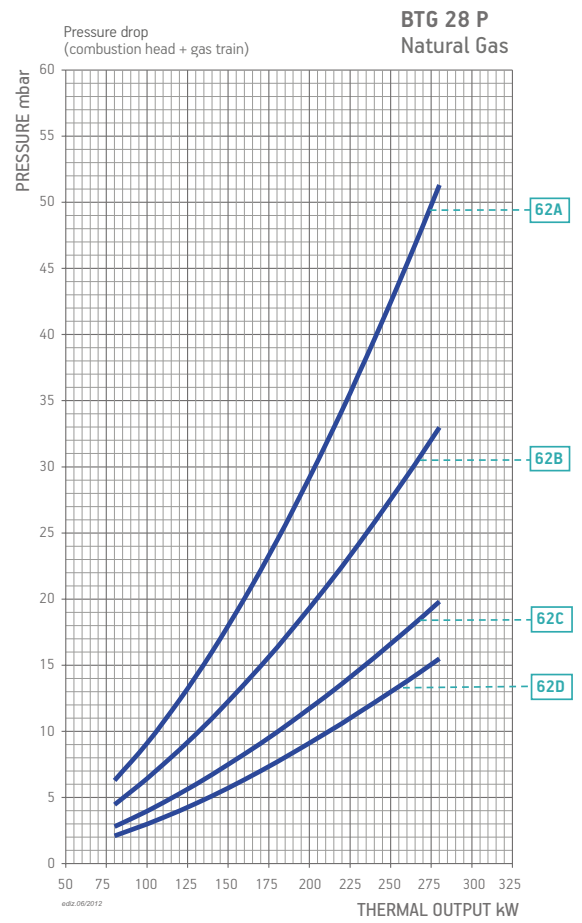
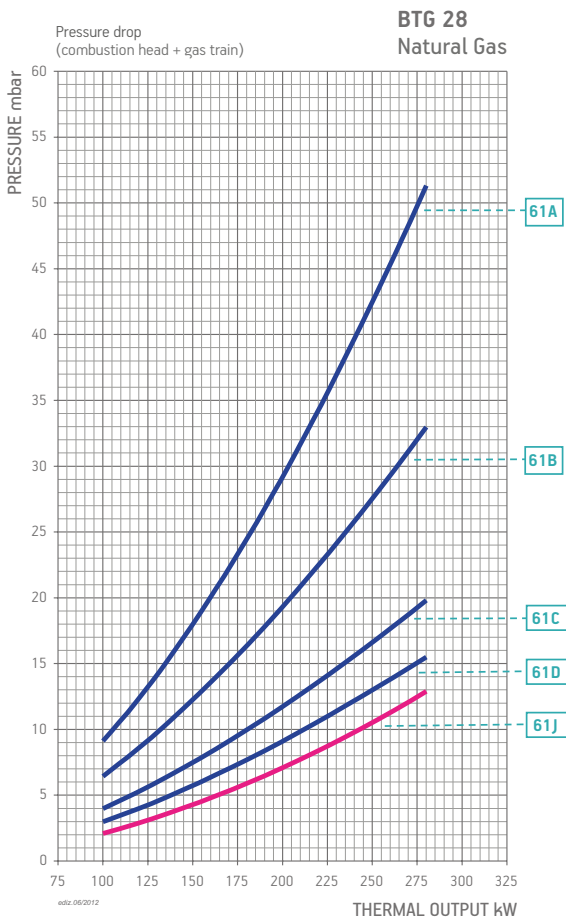
### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

1 Equipped with air closure device.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
BTG 28	Natural gas	61A	CE/EXP	360	CTV	19990002	Included	-	-	M2	
						19990002	Included	-	98000100	M2	12)
		61B	CE/EXP	360	CTV	19990005	Included	-	-	M2	
						19990005	Included	-	98000100	M2	12)
		61C	CE/EXP	360	CTV	19990008	Included	96000031	-	M2	
19990008	Included					96000031	98000100	M2	12)		
61D	CE/EXP	360	CTV	19990166	Included	96000031	-	M2			
					19990166	Included	96000031	98000100	M2	12)	
		61J	EXP	40		19990671	-	96000028	-	ME1	
BTG 28 P	Natural gas	62A	CE/EXP	360	CTV	19990016	Included	-	-	B2	
						19990016	Included	-	98000100	B2	12)
		62B	CE/EXP	360	CTV	19990020	Included	-	-	B2	
						19990020	Included	-	98000100	B2	12)
		62C	CE/EXP	360	CTV	19990024	Included	96000031	-	B2	
19990024	Included					96000031	98000100	B2	12)		
62D	CE/EXP	360	CTV	19990168	Included	96000031	-	B2			
					19990168	Included	96000031	98000100	B2	12)	
BTG 28 ME	Natural gas	85A	CE/EXP	360	CTV	19990573	Included	-	Included	D2	
		85B	CE/EXP	360	CTV	19990574	Included	-	Included	D2	
		85C	CE/EXP	360	CTV	19990575	Included	-	Included	D2	
		85D	CE/EXP	360	CTV	19990576	Included	-	Included	D2	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
BTG 28	LPG	CE/EXP	360	CTV	19990002	Included	-	-	M2	
					19990002	Included	-	98000100	M2	12)
BTG 28 P	LPG	CE/EXP	360	CTV	19990016	Included	-	-	B2	
					19990016	Included	-	98000100	B2	12)
BTG 28 ME	LPG	CE/EXP	360	CTV	19990573	Included	-	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

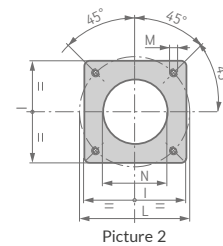
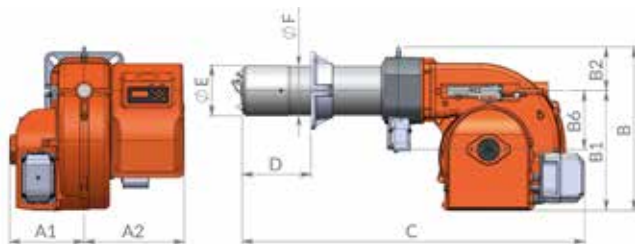
\*\* ) Maximum gas inlet pressure at pressure regulator.



	TBG 35	TBG 35 P	TBG 35 MC	TBG 35 ME
<b>Gas burner compliant with European standard EN676. Operation:</b>	single-stage	two-stage	mechanical two-stage progressive	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel			○	○
Modulation ratio:			1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3	class 3
Adjusting the combustion head	●	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney		●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●	●	●	
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter				●
Possibility to add gas train with valve tightness control	●	●	●	
Fail proof connectors for burner/gas train connection	●	●	●	●
Gas train outlet:	up/down	down	down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●	●
Electric protection rating:	IP40	IP40	IP40	IP40

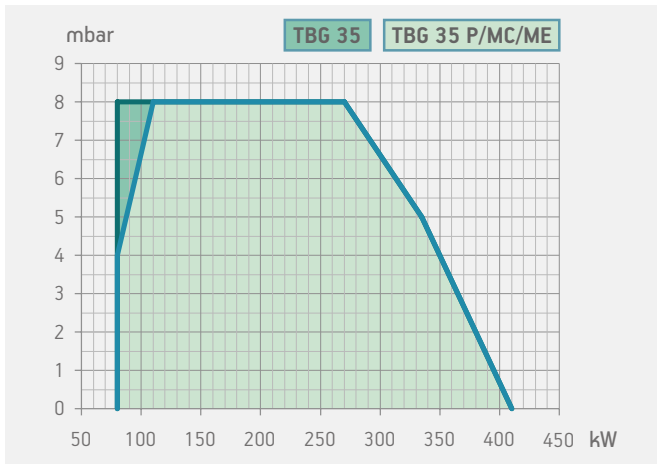
**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 35	440	210	230	378	270	108	160	860	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2
TBG 35 P	440	210	230	378	270	108	160	860	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2
TBG 35 MC	520	290	230	420	270	150	160	860	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2
TBG 35 ME	465	180	285	377	260	117	160	840	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 35	1000	600	510	38
TBG 35 P	1000	600	510	38
TBG 35 MC	1000	600	510	40
TBG 35 ME	1000	600	510	40

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 3	80 ÷ 410	<b>TBG 35</b>	<b>17320010</b>	1N AC 50Hz 230V	0,37	
	class 3	80 ÷ 410	<b>TBG 35 P</b>	<b>17330010</b>	1N AC 50Hz 230V	0,37	4)
	class 3	80 ÷ 410	<b>TBG 35 MC</b>	<b>17360010</b>	1N AC 50Hz 230V	0,37	4)
	class 3	80 ÷ 410	<b>TBG 35 ME</b>	<b>17350010</b>	1N AC 50Hz 230V	0,37	4)
Frequency 60 Hz							
	class 3	80 ÷ 410	<b>TBG 35</b>	<b>17325410</b>	1N AC 60Hz 220V	0,37	
	class 3	80 ÷ 410	<b>TBG 35 P</b>	<b>17335410</b>	1N AC 60Hz 220V	0,37	4)
	class 3	80 ÷ 410	<b>TBG 35 MC</b>	<b>17365410</b>	1N AC 60Hz 220V	0,37	4)
	class 3	80 ÷ 410	<b>TBG 35 ME</b>	<b>17355410</b>	1N AC 60Hz 220V	0,37	4)

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 35 MC: modulation kit (see page 324)	98000056
TBG 35 ME: modulation kit (see page 324)	98000059
TBG 35 MC/35 ME: modulating probe (see page 324)	
TBG 35 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980054
TBG 35-45 long combustion head L500 <b>NEW</b>	98000457

### GAS BURNERS ACCESSORIES

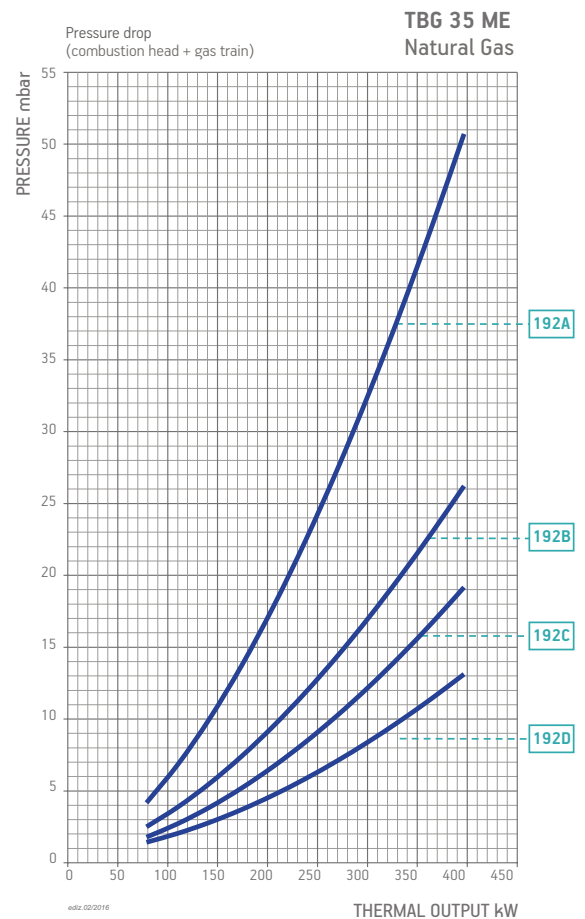
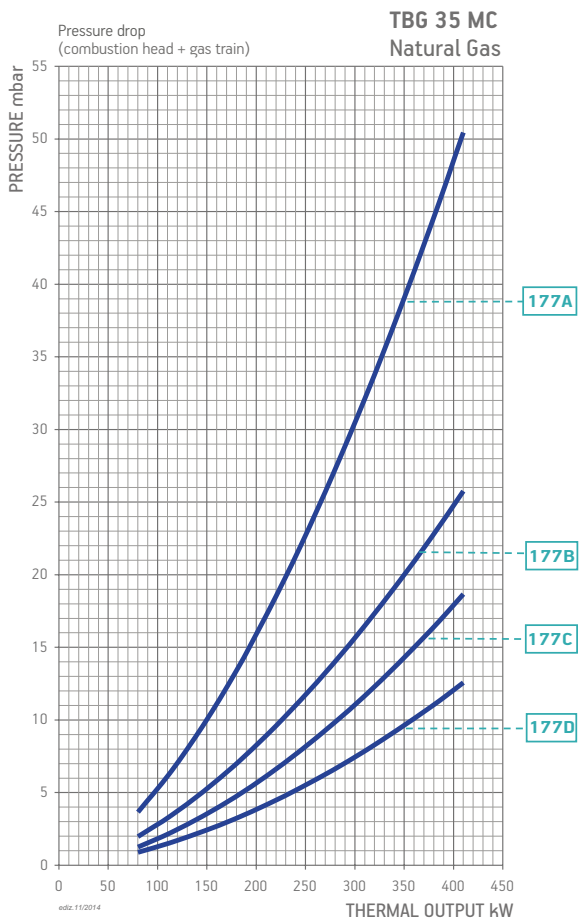
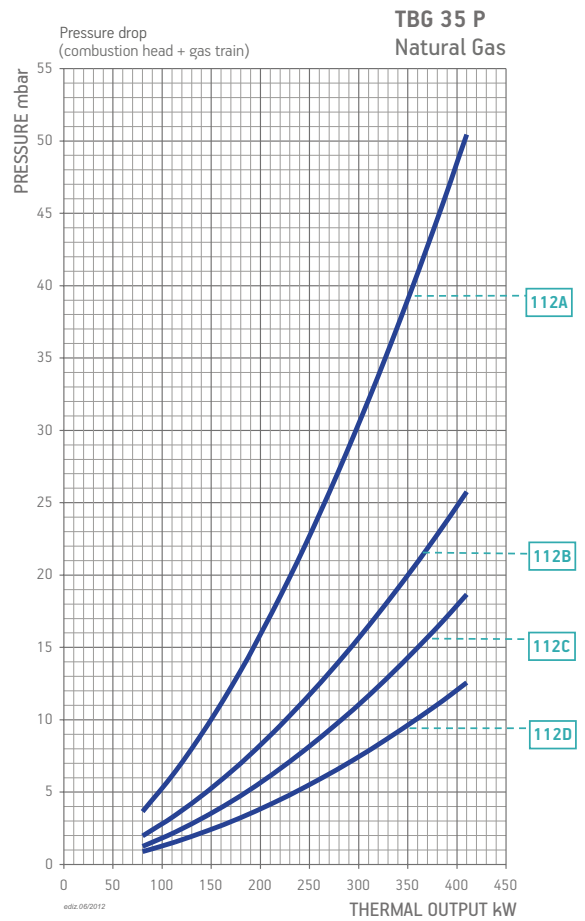
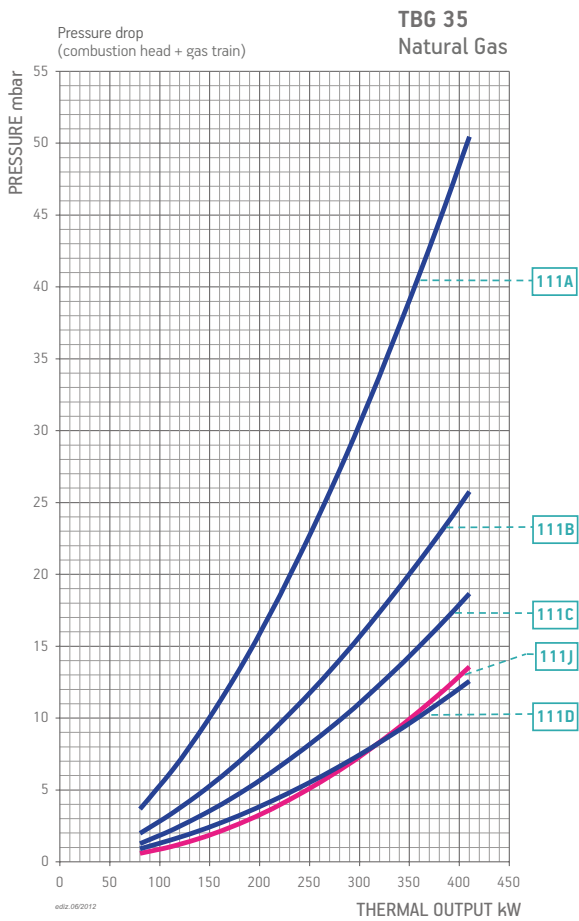
TBG 35/35 P/35 MC: boiler coupling kit, plug for wiring.  
 TBG 35 ME: boiler coupling kit.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the product in long head version, please contact the sales department.



## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 35	Natural gas	111A	CE/EXP	360	CTV	19990545	Included	96000005	-	M2	
						19990545	Included	96000005	98000100	M2	12)
		111B	CE/EXP	360	CTV	19990546	Included	96000004	-	M2	
						19990546	Included	96000004	98000100	M2	12)
		111C	CE/EXP	360	CTV	19990547	Included	96000004	-	M2	
						19990547	Included	96000004	98000100	M2	12)
111D	CE/EXP	360	CTV	19990548	Included	-	-	M2			
				19990548	Included	-	98000100	M2	12)		
111J	EXP	40		19990671	-	96000006	-	ME1			
TBG 35 P	Natural gas	112A	CE/EXP	360	CTV	19990545	Included	96000005	-	B7	
						19990545	Included	96000005	98000100	B7	12)
		112B	CE/EXP	360	CTV	19990546	Included	96000004	-	B7	
						19990546	Included	96000004	98000100	B7	12)
		112C	CE/EXP	360	CTV	19990547	Included	96000004	-	B7	
						19990547	Included	96000004	98000100	B7	12)
112D	CE/EXP	360	CTV	19990548	Included	-	-	B7			
				19990548	Included	-	98000100	B7	12)		
TBG 35 MC	Natural gas	177A	CE/EXP	360	CTV	19990545	Included	96000005	-	B7	
						19990545	Included	96000005	98000101	B7	12)
		177B	CE/EXP	360	CTV	19990546	Included	96000004	-	B7	
						19990546	Included	96000004	98000101	B7	12)
		177C	CE/EXP	360	CTV	19990547	Included	96000004	-	B7	
						19990547	Included	96000004	98000101	B7	12)
177D	CE/EXP	360	CTV	19990548	Included	-	-	B7			
				19990548	Included	-	98000101	B7	12)		
TBG 35 ME	Natural gas	192A	CE/EXP	360	CTV	19990555	Included	96000005	Included	D2	
		192B	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	
		192C	CE/EXP	360	CTV	19990557	Included	96000004	Included	D2	
		192D	CE/EXP	360	CTV	19990558	Included	-	Included	D2	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 35	LPG	CE/EXP	360	CTV	19990545	Included	96000005	-	M2	
					19990545	Included	96000005	98000100	M2	12)
TBG 35 P	LPG	CE/EXP	360	CTV	19990545	Included	96000005	-	B7	
					19990545	Included	96000005	98000100	B7	12)
TBG 35 MC	LPG	CE/EXP	360	CTV	19990545	Included	96000005	-	B7	
					19990545	Included	96000005	98000101	B7	12)
TBG 35 ME	LPG	CE/EXP	360	CTV	19990555	Included	96000005	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

LPG kit always supplied as accessory with the burner.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



TBG 45

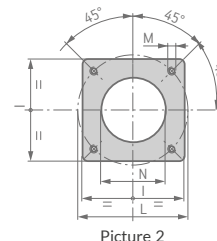
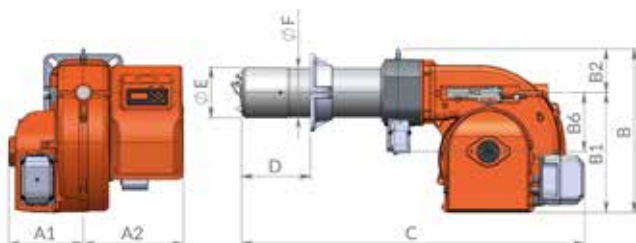


TBG 45 P

	TBG 45	TBG 45 P
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>single-stage</b>	<b>two-stage</b>
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Electric protection rating:	IP40	IP40

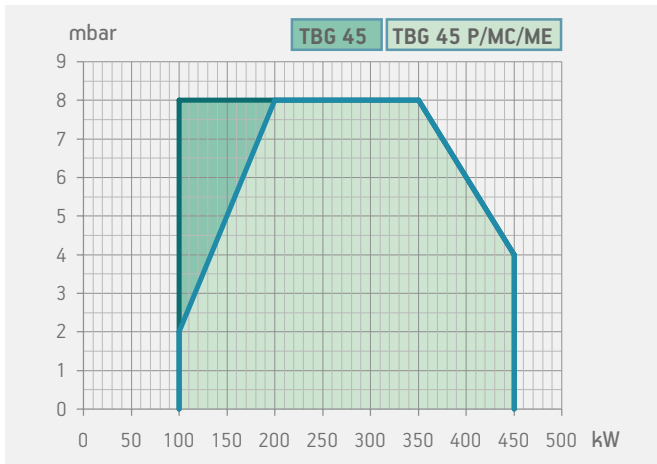
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Z mm	Z1 mm	Z2 mm	Pic.
TBG 45	480	200	280	433	325	108	160	880	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	-	-	-	2
TBG 45 P	550	270	280	433	325	108	160	920	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	-	-	-	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 45	1000	600	510	40
TBG 45 P	1000	600	510	40

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 3	100 ÷ 450	<b>TBG 45</b>	<b>17200010</b>	1N AC 50Hz 230V	0,5	
	class 3	100 ÷ 450	<b>TBG 45 P</b>	<b>17210010</b>	1N AC 50Hz 230V	0,5	4)
Frequency 60 Hz							
	class 3	100 ÷ 450	<b>TBG 45</b>	<b>17205410</b>	1N AC 60Hz 220V	0,5	
	class 3	100 ÷ 450	<b>TBG 45 P</b>	<b>17215410</b>	1N AC 60Hz 220V	0,5	4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980054
TBG 35-45 long combustion head L500 <b>NEW</b>	98000457

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the product in long head version, please contact the sales department.



TBG 45 MC



TBG 45 ME

	TBG 45 MC	TBG 45 ME	TBG 45 ME V
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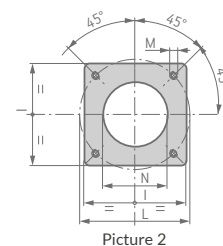
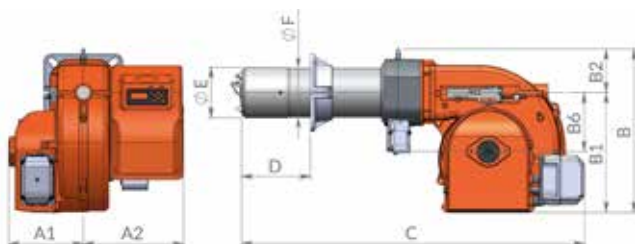
	mechanical two-stage progressive	electronic modulation	electronic modulation
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**Gas burner compliant with European standard EN676.**  
**Operation:**

P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:4	1:4	1:4
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

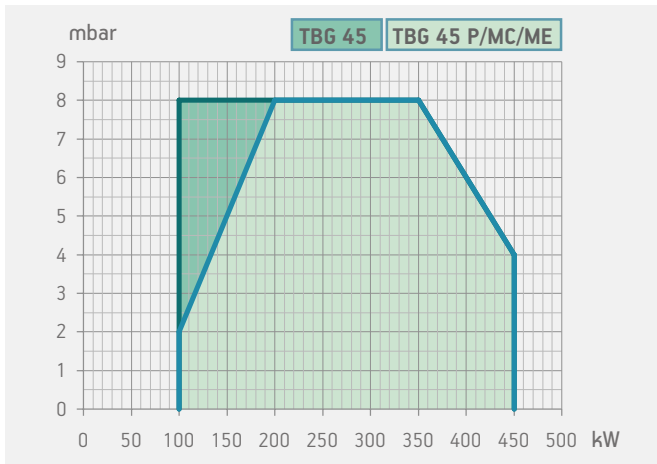
○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M mm	N mm	Pic.
TBG 45 MC	610	330	280	455	325	130	160	880	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2
TBG 45 ME	480	200	280	433	325	108	160	920	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2
TBG 45 ME V	480	200	280	433	325	108	160	920	140 ÷ 300	137	133	215	200 ÷ 245	M12	152	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 45 MC	1070	800	700	49
TBG 45 ME	1000	600	510	40
TBG 45 ME V	1050	750	480	43

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	100 ÷ 450	<b>TBG 45 MC</b>	<b>17240010</b>	1N AC 50Hz 230V	0,5	4)
			class 3	100 ÷ 450	<b>TBG 45 ME</b>	<b>17230020</b>	1N AC 50Hz 230V	0,5	4)
•	○	○	class 3	100 ÷ 450	<b>TBG 45 ME V</b>	<b>17230025</b>	1N AC 50Hz 230V	0,5	4)
Frequency 60 Hz									
			class 3	100 ÷ 450	<b>TBG 45 MC</b>	<b>17245410</b>	1N AC 60Hz 220V	0,5	4)
			class 3	100 ÷ 450	<b>TBG 45 ME</b>	<b>17235420</b>	1N AC 60Hz 220V	0,5	4)
•	○	○	class 3	100 ÷ 450	<b>TBG 45 ME V</b>	<b>on request</b>	1N AC 60Hz 220V	0,5	4)

○ Optional, • As standard

### TO COMPLETE THE BURNER

DESCRIPTION
TBG 45 ME V: modulating probe for LCM 100 (see page 324)

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 45 MC: modulation kit (see page 324)	98000058
TBG 45 ME: modulation kit (see page 324)	98000059
TBG 45 MC/45 ME: modulating probe (see page 324)	
TBG 45 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 35-45 long combustion head L500 <b>NEW</b>	98000457
Soundproof burner cover (see page 329)	97980054

### GAS BURNERS ACCESSORIES

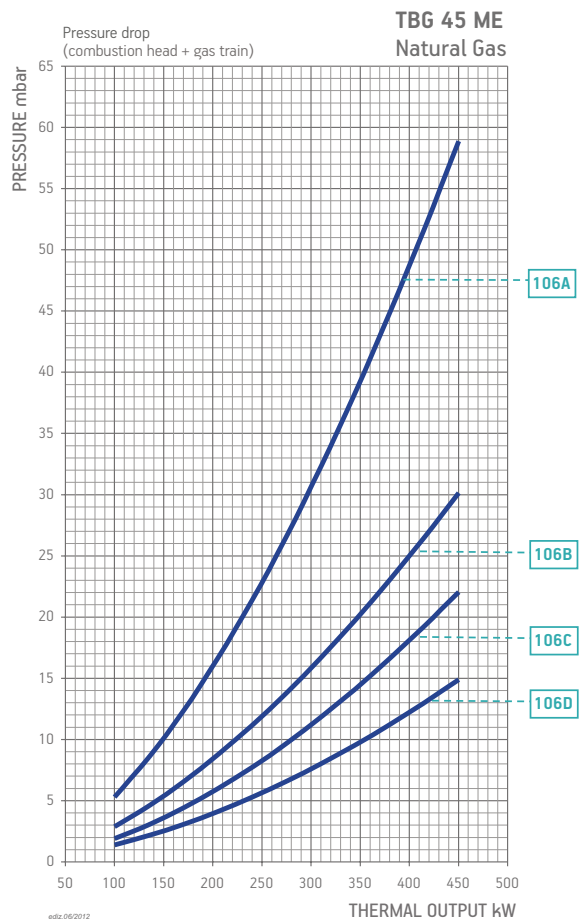
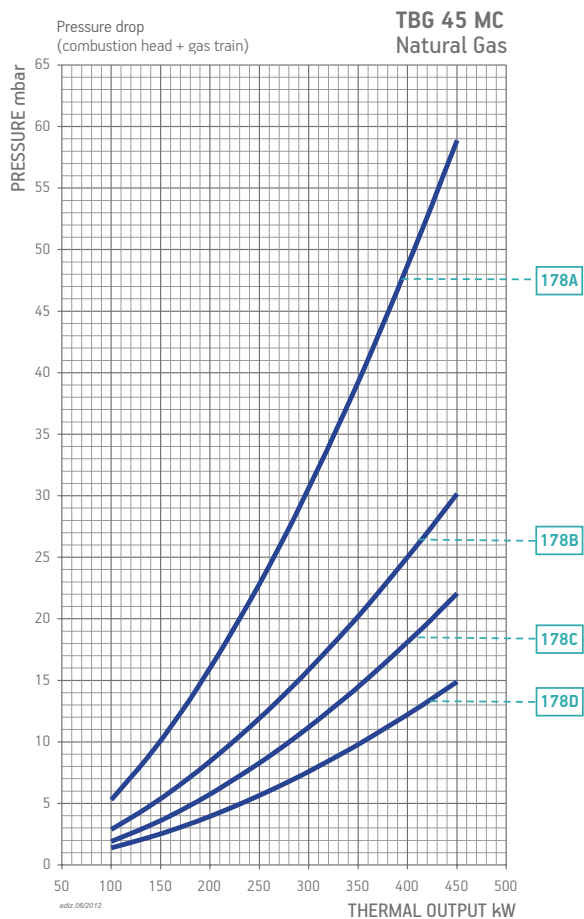
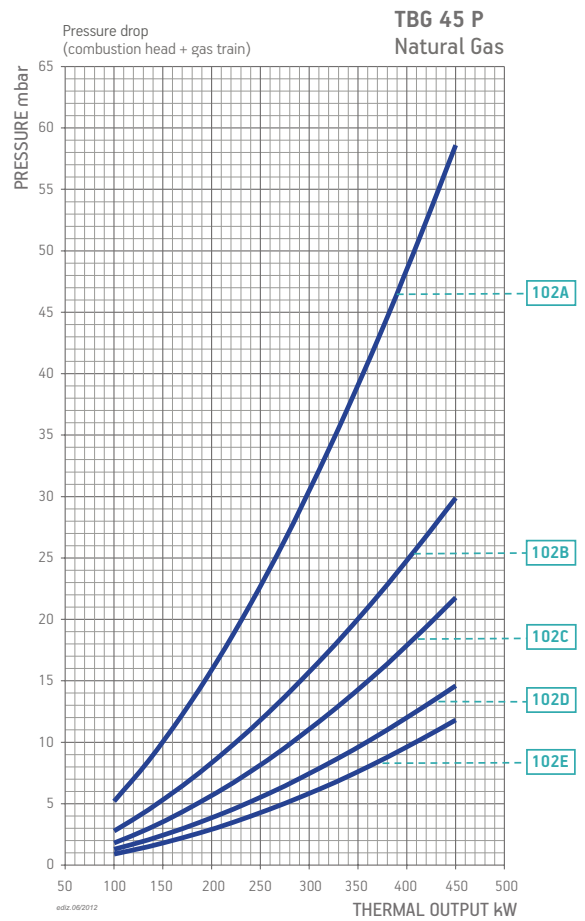
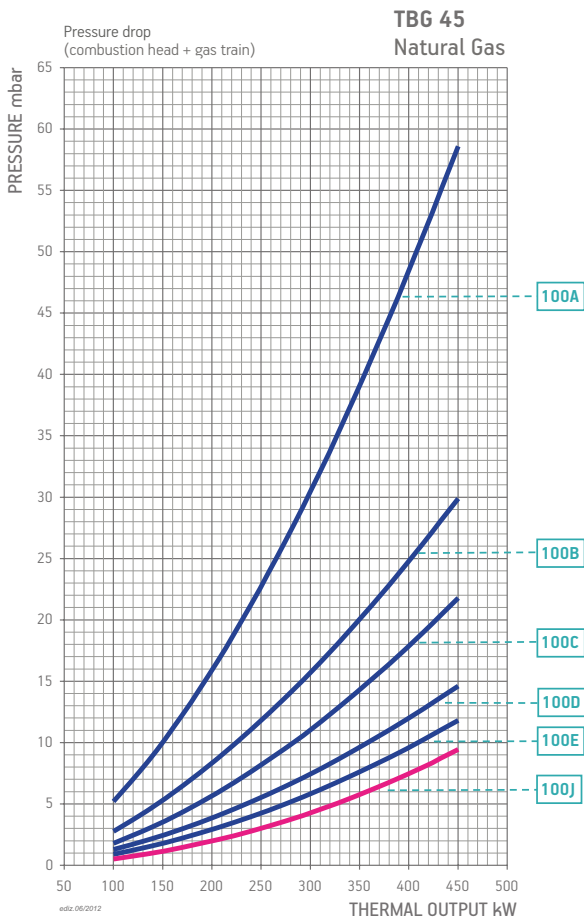
TBG 45 MC: boiler coupling kit, plug for wiring.
TBG 45 ME/45 ME V: boiler coupling kit.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the product in long head version, please contact the sales department.



## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note		
						Part no.	Part no.	Part no.	Part no.				
TBG 45	Natural gas	100A	CE/EXP	360	CTV	19990510	Included	96000005	-	B2			
						19990510	Included	96000005	98000101	B2	12)		
			EXP	360	CTV	19990545	Included	96000005	-	M2			
						19990545	Included	96000005	98000101	M2			
			100B	CE/EXP	360	CTV	19990511	Included	96000004	-	B2		
							19990511	Included	96000004	98000101	B2	12)	
		EXP	360	CTV	19990546	Included	96000004	-	M2				
					19990546	Included	96000004	98000101	M2				
		100C	CE/EXP	360	CTV	19990512	Included	96000004	-	B2			
						19990512	Included	96000004	98000101	B2	12)		
		EXP	360	CTV	19990547	Included	96000004	-	M2				
					19990547	Included	96000004	98000101	M2				
		100D	CE/EXP	360	CTV	19990513	Included	-	-	B2			
						19990513	Included	-	98000101	B2	12)		
		EXP	360	CTV	19990548	Included	-	-	M2				
					19990548	Included	-	98000101	M2				
		100E	CE/EXP	360	CTV	19990514	Included	96000013	-	B2			
						19990514	Included	96000013	98000101	B2	12)		
		EXP	360	CTV	19990549	Included	96000013	-	M2				
					19990549	Included	96000013	98000101	M2				
100J	EXP	140		19990471	-	-	-	ME4					
TBG 45 P	Natural gas	102A	CE/EXP	360	CTV	19990510	Included	96000005	-	B2			
						19990510	Included	96000005	98000101	B2	12)		
		102B	CE/EXP	360	CTV	19990511	Included	96000004	-	B2			
						19990511	Included	96000004	98000101	B2	12)		
		102C	CE/EXP	360	CTV	19990512	Included	96000004	-	B2			
						19990512	Included	96000004	98000101	B2	12)		
102D	CE/EXP	360	CTV	19990513	Included	-	-	B2					
				19990513	Included	-	98000101	B2	12)				
102E	CE/EXP	360	CTV	19990514	Included	96000013	-	B2					
				19990514	Included	96000013	98000101	B2	12)				
TBG 45 MC	Natural gas	178A	CE/EXP	360	CTV	19990545	Included	96000005	-	B7			
						19990545	Included	96000005	98000101	B7	12)		
		178B	CE/EXP	360	CTV	19990546	Included	96000004	-	B7			
						19990546	Included	96000004	98000101	B7	12)		
178C	CE/EXP	360	CTV	19990547	Included	96000004	-	B7					
				19990547	Included	96000004	98000101	B7	12)				
178D	CE/EXP	360	CTV	19990548	Included	-	-	B7					
				19990548	Included	-	98000101	B7	12)				
TBG 45 ME TBG 45 ME V	Natural gas	106A	CE/EXP	360	CTV	19990555	Included	96000005	Included	D2			
						19990555	Included	96000005	Included	D2			
		106B	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2			
						19990556	Included	96000004	Included	D2			
106C	CE/EXP	360	CTV	19990557	Included	96000004	Included	D2					
				19990557	Included	96000004	Included	D2					
106D	CE/EXP	360	CTV	19990558	Included	-	-	D2					
				19990558	Included	-	Included	D2					

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 45	LPG	CE/EXP	360	CTV	19990510	Included	96000005	-	B2	
					19990510	Included	96000005	98000101	B2	12)
		EXP	360	CTV	19990545	Included	96000005	-	M2	
19990545	Included				96000005	98000101	M2			
TBG 45 P	LPG	CE/EXP	360	CTV	19990510	Included	96000005	-	B2	
					19990510	Included	96000005	98000101	B2	12)
TBG 45 MC	LPG	CE/EXP	360	CTV	19990545	Included	96000005	-	B7	
					19990545	Included	96000005	98000101	B7	12)
TBG 45 ME/ME V	LPG	CE/EXP	360	CTV	19990555	Included	96000005	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

LPG kit always supplied as accessory with the burner.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



TBG 60



TBG 60 P

**Gas burner compliant with European standard EN676. Operation:**

Low NOx and CO emissions gas burner according to European standard EN676:

Adjusting the combustion head

Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler

High ventilation efficiency, low electrical input, low noise

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney

CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter

Possibility to add gas train with valve tightness control

Fail proof connectors for burner/gas train connection

Gas train outlet:

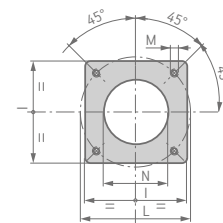
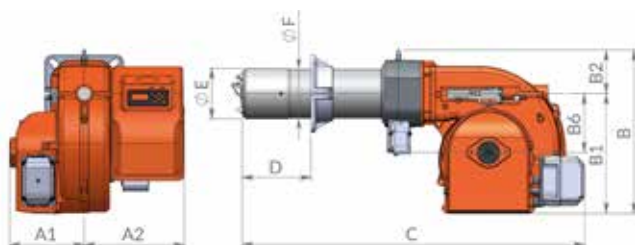
Flame detection by ionisation electrode with connector for microamperometer

Electric protection rating:

	TBG 60	TBG 60 P
	single-stage	two-stage
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Electric protection rating:	IP40	IP40

**LEGEND:**

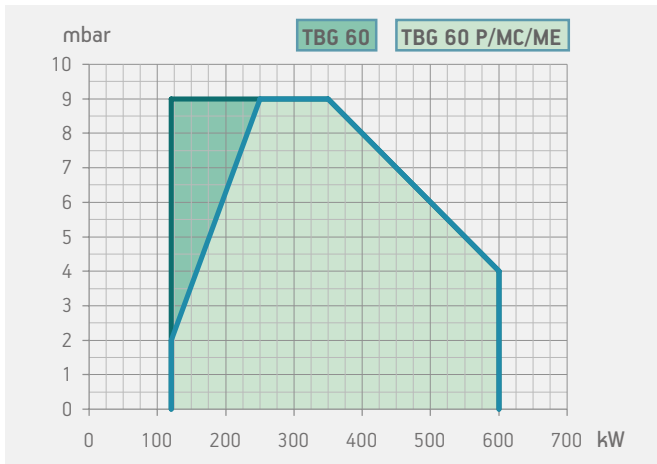
- As standard



Picture 2

Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 60	480	200	280	455	325	130	160	880	140 ÷ 300	156	152	260	225 ÷ 300	M12	171	2
TBG 60 P	550	270	280	455	325	130	160	920	140 ÷ 300	156	152	260	225 ÷ 300	M12	171	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 60	1000	600	510	42
TBG 60 P	1000	600	510	42

Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz						
class 3	120 ÷ 600	<b>TBG 60</b>	<b>17270010</b>	3N AC 50Hz 400V	0,74	
class 3	120 ÷ 600	<b>TBG 60 P</b>	<b>17280010</b>	3N AC 50Hz 400V	0,74	4)
Frequency 60 Hz						
class 3	120 ÷ 600	<b>TBG 60</b>	<b>17275410</b>	3N AC 60Hz 380V	0,65	
class 3	120 ÷ 600	<b>TBG 60 P</b>	<b>17285410</b>	3N AC 60Hz 380V	0,65	4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980054
TBG 60 long combustion head L500 <b>NEW</b>	98000458

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the product in long head version, please contact the sales department.



TBG 60 MC



TBG 60 ME

**TBG 60 MC**

**TBG 60 ME**

**TBG 60 ME V**

mechanical two-stage progressive

electronic modulation

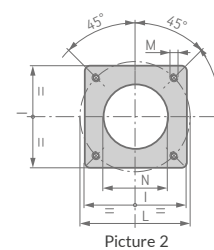
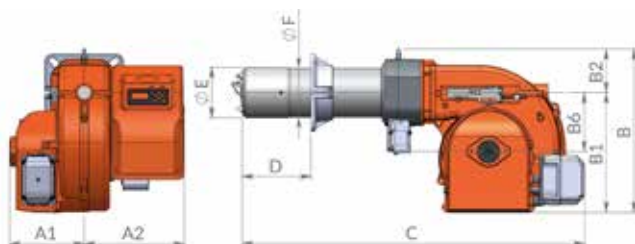
electronic modulation

**Gas burner compliant with European standard EN676. Operation:**

P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:5	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

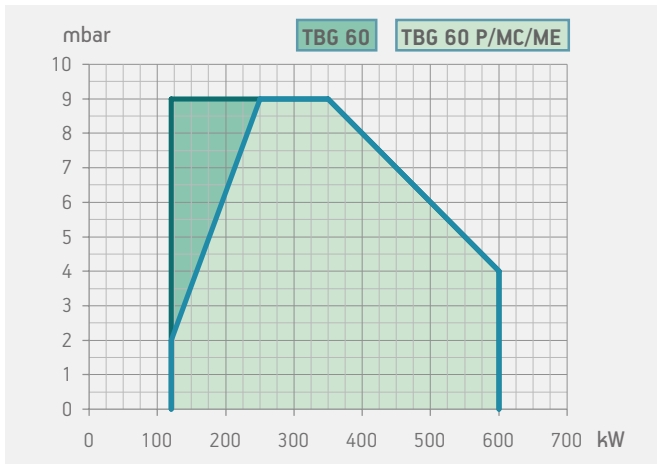
○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 60 MC	610	330	280	455	325	130	160	880	140 ÷ 300	156	152	260	225 ÷ 300	M12	171	2
TBG 60 ME	480	200	280	455	325	130	160	920	140 ÷ 300	156	152	260	225 ÷ 300	M12	171	2
TBG 60 ME V	480	200	280	455	325	130	160	920	140 ÷ 300	156	152	260	225 ÷ 300	M12	171	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 60 MC	1070	800	700	51
TBG 60 ME	1000	600	510	42
TBG 60 ME V	1050	750	480	44

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	120 ÷ 600	<b>TBG 60 MC</b>	<b>17310010</b>	3N AC 50Hz 400V	0,74	4)
			class 3	120 ÷ 600	<b>TBG 60 ME</b>	<b>17300020</b>	3N AC 50Hz 400V	0,74	4)
•	○	○	class 3	120 ÷ 600	<b>TBG 60 ME V</b>	<b>17300025</b>	1N AC 50Hz 230V	0,74	4)
Frequency 60 Hz									
			class 3	120 ÷ 600	<b>TBG 60 MC</b>	<b>17315410</b>	3N AC 60Hz 380V	0,65	4)
			class 3	120 ÷ 600	<b>TBG 60 ME</b>	<b>17305420</b>	3N AC 60Hz 380V	0,65	4)
•	○	○	class 3	120 ÷ 600	<b>TBG 60 ME V</b>	<b>17305425</b>	1N AC 60Hz 220V	0,65	4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 60 MC: modulation kit (see page 324)	98000058
TBG 60 ME: modulation kit (included in ME V version)	98000059
TBG 60 MC/60 ME: modulating probe (see page 324)	
TBG 60 MC: converter kit 0÷10V / 4÷20 mA	98000063

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 60 L500 long head kit <b>NEW</b>	98000458
Soundproof burner cover (see page 329)	97980054

### GAS BURNERS ACCESSORIES

TBG 60 MC: boiler coupling kit, plug for wiring.  
 TBG 60 ME/60 ME V: boiler coupling kit.

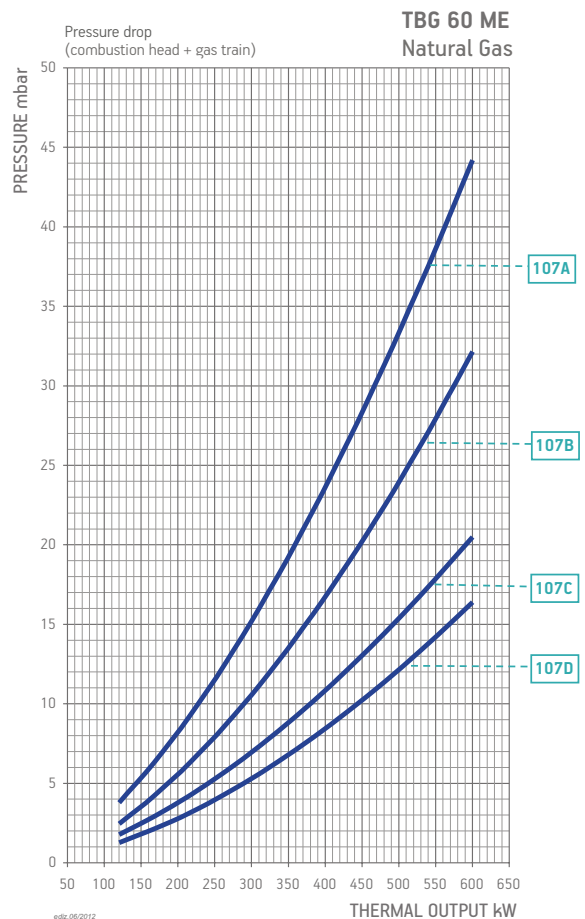
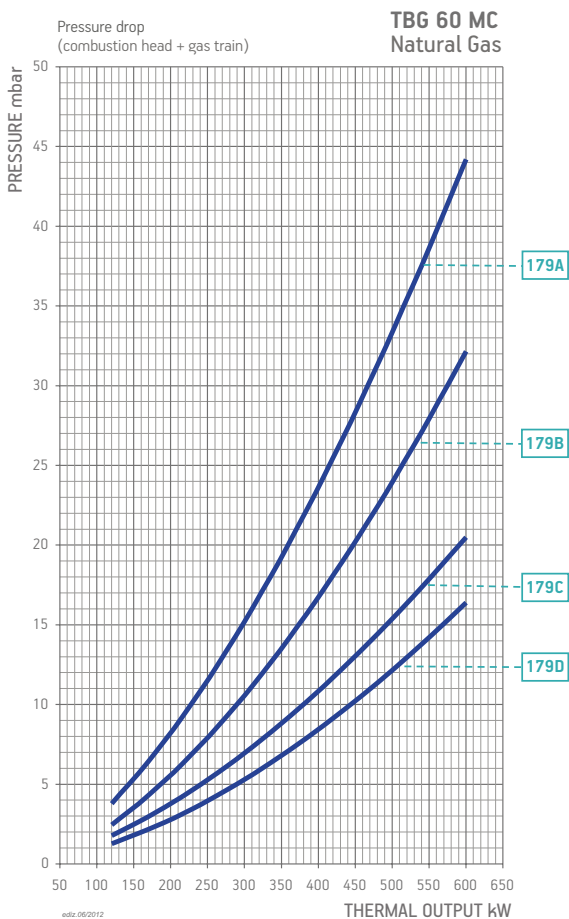
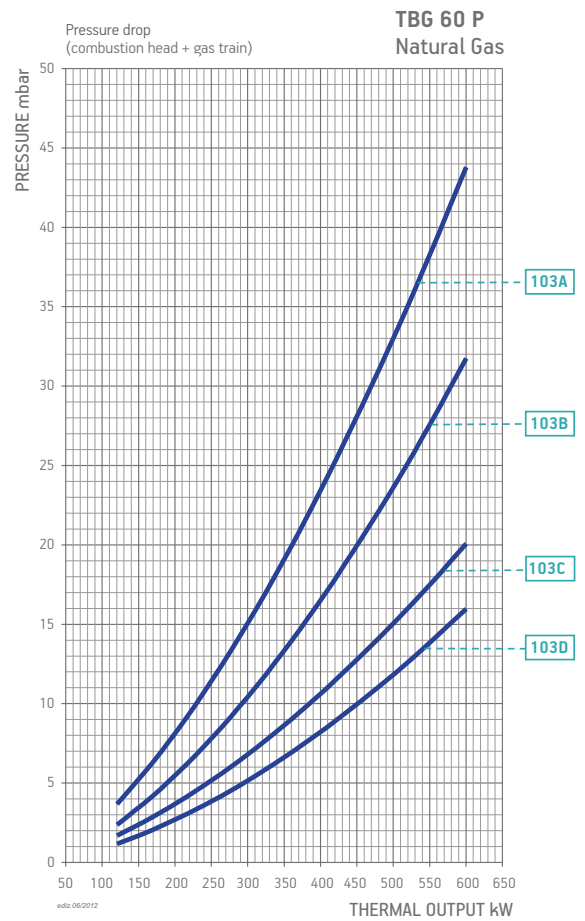
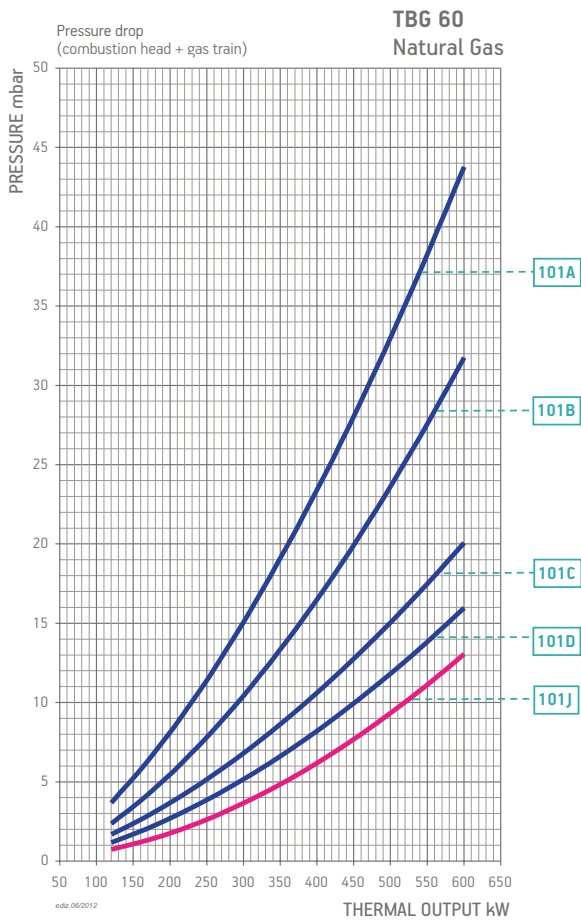
### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.

## BURNER/GAS TRAIN MATCH





## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	
						Part no.	Part no.	Part no.	Part no.			
TBG 60	Natural gas	101A	CE/EXP	360	CTV	19990511	Included	96000004	-	B2	12)	
						19990511	Included	96000004	98000101	B2		
			EXP	360	CTV	19990546	Included	96000004	-	M2	M2	
						19990546	Included	96000004	98000101	M2		
			101B	CE/EXP	360	CTV	19990512	Included	96000004	-	B2	12)
							19990512	Included	96000004	98000101	B2	
		EXP	360	CTV	19990547	Included	96000004	-	M2	M2		
					19990547	Included	96000004	98000101	M2			
		101C	CE/EXP	360	CTV	19990513	Included	-	-	B2	12)	
						19990513	Included	-	98000101	B2		
		EXP	360	CTV	19990548	Included	-	-	M2	M2		
					19990548	Included	-	98000101	M2			
101D	CE/EXP	360	CTV	19990514	Included	96000013	-	B2	12)			
				19990514	Included	96000013	98000101	B2				
EXP	360	CTV	19990549	Included	96000013	-	M2	M2				
			19990549	Included	96000013	98000101	M2					
101J	EXP	140		19990471	-	-	-	ME4				
TBG 60 P	Natural gas	103A	CE/EXP	360	CTV	19990511	Included	96000004	-	B2	12)	
						19990511	Included	96000004	98000101	B2		
		103B	CE/EXP	360	CTV	19990512	Included	96000004	-	B2	12)	
						19990512	Included	96000004	98000101	B2		
		103C	CE/EXP	360	CTV	19990513	Included	-	-	B2	12)	
19990513	Included					-	98000101	B2				
103D	CE/EXP	360	CTV	19990514	Included	96000013	98000101	B2	12)			
TBG 60 MC	Natural gas	179A	CE/EXP	360	CTV	19990546	Included	96000004	-	B7	12)	
						19990546	Included	96000004	98000101	B7		
		179B	CE/EXP	360	CTV	19990547	Included	96000004	-	B7	12)	
						19990547	Included	96000004	98000101	B7		
		179C	CE/EXP	360	CTV	19990548	Included	-	-	B7	12)	
19990548	Included					-	98000101	B7				
179D	CE/EXP	360	CTV	19990549	Included	96000013	98000101	B7	12)			
TBG 60 ME TBG 60 ME V	Natural gas	107A	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2		
		107B	CE/EXP	360	CTV	19990557	Included	96000004	Included	D2		
		107C	CE/EXP	360	CTV	19990558	Included	-	Included	D2		
		107D	CE/EXP	360	CTV	19990559	Included	96000013	Included	D2		

Burner model	Gas type	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 60	LPG	CE/EXP	360	CTV	19990511	Included	96000004	-	B2	12)
					19990511	Included	96000004	98000101	B2	
		EXP	360	CTV	19990546	Included	96000004	-	M2	M2
					19990546	Included	96000004	98000101	M2	
TBG 60 P	LPG	CE/EXP	360	CTV	19990511	Included	96000004	-	B2	12)
					19990511	Included	96000004	98000101	B2	
TBG 60 MC	LPG	CE/EXP	360	CTV	19990546	Included	96000004	-	B7	12)
					19990546	Included	96000004	98000101	B7	
TBG 60 ME/ME V	LPG	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

LPG kit always supplied as accessory with the burner.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.



TBG 85 P - 85 LX P

TBG 80 LX P

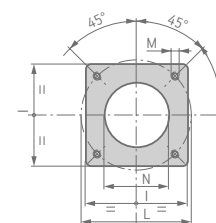
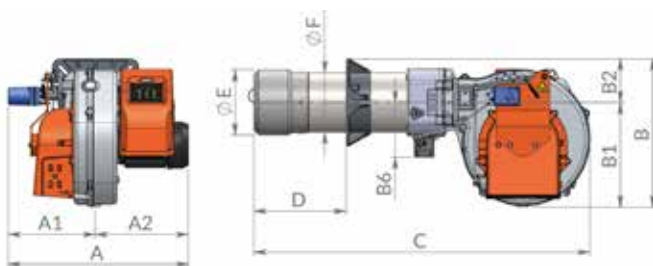
TBG 85 P

**Gas burner compliant with European standard EN676. Operation:**

	two-stage	two-stage
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Control panel with display diagram for working mode with indication lights	•	•
Electric protection rating:	IP40	IP40

**LEGEND:**

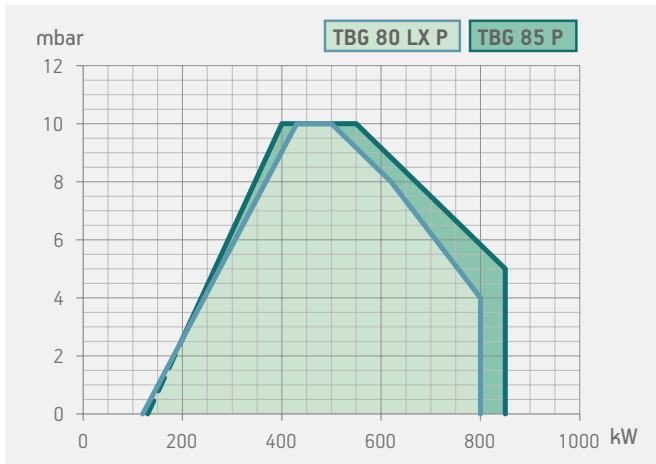
- As standard



Picture 2

Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 80 LX P	628	323	305	526	386	140	202	1200	175-400	180	178	280	250-325	M12	190	2
TBG 80 LX P 380/60	616	323	293	526	386	140	202	1200	175-400	180	178	280	250-325	M12	190	2
TBG 85 P	628	323	306	526	386	140	202	1194	200-400	180	178	280	250-325	M12	190	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 80 LX P	1070	800	700	75
TBG 85 P	1070	800	700	77

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 3	120 ÷ 800	<b>TBG 80 LX P</b>	<b>18490010</b>	3N AC 50Hz 400V	1,1	3) 4)
	class 2	130 ÷ 850	<b>TBG 85 P</b>	<b>18480010</b>	3N AC 50Hz 400V	1,1	3) 4)
Frequency 60 Hz							
	class 3	120 ÷ 800	<b>TBG 80 LX P</b>	<b>18495410</b>	3N AC 60Hz 380V	1,1	3) 4)
	class 2	130 ÷ 850	<b>TBG 85 P</b>	<b>18485410</b>	3N AC 60Hz 380V	1,1	3) 4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980053
TBG 80-85 long combustion head L600 <b>NEW</b>	98000455

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

- 3 Sound proof lid on burner air intake.
  - 4 Equipped with automatic air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



TBG 80 LX MC



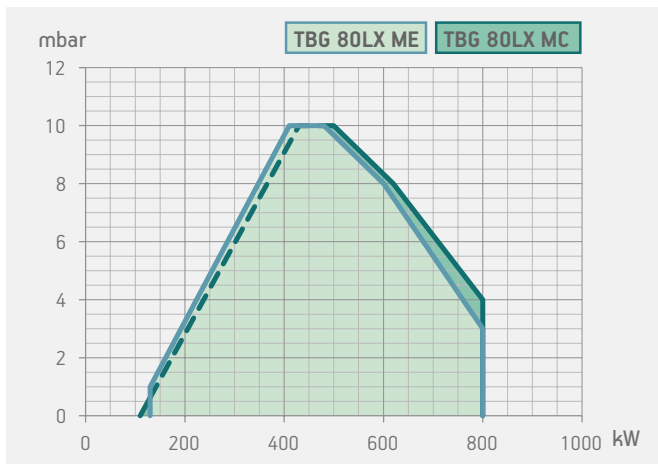
TBG 80 LX ME

**Gas burner compliant with European standard EN676. Operation:**

	TBG 80 LX MC	TBG 80 LX ME	TBG 80 LX ME V
	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:7	1:6	1:6
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

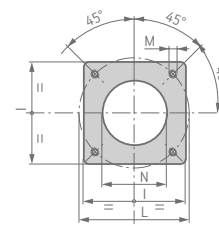
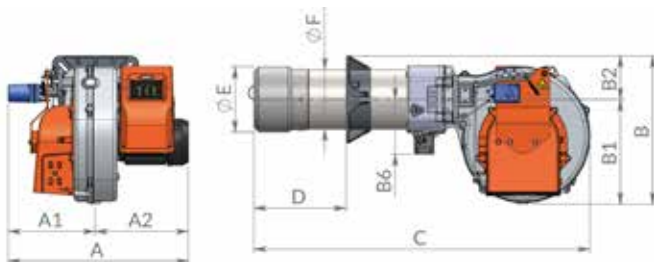
**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 80 LX MC	1070	800	700	78
TBG 80 LX ME	1070	800	700	78
TBG 80 LX ME V	1070	800	700	81

GAS BURNERS



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 80 LX MC	628	323	305	546	386	161	202	1200	175-400	180	178	280	250-325	M12	190	2
TBG 80 LX MC 380/60	616	323	293	546	386	161	202	1200	175-400	180	178	280	250-325	M12	190	2
TBG 80 LX ME	610	240	370	520	380	140	200	1265	175 ÷ 400	180	178	280	250 ÷ 325	M12	195	2
TBG 80 LX ME V	670	300	370	520	380	140	200	1265	175 ÷ 400	180	178	280	250 ÷ 325	M12	195	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	110 ÷ 800	<b>TBG 80 LX MC</b>	<b>18510010</b>	3N AC 50Hz 400V	1,1	3) 4)
			class 3	130 ÷ 800	<b>TBG 80 LX ME</b>	<b>17530020</b>	3N AC 50Hz 400V	1,1	3) 4)
•	○	○	class 3	130 ÷ 800	<b>TBG 80 LX ME V</b>	<b>17530025</b>	1N AC 50Hz 230V	1,1	3) 4)
Frequency 60 Hz									
			class 3	110 ÷ 800	<b>TBG 80 LX MC</b>	<b>18515410</b>	3N AC 60Hz 380V	1,1	3) 4)
			class 3	130 ÷ 800	<b>TBG 80 LX ME</b>	<b>17535420</b>	3N AC 60Hz 380V	1,1	3) 4)
•	○	○	class 3	130 ÷ 800	<b>TBG 80 LX ME V</b>	<b>on request</b>	1N AC 60Hz 220V	1,1	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 80 LX MC: modulation kit (see page 324)	
TBG 80 LX ME: modulation kit (included in ME V version)	98000059
TBG 80 LX MC/80 LX ME: modulating probe (see page 324)	
TBG 80 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 80-85 long combustion head L600 <b>NEW</b>	98000455
Soundproof burner cover (see page 329)	97980053

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 85 MC



TBG 85 ME

	TBG 85 MC	TBG 85 ME	TBG 85 ME V
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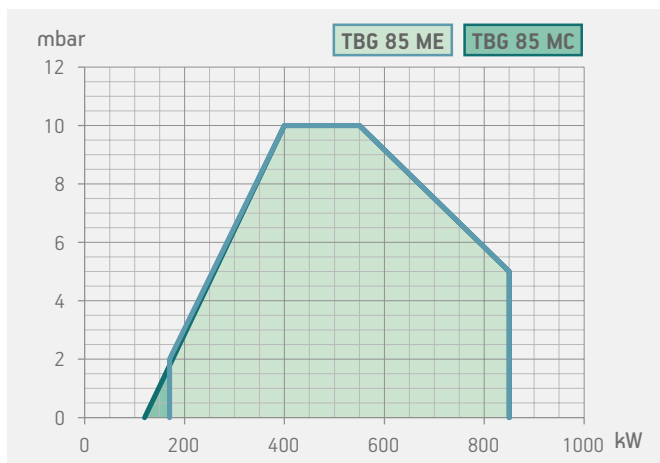
	mechanical two-stage progressive	electronic modulation	electronic modulation
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**Gas burner compliant with European standard EN676. Operation:**

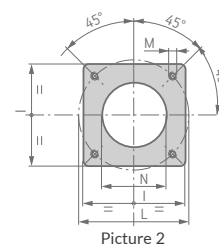
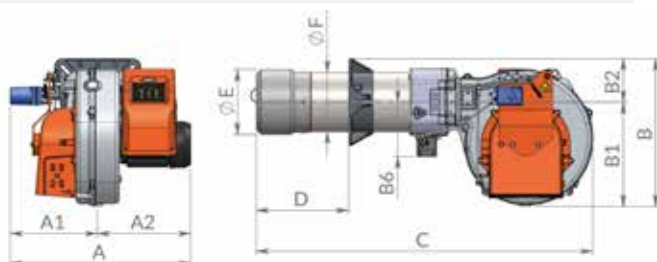
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:7	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with valve, operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 85 MC	1070	800	700	7
TBG 85 ME	1070	800	700	78
TBG 85 ME V	1070	800	700	81



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 85 MC	628	323	306	546	386	161	202	1194	200-400	180	178	280	250-325	M12	190	2
TBG 85 ME	610	240	370	520	380	140	200	1265	175 ÷ 400	180	178	280	250 ÷ 325	M12	195	2
TBG 85 ME V	670	300	370	520	380	140	200	1265	175 ÷ 400	180	178	280	250 ÷ 325	M12	195	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	120 ÷ 850	<b>TBG 85 MC</b>	<b>18500010</b>	3N AC 50Hz 400V	1,1	3) 4)
			class 2	170 ÷ 850	<b>TBG 85 ME</b>	<b>17500020</b>	3N AC 50Hz 400V	1,1	3) 4)
•	○	○	class 2	170 ÷ 850	<b>TBG 85 ME V</b>	<b>17500025</b>	1N AC 50Hz 230V	1,1	3) 4)
Frequency 60 Hz									
			class 2	120 ÷ 850	<b>TBG 85 MC</b>	<b>18505410</b>	3N AC 60Hz 380V	1,1	3) 4)
			class 2	170 ÷ 850	<b>TBG 85 ME</b>	<b>17505420</b>	3N AC 60Hz 380V	1,1	3) 4)
•	○	○	class 2	170 ÷ 850	<b>TBG 85 ME V</b>	<b>on request</b>	1N AC 60Hz 220V	1,1	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 85 MC: modulation kit (see page 324)	
TBG 85 ME: modulation kit (included in ME V version)	98000059
TBG 85 MC/ 85 ME: modulating probe (see page 324)	
TBG 85 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 60 L500 long head kit <b>NEW</b>	98000458
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

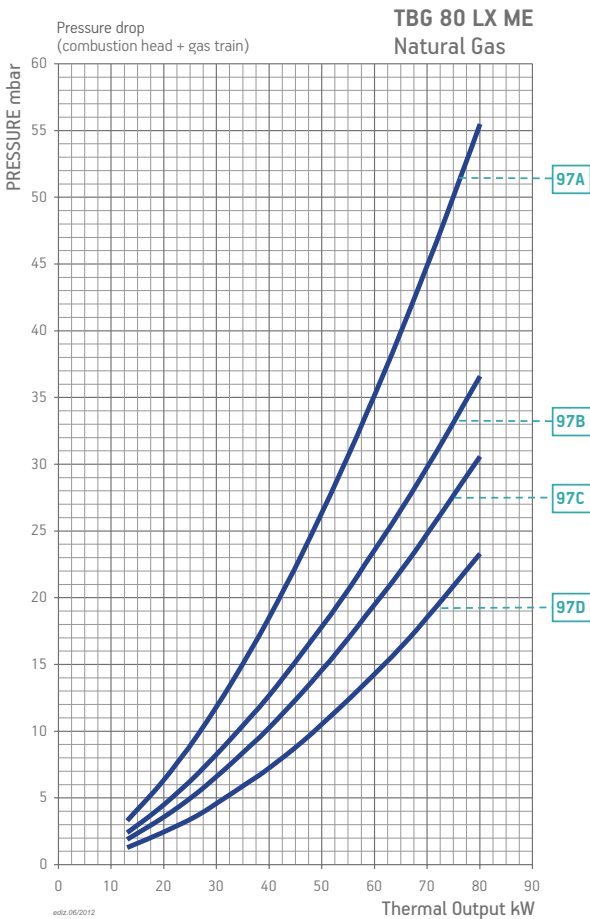
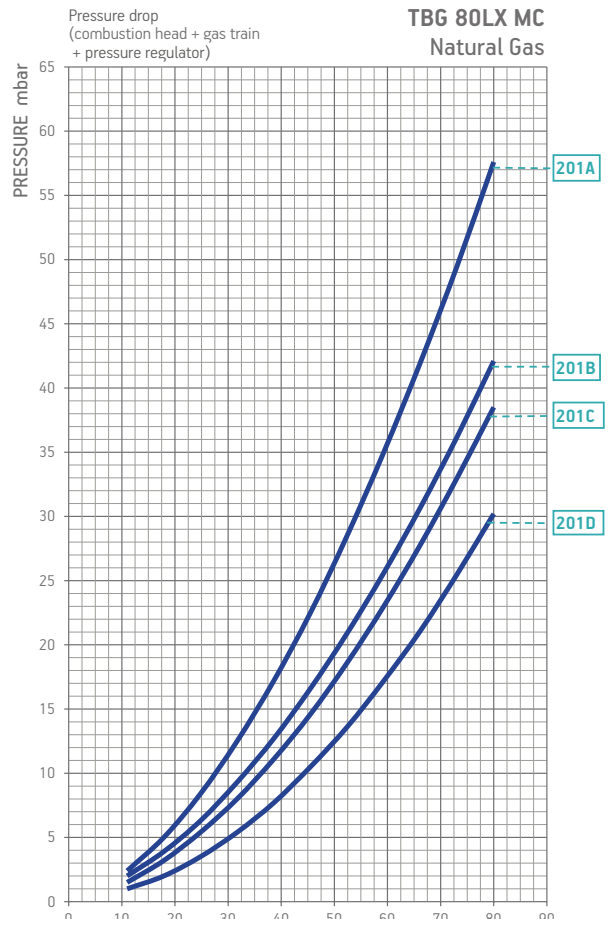
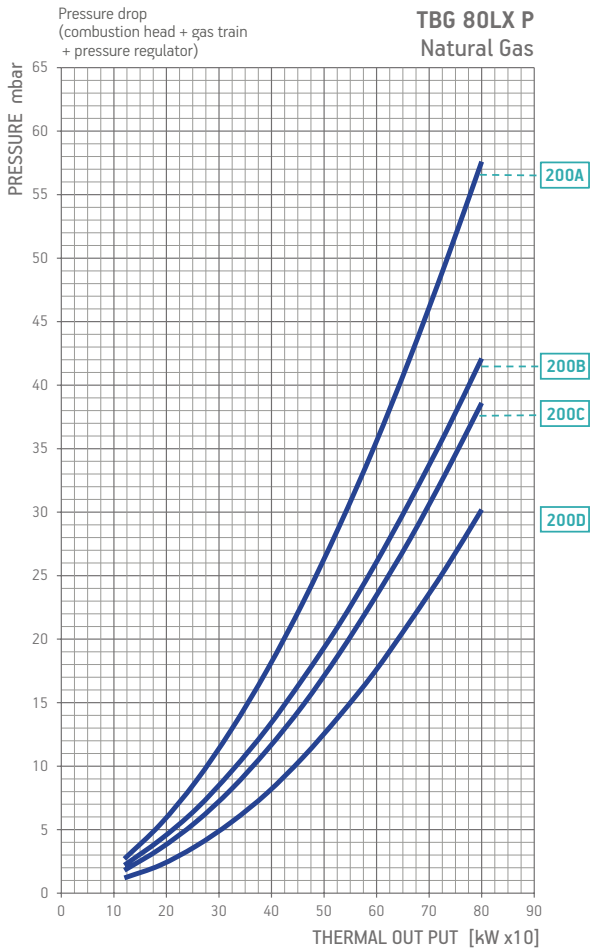
Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 80 LX P	Natural gas	200A	CE/EXP	360		19990712	Included	96000032	-	B7	
					CTV	19990712	Included	96000032	98000101	B7 12)	
		200B	CE/EXP	360		19990713	Included	96000007	-	B7	
					CTV	19990713	Included	96000007	98000101	B7 12)	
		200C	CE/EXP	360		19990715	Included	-	-	B7	
					CTV	19990715	Included	-	98000101	B7 12)	
		200D	CE/EXP	500		19990717	Included	-	-	B7	
					CTV	19990717	Included	-	98000102	B7 12)	
			CE/EXP	500		19990720	Included	-	-	D5	
					CTV	19990720	Included	-	98000101	D5 12)	
TBG 80 LX MC	Natural gas	201A	CE/EXP	360		19990712	Included	96000032	-	B7	
					CTV	19990712	Included	96000032	98000101	B7 12)	
		201B	CE/EXP	360		19990713	Included	96000007	-	B7	
					CTV	19990713	Included	96000007	98000101	B7 12)	
		201C	CE/EXP	360		19990715	Included	-	-	B7	
					CTV	19990715	Included	-	98000101	B7 12)	
		201D	CE/EXP	500		19990717	Included	-	-	B7	
					CTV	19990717	Included	-	98000102	B7 12)	
			CE/EXP	500		19990720	Included	-	-	D5	
					CTV	19990720	Included	-	98000101	D5 12)	
TBG 80 LX ME TBG 80 LX ME V	Natural gas	97A	CE/EXP	360	CTV	19990557	Included	96000032	Included	D2	
		97B	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		97C	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		97D	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
					CTV	19990725	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 80 LX P	LPG	CE/EXP	360		19990713	Included	96000032	-	98000462	B7	
				CTV	19990713	Included	96000032	98000101	98000462	B7 12)	
TBG 80 LX MC	LPG	CE/EXP	360		19990713	Included	96000032	-	98000462	B7	
				CTV	19990713	Included	96000032	98000101	98000462	B7 12)	
TBG 80 LX ME	LPG	CE/EXP	360	CTV	19990557	Included	96000032	Included	98000462	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

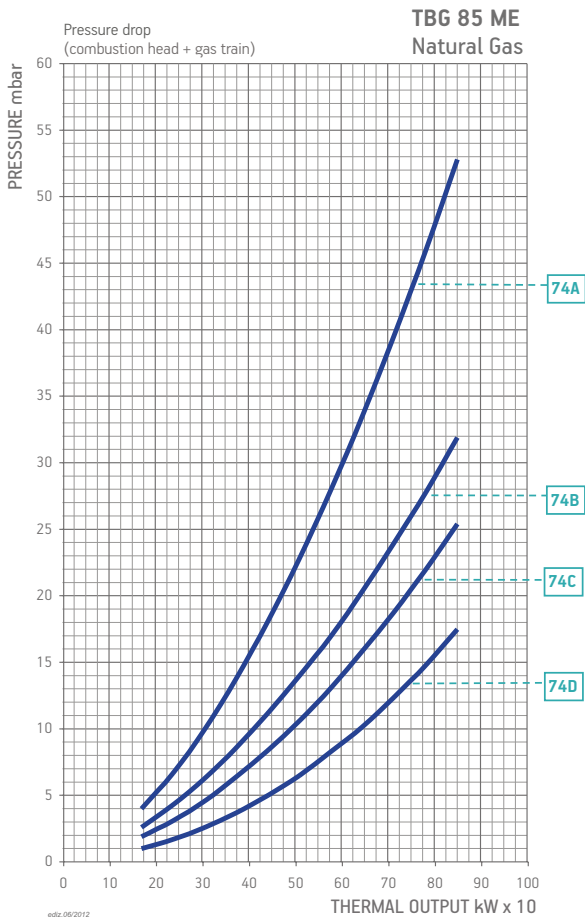
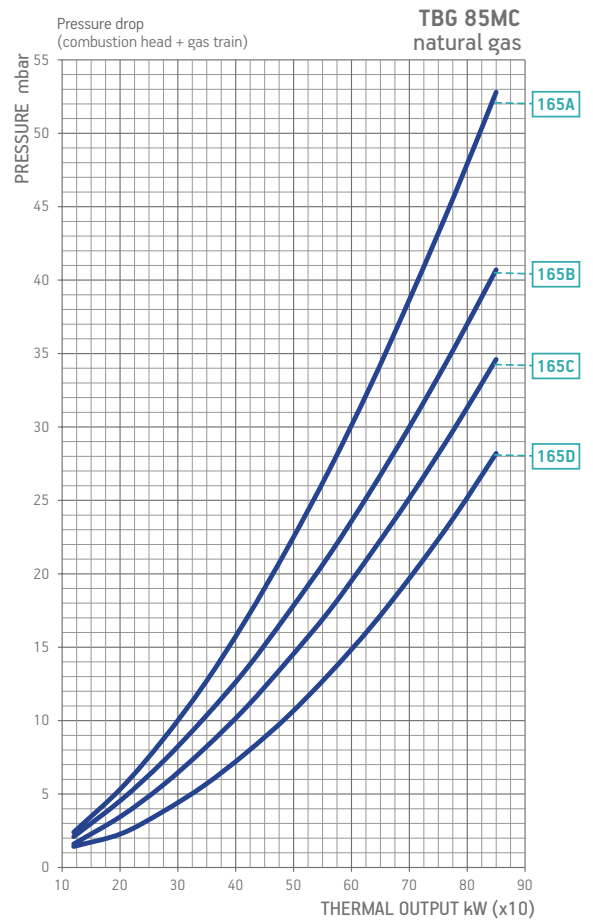
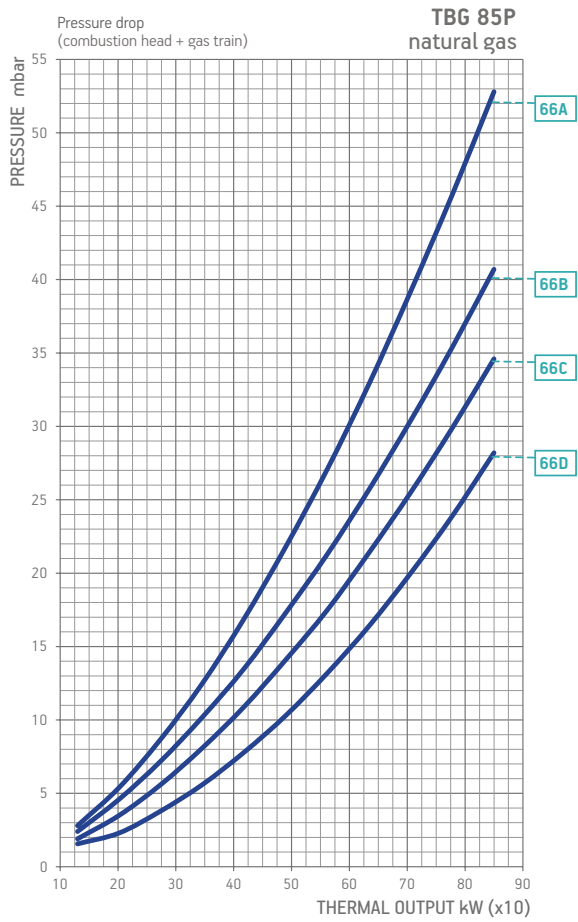
### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.

## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	
						Part no.	Part no.	Part no.	Part no.			
TBG 85 P	Natural gas	66A	CE/EXP	360	CTV	19990712	Included	96000032	-	B7		
						19990712	Included	96000032	98000101	B7	12)	
		66B	CE/EXP	360	CTV	19990713	Included	96000007	-	B7		
						19990713	Included	96000007	98000101	B7	12)	
		66C	CE/EXP	360	CTV	19990715	Included	-	-	B7		
						19990715	Included	-	98000101	B7	12)	
		66D	CE/EXP	500	CTV	19990717	Included	-	-	B7		
						19990717	Included	-	98000102	B7	12)	
			CE/EXP	500	CTV	19990720	Included	-	-	D5		
						19990720	Included	-	98000101	D5	12)	
TBG 85 MC	Natural gas	165A	CE/EXP	360	CTV	19990712	Included	96000032	-	B7		
						19990712	Included	96000032	98000101	B7	12)	
		165B	CE/EXP	360	CTV	19990713	Included	96000007	-	B7		
						19990713	Included	96000007	98000101	B7	12)	
		165C	CE/EXP	360	CTV	19990715	Included	-	-	B7		
						19990715	Included	-	98000101	B7	12)	
		165D	CE/EXP	500	CTV	19990717	Included	-	-	B7		
						19990717	Included	-	98000102	B7	12)	
			CE/EXP	500	CTV	19990720	Included	-	-	D5		
						19990720	Included	-	98000101	D5	12)	
TBG 85 ME TBG 85 ME V	Natural gas	74A	CE/EXP	360	CTV	19990557	Included	96000032	Included	D2		
		74B	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2		
		74C	CE/EXP	360	CTV	19990559	Included	-	Included	D2		
		74D	CE/EXP	500	CTV	19990524	Included	-	Included	D2		

Burner model	Gas type	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 85 P	LPG	CE/EXP	360	CTV	19990713	Included	96000007	-	98000357	B7	
					19990713	Included	96000007	98000101	98000357	B7	12)
TBG 85 MC	LPG	CE/EXP	360	CTV	19990713	Included	96000007	-	98000357	B7	
					19990713	Included	96000007	98000101	98000357	B7	12)
TBG 85 ME/ME V	LPG	CE/EXP	360	CTV	19990558	Included	96000007	Included	98000357	D2	
TBG 85 ME/ME V	LPG	CE/EXP	360	CTV	19990558	Included	96000007	Included	98000357	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.



TBG 120 P - TBG 110 LX P

### TBG 120 P

### TBG 110 LX P

#### Gas burner compliant with European standard EN676. Operation:

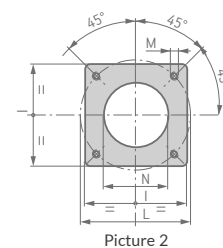
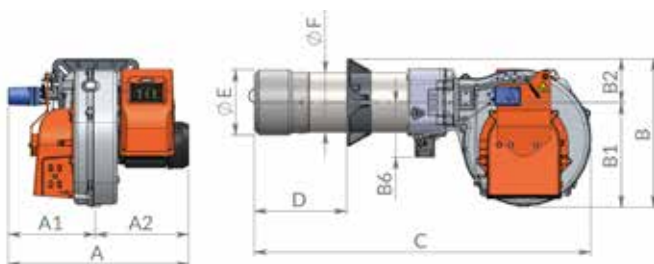
#### two-stage

#### two-stage

Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 3
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	•	•
Possibility to add gas train with valve tightness control	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Control panel with display diagram for working mode with indication lights.	•	•
Electric protection rating:	IP40	IP40

#### LEGEND:

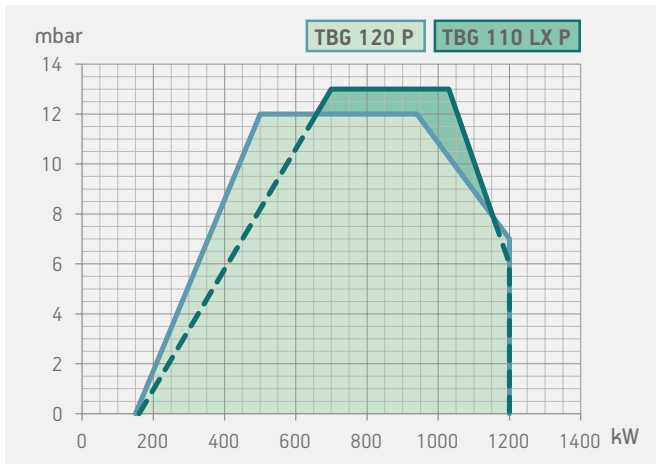
- As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 120 P	641	323	319	545	386	160	202	1244	200-450	224	219	320	280-370	M12	235	2
TBG 110 LX P	641	323	318	546	386	160	202	1245	200-450	224	219	320	280-370	M12	235	2
TBG 110 LX P 380/60	628	323	305	546	386	160	202	1245	250-450	224	219	320	280-370	M12	235	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 120 P	1070	800	700	85
TBG 110 LX P	1070	800	700	
TBG 110 LX P 380/60	1070	800	700	

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 2	150 ÷ 1200	<b>TBG 120 P</b>	<b>18570010</b>	3N AC 50Hz 400V	1,5	3) 4)
	class 3	160 ÷ 1200	<b>TBG 110 LX P</b>	<b>18580010</b>	3N AC 50Hz 400V	1,5	3) 4)
Frequency 60 Hz							
	class 2	150 ÷ 1200	<b>TBG 120 P</b>	<b>18575410</b>	3N AC 60Hz 380V	1,5	3) 4)
	class 3	160 ÷ 1200	<b>TBG 110 LX P</b>	<b>18585410</b>	3N AC 60Hz 380V	1,5	3) 4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980053
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

- 3 Sound proof lid on burner air intake.
  - 4 Equipped with automatic air closure device.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 110 LX MC



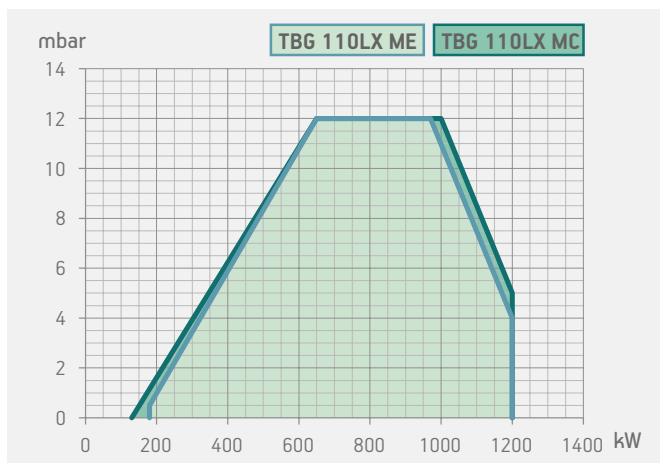
TBG 110 LX ME

	TBG 110 LX MC	TBG 110 LX ME	TBG 110 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>			
	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:9	1:6	1:6
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

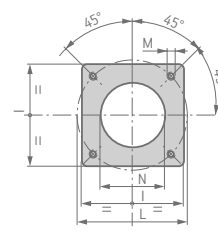
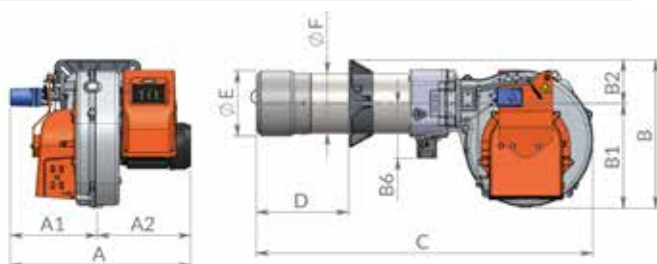
### LEGEND:

○ Optional; ● As standard





Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 110 LX MC	1070	800	700	87
TBG 110 LX ME	1070	800	700	87
TBG 110 LX ME V	1530	760	700	101



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 110 LX MC	641	323	319	546	386	161	202	1244	200-450	224	219	320	280-370	M12	235	2
TBG 110 LX MC 380/60	628	323	305	546	386	161	202	1244	200-450	224	219	320	280-370	M12	235	2
TBG 110 LX ME	610	240	370	540	380	160	200	1315	200 ÷ 450	224	219	320	280 ÷ 370	M12	239	2
TBG 110 LX ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	224	219	320	280 ÷ 370	M12	239	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	130 ÷ 1200	<b>TBG 110 LX MC</b>	<b>18600010</b>	3N AC 50Hz 400V	1,5	3) 4)
			class 3	180 ÷ 1200	<b>TBG 110 LX ME</b>	<b>17600020</b>	3N AC 50Hz 400V	1,5	3) 4)
•	○	○	class 3	180 ÷ 1200	<b>TBG 110 LX ME V</b>	<b>17600025</b>	3N AC 50Hz 400V	1,5	3) 4)
Frequency 60 Hz									
			class 3	130 ÷ 1200	<b>TBG 110 LX MC</b>	<b>18605410</b>	3N AC 60Hz 380V	1,5	3) 4)
			class 3	180 ÷ 1200	<b>TBG 110 LX ME</b>	<b>17605420</b>	3N AC 60Hz 380V	1,5	3) 4)
•	○	○	class 3	180 ÷ 1200	<b>TBG 110 LX ME V</b>	<b>on request</b>	3N AC 60Hz 380V	1,5	3) 4)

○ Optional, • As standard

## MODULATING MODE

DESCRIPTION	PART NO.
TBG 110 LX MC: modulation kit (see page 324)	
TBG 110 LX ME: modulation kit (included in ME V version)	98000059
TBG 110 LX MC/110 LX ME: modulating probe (see page 324)	
TBG 110 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

## NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

## GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

## N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 120 MC

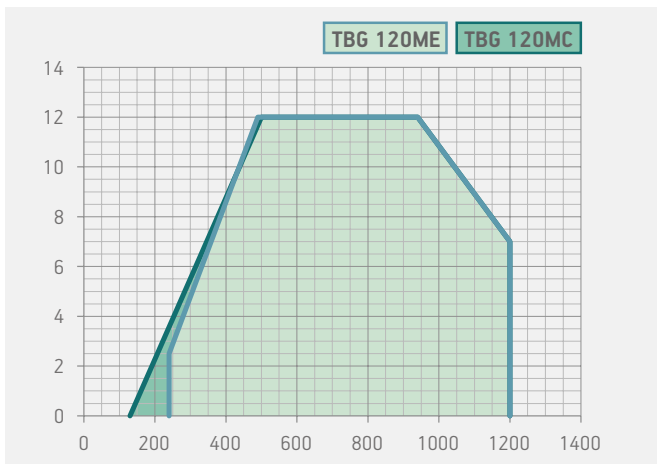


TBG 120 ME

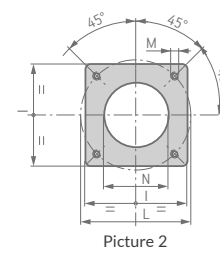
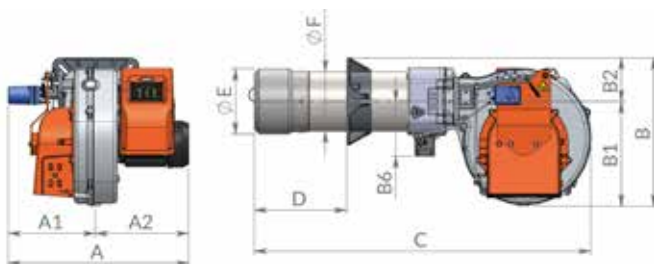
	TBG 120 MC	TBG 120 ME	TBG 120 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:9	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with valve, operation and safety valve with electromagnetic drive, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Possibility to add gas train with valve tightness control	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 120 MC	1070	800	700	85
TBG 120 ME	1070	800	700	87
TBG 120 ME V	1530	760	700	101



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 120 MC	641	323	319	545	386	160	202	1244	200-450	224	219	320	280-370	M12	235	2
TBG 120 ME	610	240	370	540	380	160	200	1315	200 ÷ 450	224	219	320	280 ÷ 370	M12	239	2
TBG 120 ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	224	219	320	280 ÷ 370	M12	239	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	130 ÷ 1200	<b>TBG 120 MC</b>	<b>18590010</b>	3N AC 50Hz 400V	1,5	3) 4)
			class 2	240 ÷ 1200	<b>TBG 120 ME</b>	<b>17570020</b>	3N AC 50Hz 400V	1,5	3) 4)
•	○	○	class 2	240 ÷ 1200	<b>TBG 120 ME V</b>	<b>17570025</b>	3N AC 50Hz 400V	1,5	3) 4)
Frequency 60 Hz									
			class 2	130 ÷ 1200	<b>TBG 120 MC</b>	<b>18595410</b>	3N AC 60Hz 380V	1,5	3) 4)
			class 2	240 ÷ 1200	<b>TBG 120 ME</b>	<b>17575420</b>	3N AC 60Hz 380V	1,5	3) 4)
•	○	○	class 2	240 ÷ 1200	<b>TBG 120 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	1,5	3) 4)

○ Optional, • As standard

## MODULATING MODE

DESCRIPTION	PART NO.
TBG 120 MC: modulation kit (see page 324)	
TBG 120 ME: modulation kit (included in ME V version)	98000059
TBG 120 MC/120 ME: modulating probe (see page 324)	
TBG 120 MC: converter kit 0÷10V / 4÷20 mA	98000063

## NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

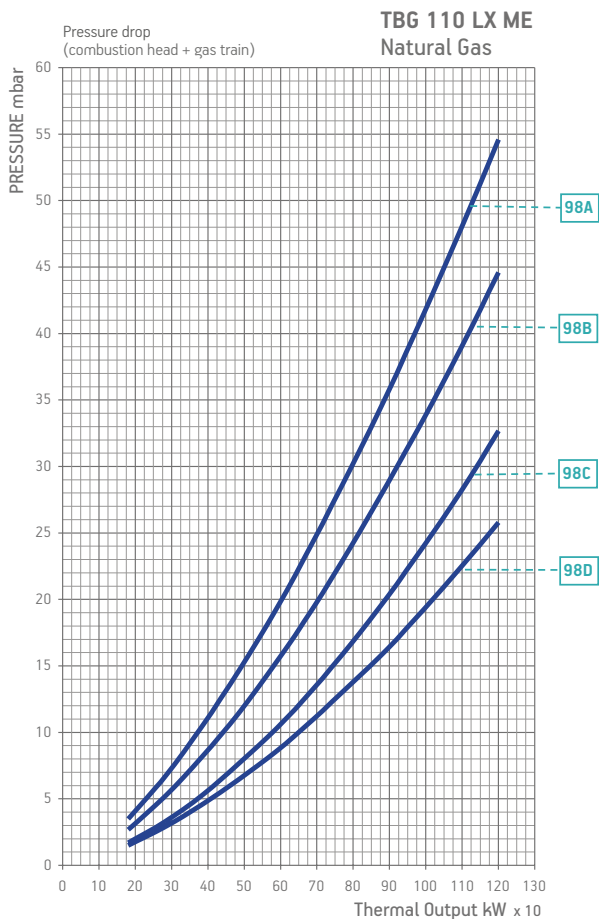
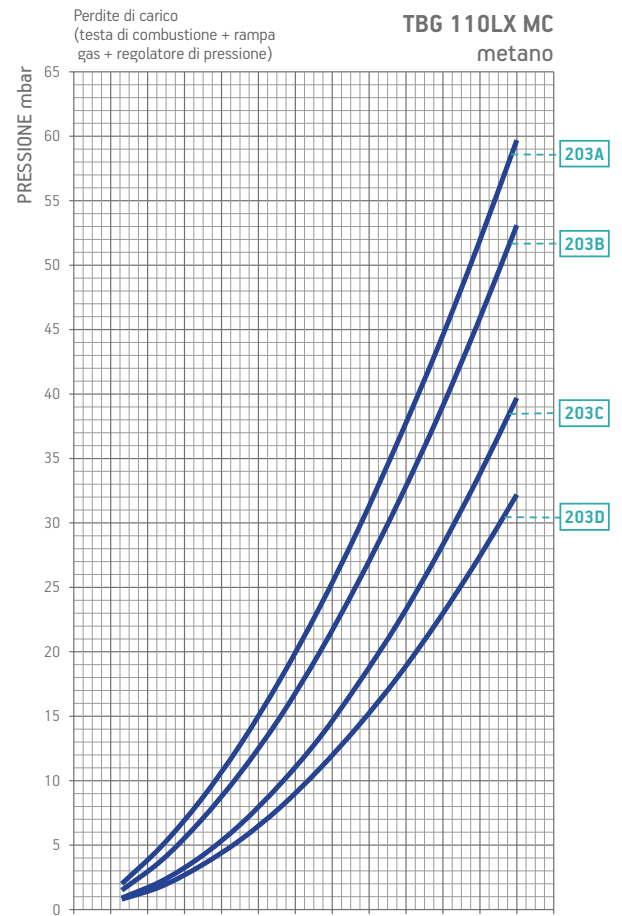
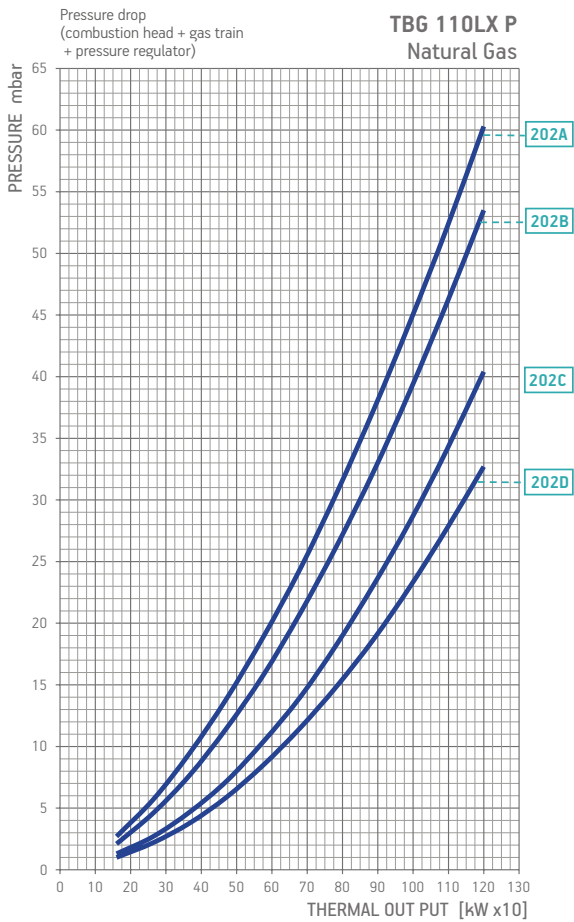
## GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

## N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 110 LX P	Natural gas	202A	CE/EXP	360		19990714	Included	96000007	-	B7	
						CTV	19990714	Included	96000007	98000101	B7
		202B	CE/EXP	360		19990716	Included	-	-	B7	
						CTV	19990716	Included	-	98000101	B7
		202C	CE/EXP	500		19990717	Included	-	-	B7	
						CTV	19990717	Included	-	98000102	B7
		202C	CE/EXP	500		19990720	Included	-	-	D5	
						CTV	19990720	Included	-	98000101	D5
		202D	CE/EXP	500		19990718	Included	-	-	B7	
						CTV	19990718	Included	-	98000101	B7
		202D	CE/EXP	500		19990721	Included	-	-	D5	
						CTV	19990721	Included	-	98000101	D5
TBG 110 LX MC	Natural gas	203A	CE/EXP	360		19990714	Included	96000007	-	B7	
						CTV	19990714	Included	96000007	98000101	B7
		203B	CE/EXP	360		19990716	Included	-	-	B7	
						CTV	19990716	Included	-	98000101	B7
		203C	CE/EXP	500		19990717	Included	-	-	B7	
						CTV	19990717	Included	-	98000102	B7
		203C	CE/EXP	500		19990720	Included	-	-	D5	
						CTV	19990720	Included	-	98000101	D5
		203D	CE/EXP	500		19990718	Included	-	-	B7	
						CTV	19990718	Included	-	98000101	B7
		203D	CE/EXP	500		19990721	Included	-	-	D5	
						CTV	19990721	Included	-	98000101	D5
TBG 110 LX ME TBG 110 LX ME V	Natural gas	98A	CE/EXP	360	CTV	19990561	Included	96000007	Included	D2	
		98B	CE/EXP	360	CTV	19990562	Included	-	Included	D2	
		98C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		98D	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	Note
					Part no.	Part no.	Part no.	Part no.			
TBG 110 LX P	LPG	CE/EXP	360		19990716	Included	96000007	-	-	B7	
			360	CTV	19990716	Included	96000007	98000101	-	B7	12)
TBG 110 LX MC	LPG	CE/EXP	360		19990716	Included	96000007	-	-	B7	
			360	CTV	19990716	Included	96000007	98000101	-	B7	12)
TBG 110 LX ME	LPG	CE/EXP	360	CTV	19990561	Included	96000007	Included	-	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

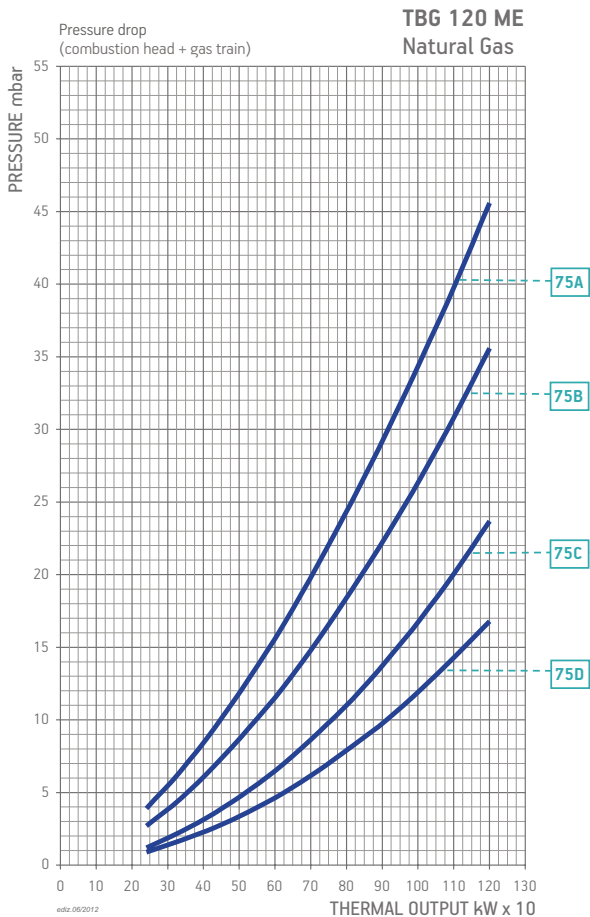
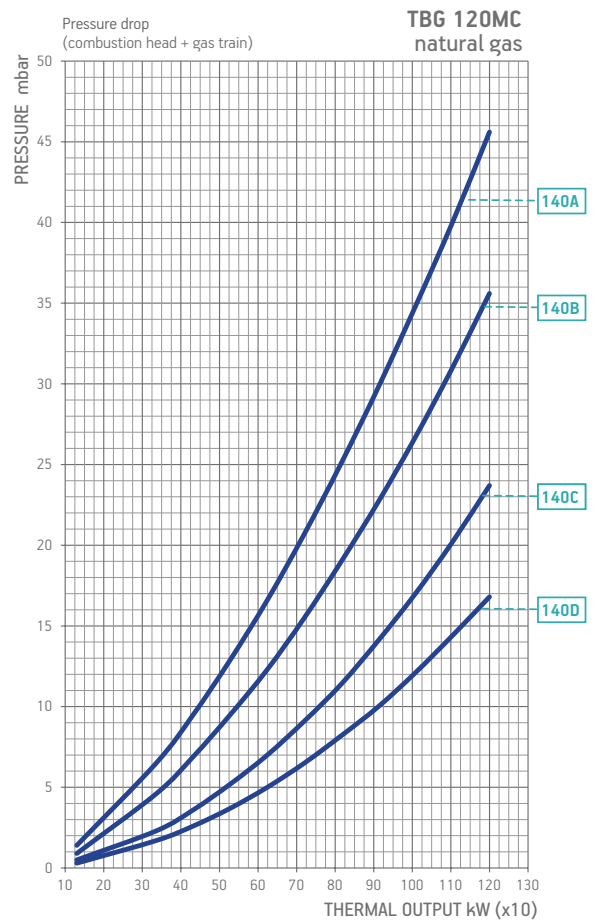
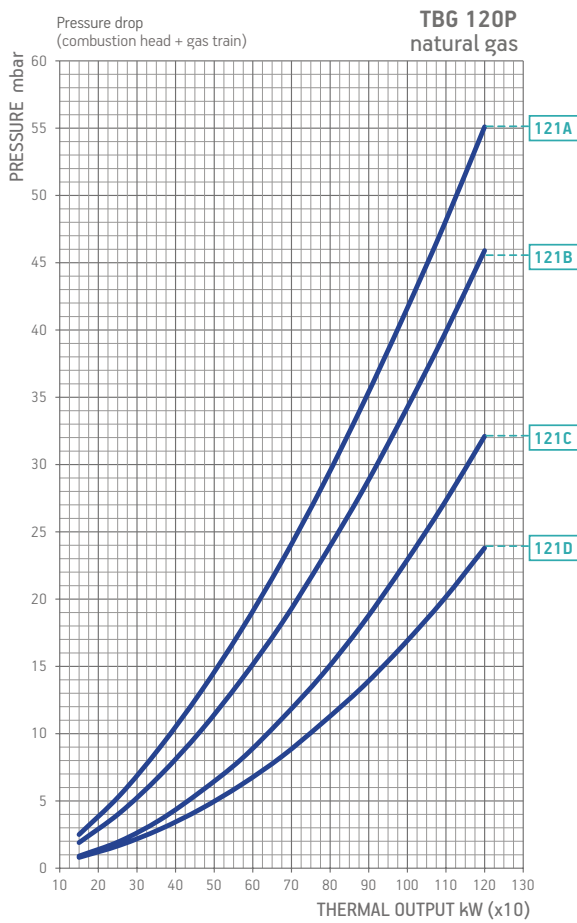
### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 120 P	Natural gas	121A	CE/EXP	360	CTV	19990713	Included	96000007	-	B7	
						19990713	Included	96000007	98000101	B7	12)
		121B	CE/EXP	360	CTV	19990715	Included	-	-	B7	
						19990715	Included	-	98000101	B7	12)
		121C	CE/EXP	500	CTV	19990717	Included	-	-	B7	
						19990720	Included	-	-	D5	
				500	CTV	19990720	Included	-	98000101	D5	12)
						19990718	Included	-	-	B7	
		121D	CE/EXP	500	CTV	19990718	Included	-	98000101	B7	12)
						19990721	Included	-	-	D5	
					CTV	19990721	Included	-	98000101	D5	12)
TBG 120 MC	Natural gas	140A	CE/EXP	360	CTV	19990713	Included	96000007	-	B7	
						19990713	Included	96000007	98000101	B7	12)
		140B	CE/EXP	360	CTV	19990715	Included	-	-	B7	
						19990715	Included	-	98000101	B7	12)
		140C	CE/EXP	500	CTV	19990717	Included	-	-	B7	
						19990717	Included	-	98000102	B7	12)
				500	CTV	19990720	Included	-	-	D5	
						19990720	Included	-	98000101	D5	12)
		140D	CE/EXP	500	CTV	19990718	Included	-	-	B7	
						19990718	Included	-	98000101	B7	12)
					CTV	19990721	Included	-	-	D5	
						19990721	Included	-	98000101	D5	12)
TBG 120 ME TBG 120 ME V	Natural gas	75A	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		75B	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		75C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
						19990725	Included	-	Included	D4	
		75D	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
						19990726	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 120 P	LPG	CE/EXP	360	CTV	19990713	Included	96000007	-	98000358	B7	
					19990713	Included	96000007	98000101	98000358	B7	12)
TBG 120 MC	LPG	CE/EXP	360	CTV	19990713	Included	96000007	-	98000358	B7	
					19990713	Included	96000007	98000101	98000358	B7	12)
TBG 120 ME/ME V	LPG	CE/EXP	360	CTV	19990558	Included	96000007	Included	98000358	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.





TBG 140 LX P

**TBG 140 LX P**

**TBG 150 P**

**Gas burner compliant with European standard EN676. Operation:**

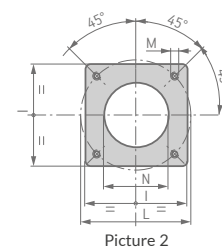
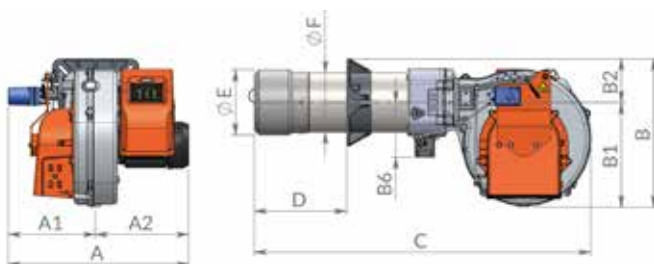
**two-stage**

**two-stage**

Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Control panel with display diagram for working mode with indication lights	•	•
Electric protection rating:	IP40	IP40

**LEGEND:**

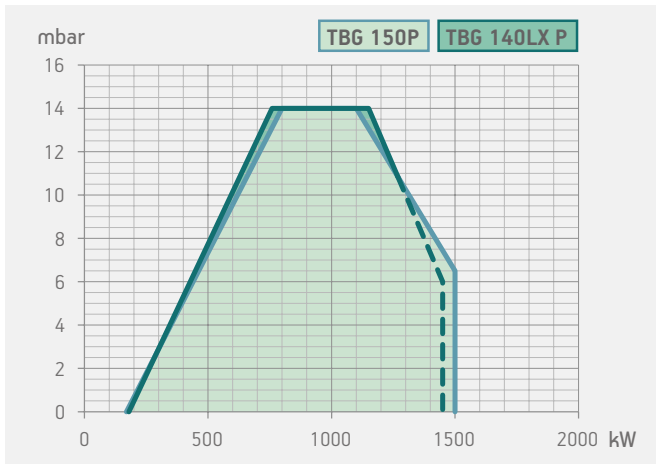
- As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 150 P	667	323	344	545	386	160	202	1244	200-450	240	219	320	280-370	M12	250	2
TBG 140LX P	667	323	344	546	386	160	202	1240	200-450	240	219	320	280-370	M12	250	2
TBG 140LX P 380/60	656	323	333	546	386	160	202	1240	200-450	240	219	320	280-370	M12	250	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 150 P	1070	800	700	89
TBG 140 LX P	1070	800	700	91
TBG 140 LX P 380/60	1070	800	700	91

Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz						
class 2	170 ÷ 1500	<b>TBG 150 P</b>	<b>18660010</b>	3N AC 50Hz 400V	2,2	3) 4)
class 3	180 ÷ 1450	<b>TBG 140 LX P</b>	<b>18670010</b>	3N AC 50Hz 400V	2,2	3) 4)
Frequency 60 Hz						
class 2	170 ÷ 1500	<b>TBG 150 P</b>	<b>18665410</b>	3N AC 60Hz 380V	2,6	3) 4)
class 3	180 ÷ 1450	<b>TBG 140 LX P</b>	<b>18675410</b>	3N AC 60Hz 380V	2,6	3) 4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 140 LX MC

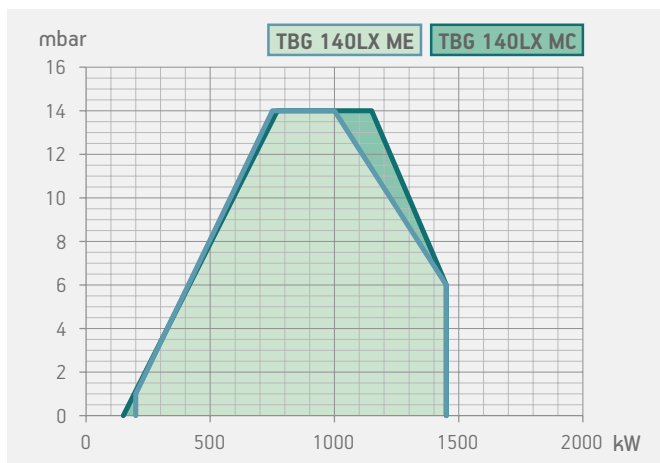


TBG 140 LX ME

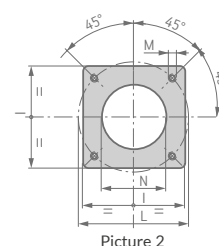
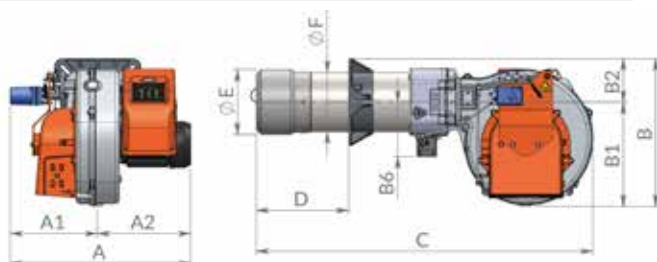
	TBG 140 LX MC	TBG 140 LX ME	TBG 140 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:9	1:7	1:7
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 140 LX MC	1070	800	700	91
TBG 140 LX ME	1070	800	700	91
TBG 140 LX ME V	1530	760	700	107



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 140 LX MC	667	323	344	546	386	161	202	1240	200-450	240	219	320	280-370	M12	250	2
TBG 140 LX MC 380/60	656	323	334	546	386	161	202	1240	200-450	240	219	320	280-370	M12	250	2
TBG 140 LX ME	610	240	370	540	380	160	200	1315	200 ÷ 450	240	219	320	280 ÷ 370	M12	255	2
TBG 140 LX ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	240	219	320	280 ÷ 370	M12	255	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	150 ÷ 1450	<b>TBG 140 LX MC</b>	<b>18690010</b>	3N AC 50Hz 400V	2,2	3) 4)
			class 3	200 ÷ 1450	<b>TBG 140 LX ME</b>	<b>17670020</b>	3N AC 50Hz 400V	2,2	3) 4)
•	○	○	class 3	200 ÷ 1450	<b>TBG 140 LX ME V</b>	<b>17670025</b>	3N AC 50Hz 400V	2,2	3) 4)
Frequency 60 Hz									
			class 3	150 ÷ 1450	<b>TBG 140 LX MC</b>	<b>18695410</b>	3N AC 60Hz 380V	2,6	3) 4)
			class 3	200 ÷ 1450	<b>TBG 140 LX ME</b>	<b>17675420</b>	3N AC 60Hz 380V	2,6	3) 4)
•	○	○	class 3	200 ÷ 1450	<b>TBG 140 LX ME V</b>	<b>on request</b>	3N AC 60Hz 380V	2,6	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 140 LX MC: modulation kit (see page 324)	
TBG 140 LX ME: modulation kit (included in ME V version)	98000059
TBG 140 LX MC/140 LX ME: modulating probe (see page 324)	
TBG 140 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 150 MC

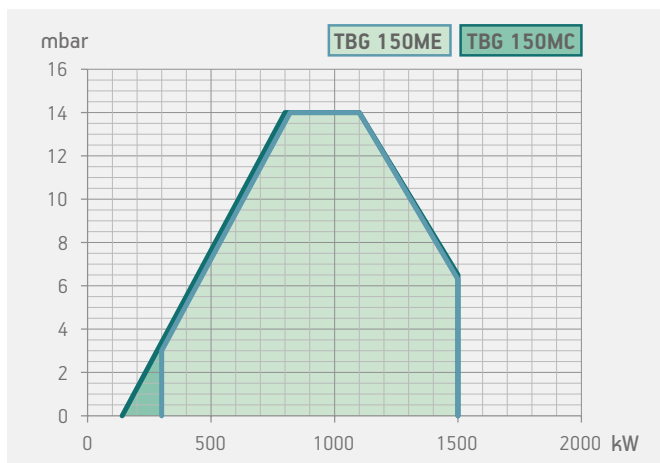


TBG 150 ME

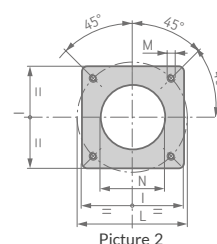
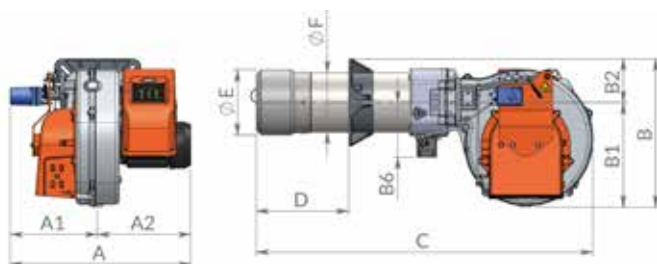
	TBG 150 MC	TBG 150 ME	TBG 150 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:10	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 150 MC	1070	800	700	89
TBG 150 ME	1070	800	700	91
TBG 150 ME V	1530	760	700	107



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 150 MC	667	323	344	546	386	161	202	1244	200-450	240	219	320	280-370	M12	250	2
TBG 150 ME	610	240	370	540	380	160	200	1315	200 ÷ 450	240	219	320	280 ÷ 370	M12	255	2
TBG 150 ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	240	219	320	280 ÷ 370	M12	255	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
					Frequency 50 Hz				
			class 2	140 ÷ 1500	<b>TBG 150 MC</b>	<b>18680010</b>	3N AC 50Hz 400V	2,2	3) 4)
			class 2	300 ÷ 1500	<b>TBG 150 ME</b>	<b>17640020</b>	3N AC 50Hz 400V	2,2	3) 4)
•	○	○	class 2	300 ÷ 1500	<b>TBG 150 ME V</b>	<b>17640025</b>	3N AC 50Hz 400V	2,2	3) 4)
					Frequency 60 Hz				
			class 2	140 ÷ 1500	<b>TBG 150 MC</b>	<b>18685410</b>	3N AC 60Hz 380V	2,6	3) 4)
			class 2	300 ÷ 1500	<b>TBG 150 ME</b>	<b>17645420</b>	3N AC 60Hz 380V	2,6	3) 4)
•	○	○	class 2	300 ÷ 1500	<b>TBG 150 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	2,6	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 150 MC: modulation kit (see page 324)	
TBG 150 ME: modulation kit (included in ME V version)	98000059
TBG 150 MC/150 ME: modulating probe (see page 324)	
TBG 150 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

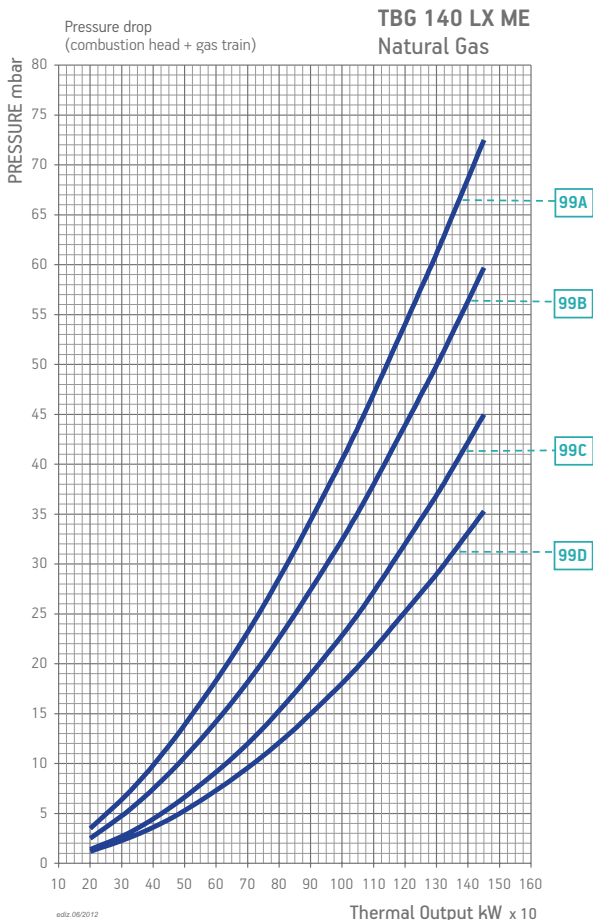
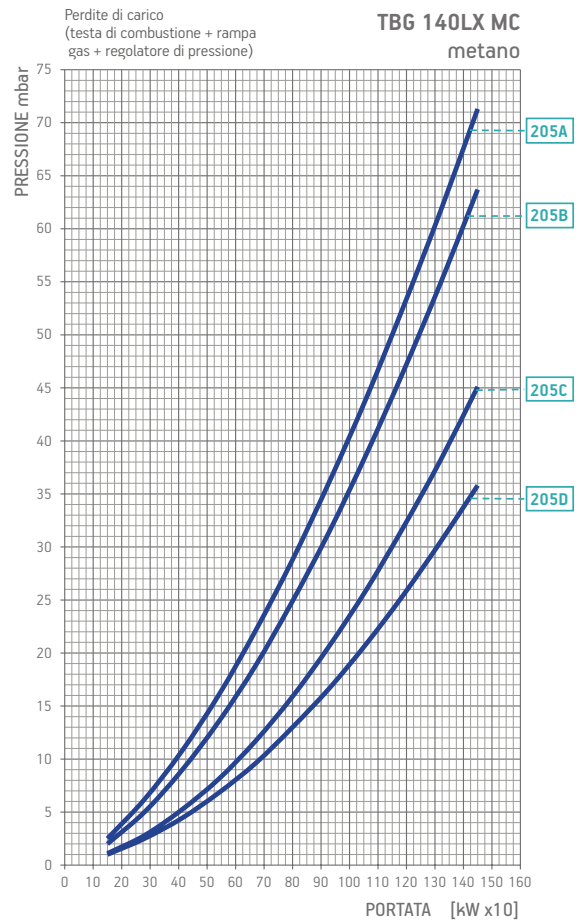
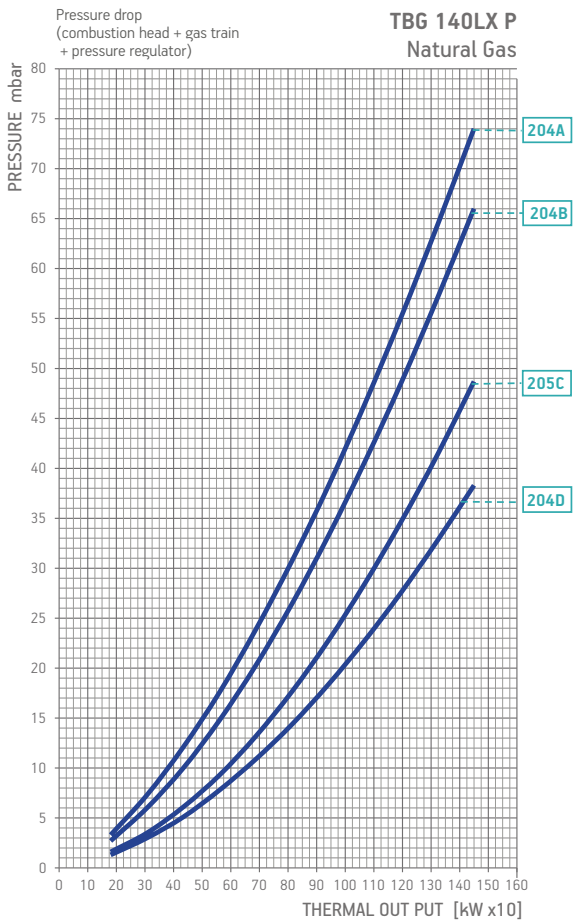
### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.

## BURNER/GAS TRAIN MATCH





### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note		
						Part no.	Part no.	Part no.	Part no.				
TBG 140 LX P	Natural gas	204A	CE	360	CTV	19990714	Included	96000007	98000101	B7	11)		
			EXP	360	CTV	19990714	Included	96000007	-	B7			
		204B	CE	360	CTV	19990716	Included	-	98000101	B7	11)		
			EXP	360	CTV	19990716	Included	-	98000101	B7			
		204C	CE	500	CTV	19990717	Included	-	98000102	B7	11)		
			CE	500	CTV	19990720	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990717	Included	-	-	B7			
			EXP	500	CTV	19990717	Included	-	98000102	B7			
		204D	CE	500	CTV	19990720	Included	-	-	D5			
			CE	500	CTV	19990720	Included	-	98000101	D5			
			EXP	500	CTV	19990718	Included	-	-	B7	11)		
			EXP	500	CTV	19990718	Included	-	98000101	B7			
		TBG 140 LX MC	Natural gas	205A	CE	360	CTV	19990714	Included	96000007	98000101	B7	11)
					EXP	360	CTV	19990714	Included	96000007	-	B7	
				205B	CE	360	CTV	19990716	Included	-	98000101	B7	11)
					EXP	360	CTV	19990716	Included	-	98000101	B7	
205C	CE			500	CTV	19990717	Included	-	98000102	B7	11)		
	CE			500	CTV	19990720	Included	-	98000101	D5	11)		
	EXP			500	CTV	19990717	Included	-	-	B7			
	EXP			500	CTV	19990717	Included	-	98000102	B7			
205D	EXP			500	CTV	19990720	Included	-	-	D5			
	CE			500	CTV	19990718	Included	-	98000101	B7	11)		
	CE			500	CTV	19990721	Included	-	98000101	D5	11)		
	EXP			500	CTV	19990718	Included	-	-	B7			
TBG 140 LX ME TBG 140 LX ME V	Natural gas			99A	CE/EXP	360	CTV	19990561	Included	96000007	Included	D2	
					CE/EXP	360	CTV	19990562	Included	-	Included	D2	
				99C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
					CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		99D	CE/EXP	500	CTV	19990525	Included	-	Included	D2			
			CE/EXP	500	CTV	19990726	Included	-	Included	D4			

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	Note
					Part no.	Part no.	Part no.	Part no.			
TBG 140 LX P	LPG	CE/EXP	360	CTV	19990714	Included	96000007	98000101	-	B7	11)
TBG 140 LX MC	LPG	CE/EXP	360	CTV	19990714	Included	96000007	98000101	-	B7	11)
TBG 140 LX ME	LPG	CE/EXP	360	CTV	19990561	Included	96000007	Included	-	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

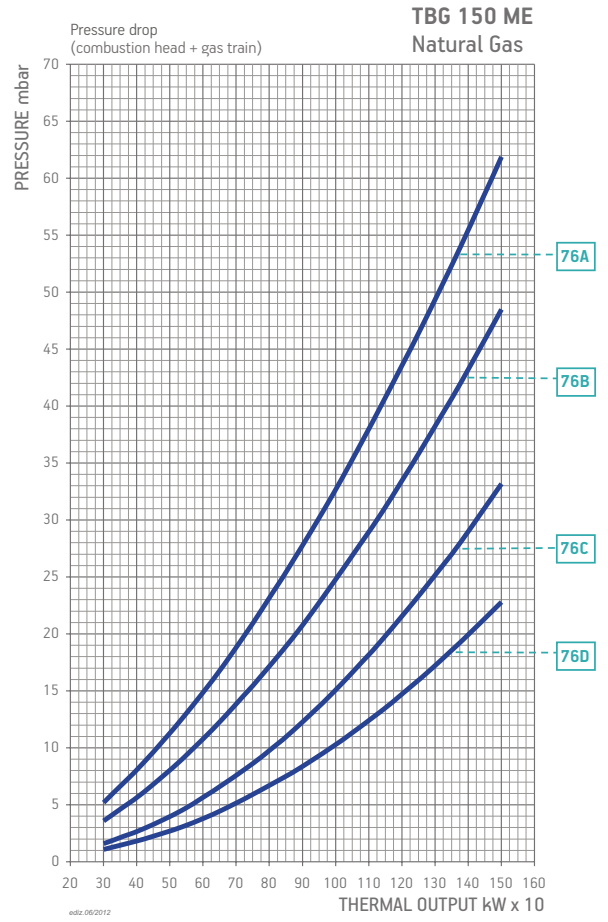
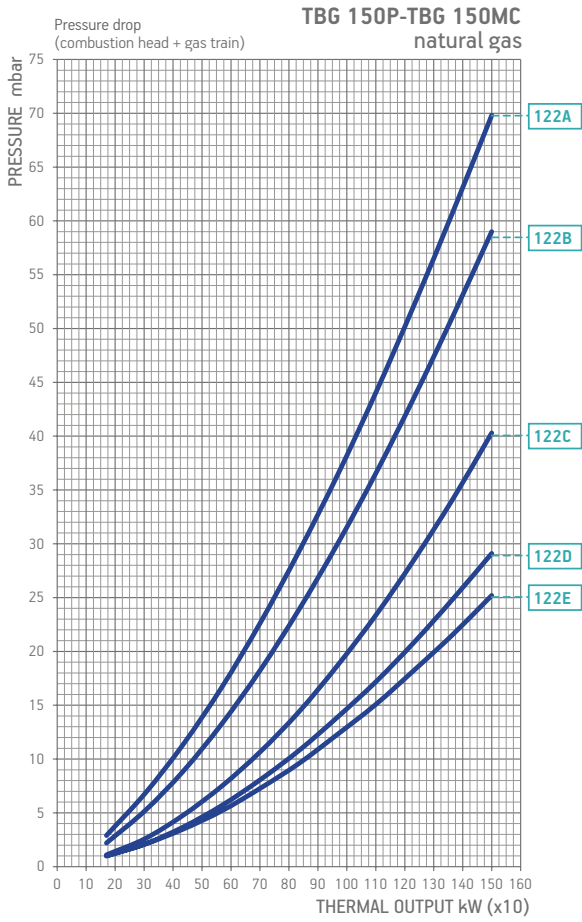
### NOTE

11 The gas train must be always completed with the valve tightness control kit to comply with the EN676 regulations.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.

## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 150 P TBG 150 MC	Natural gas	122A	CE	360	CTV	19990713	Included	96000007	98000101	B7	11)
			EXP	360	CTV	19990713	Included	96000007	-	B7	
		122B	CE	360	CTV	19990715	Included	-	98000101	B7	11)
			EXP	360	CTV	19990715	Included	-	-	B7	
			CTV	19990715	Included	-	98000101	B7			
		122C	CE	500	CTV	19990717	Included	-	98000102	B7	11)
			CTV	19990720	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990717	Included	-	-	B7	
			CTV	19990717	Included	-	98000102	B7			
			EXP	500	CTV	19990720	Included	-	-	D5	
			CTV	19990720	Included	-	98000101	D5			
		122D	CE	500	CTV	19990718	Included	-	98000101	B7	11)
			CTV	19990721	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990718	Included	-	-	B7	
			CTV	19990718	Included	-	98000101	B7			
			EXP	500	CTV	19990721	Included	-	-	D5	
			CTV	19990721	Included	-	98000101	D5			
		122E	CE	500	CTV	19990719	Included	-	98000101	B7	11)
			CTV	19990722	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990719	Included	-	-	B7	
CTV	19990719		Included	-	98000101	B7					
EXP	500		CTV	19990722	Included	-	-	D5			
CTV	19990722		Included	-	98000101	D5					
TBG 150 ME TBG 150 ME V	Natural gas	76A	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		76B	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		76C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		76D	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	Note
					Part no.	Part no.	Part no.	Part no.			
TBG 150 P TBG 150 MC	LPG	CE	360	CTV	19990713	Included	96000007	98000101	-	B7	11)
		EXP	360	CTV	19990713	Included	96000007	-	-	B7	
TBG 150 ME/ME V	LPG	CE/EXP	360	CTV	19990558	Included	96000007	Included	-	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.

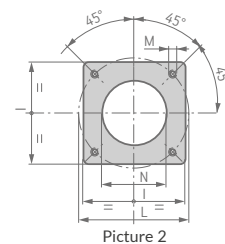
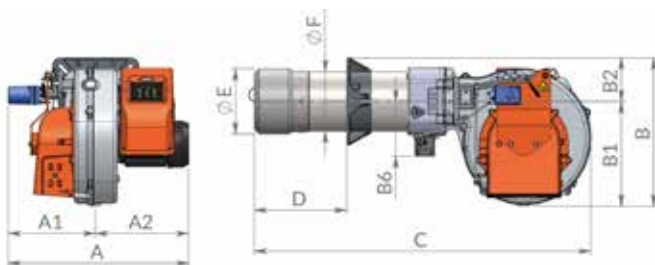


TBG 200 LX P - 210 P

	TBG 200 LX P	TBG 210 P
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>two-stage</b>	<b>two-stage</b>
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Flame detection by ionisation electrode with connector for microamperometer	•	•
Control panel with display diagram for working mode with indication lights	•	•
Electric protection rating:	IP40	IP40

**LEGEND:**

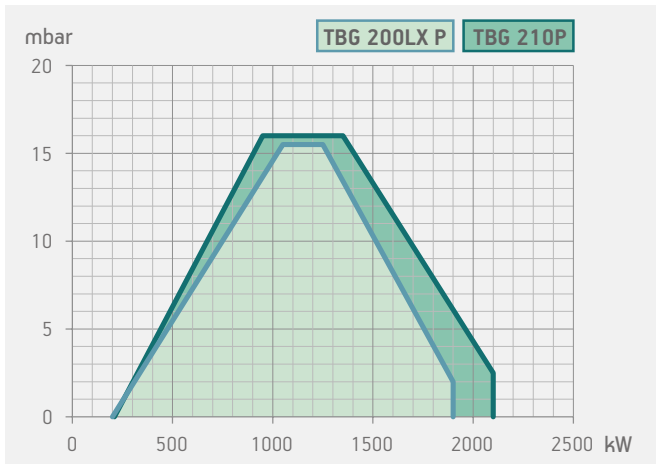
- As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 200LX P	679	323	356	546	386	160	202	1242	200-450	250	219	320	280-370	M12	255	2
TBG 200LX P 380/60	679	323	356	546	386	160	202	1242	200-450	250	219	320	280-370	M12	255	2
TBG 210 P	679	323	357	545	386	160	202	1241	200-450	250	219	320	280-370	M12	255	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 200 LX P	1070	800	700	94
TBG 200 LX P 380/60	1070	800	700	94
TBG 210 P	1070	800	700	92

	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	class 3	200 ÷ 1900	<b>TBG 200 LX P</b>	<b>18760010</b>	3N AC 50Hz 400V	3,0	3) 4)
	class 2	210 ÷ 2100	<b>TBG 210 P</b>	<b>18750010</b>	3N AC 50Hz 400V	3,0	3) 4)
Frequency 60 Hz							
	class 3	200 ÷ 1900	<b>TBG 200 LX P</b>	<b>18765410</b>	3N AC 60Hz 380V	3,5	3) 4)
	class 2	210 ÷ 2100	<b>TBG 210 P</b>	<b>18755410</b>	3N AC 60Hz 380V	3,5	3) 4)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 200 LX MC

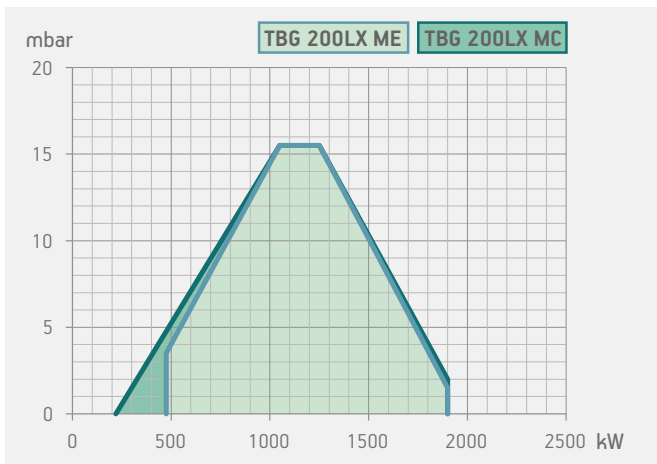


TBG 200 LX ME

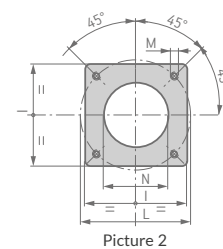
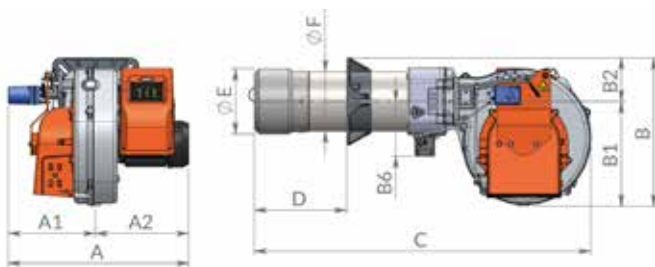
	TBG 200 LX MC	TBG 200 LX ME	TBG 200 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>			
	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:8	1:4	1:4
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 200 LX MC	1070	800	700	94
TBG 200 LX ME	1070	800	700	94
TBG 200 LX ME V	1530	760	700	110



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 200 LX MC	679	323	357	546	386	161	202	1242	200-450	250	219	320	280-370	M12	255	2
TBG 200 LX MC 380/60	679	323	357	546	386	161	202	1252	200-450	250	219	320	280-370	M12	255	2
TBG 200 LX ME	610	240	370	540	380	160	200	1315	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2
TBG 200 LX ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
					Frequency 50 Hz				
			class 3	220 ÷ 1900	<b>TBG 200 LX MC</b>	<b>18780010</b>	3N AC 50Hz 400V	3,0	3) 4)
			class 3	475 ÷ 1900	<b>TBG 200 LX ME</b>	<b>17740020</b>	3N AC 50Hz 400V	3,0	3) 4)
•	○	○	class 3	475 ÷ 1900	<b>TBG 200 LX ME V</b>	<b>17740025</b>	3N AC 50Hz 400V	3,0	3) 4)
					Frequency 60 Hz				
			class 3	220 ÷ 1900	<b>TBG 200 LX MC</b>	<b>18785410</b>	3N AC 60Hz 380V	3,5	3) 4)
			class 3	475 ÷ 1900	<b>TBG 200 LX ME</b>	<b>17745420</b>	3N AC 60Hz 380V	3,5	3) 4)
•	○	○	class 3	475 ÷ 1900	<b>TBG 200 LX ME V</b>	<b>on request</b>	3N AC 60Hz 380V	3,5	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 200 LX MC: modulation kit (see page 324)	
TBG 200 LX ME: modulation kit (included in ME V version)	98000059
TBG 200 LX MC/200 LX ME: modulating probe (see page 324)	
TBG 200 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.





TBG 210 MC

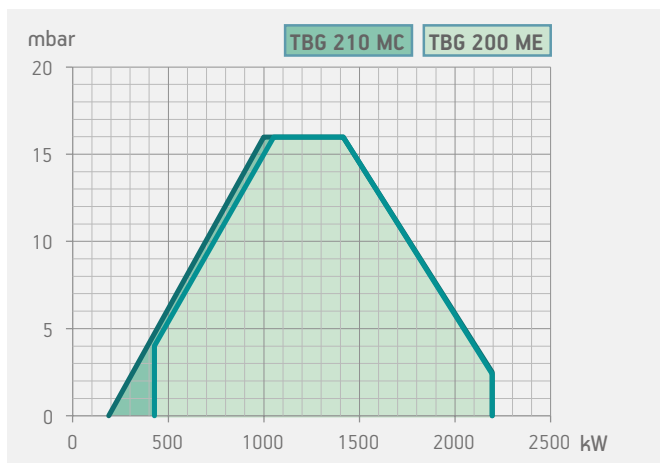


TBG 210 ME

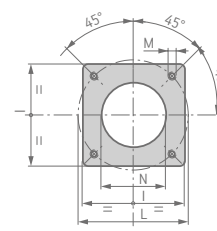
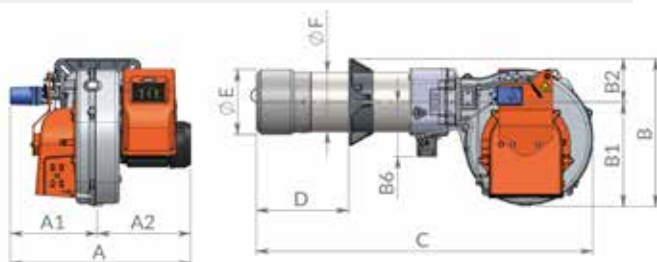
	TBG 210 MC	TBG 210 ME	TBG 210 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:12	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBG 210 MC	1070	800	700	92
TBG 210 ME	1070	800	700	94
TBG 210 ME V	1530	760	700	110



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 210 MC	679	323	357	546	386	161	202	1241	200-450	250	219	320	280-370	M12	255	2
TBG 210 ME	610	240	370	540	380	160	200	1315	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2
TBG 210 ME V	670	300	370	540	380	160	200	1315	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	170 ÷ 2100	<b>TBG 210 MC</b>	<b>18770010</b>	3N AC 50Hz 400V	3,0	3) 4)
			class 2	400 ÷ 2100	<b>TBG 210 ME</b>	<b>17710020</b>	3N AC 50Hz 400V	3,0	3) 4)
•	○	○	class 2	400 ÷ 2100	<b>TBG 210 ME V</b>	<b>17710025</b>	3N AC 50Hz 400V	3,0	3) 4)
Frequency 60 Hz									
			class 2	170 ÷ 2100	<b>TBG 210 MC</b>	<b>18775410</b>	3N AC 60Hz 380V	3,5	3) 4)
			class 2	400 ÷ 2100	<b>TBG 210 ME</b>	<b>17715420</b>	3N AC 60Hz 380V	3,5	3) 4)
•	○	○	class 2	400 ÷ 2100	<b>TBG 210 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	3,5	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 210 MC: modulation kit (see page 324)	
TBG 210 ME: modulation kit (included in ME V version)	98000059
TBG 210 MC/210 ME: modulating probe (see page 324)	
TBG 210 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

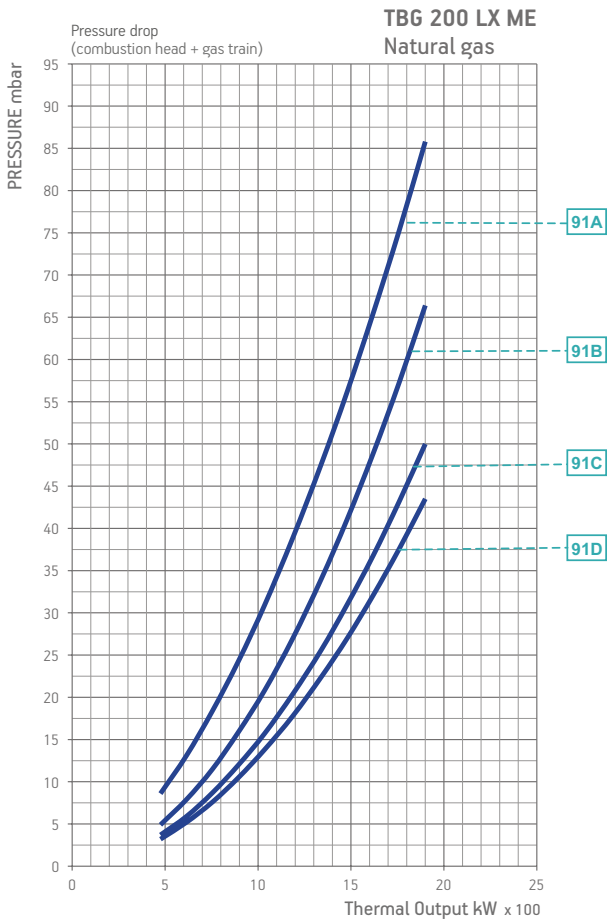
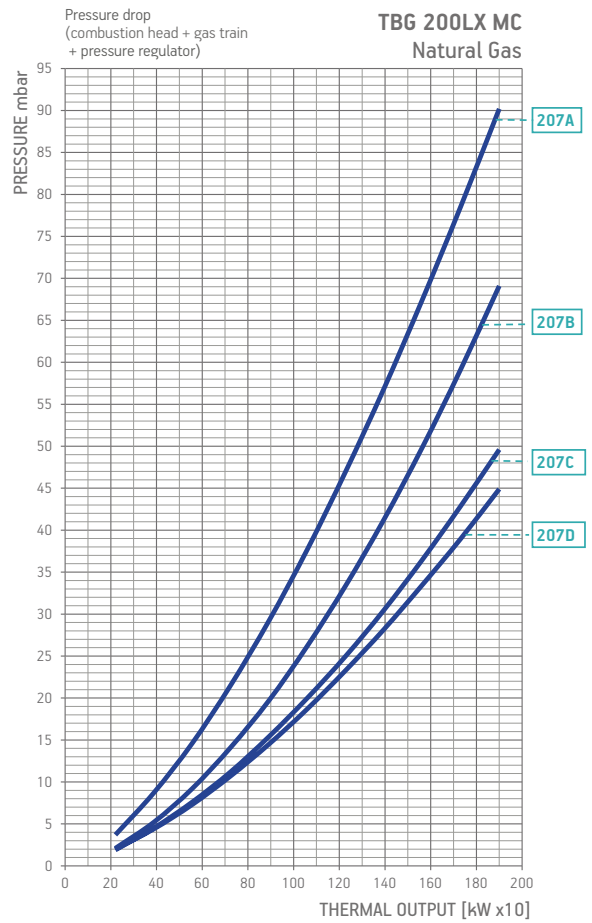
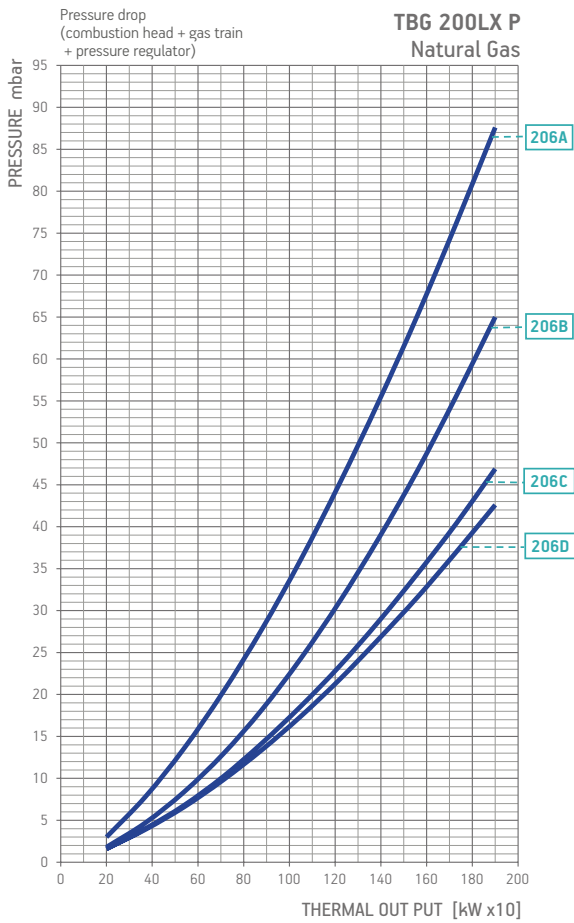
### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note		
						Part no.	Part no.	Part no.	Part no.				
TBG 200 LX P	Natural gas	206A	CE	360	CTV	19990716	Included	-	98000101	B7	11)		
			EXP	360	CTV	19990716	Included	-	-	B7			
			CE	500	CTV	19990717	Included	-	98000101	B7	11)		
			CE	500	CTV	19990720	Included	-	98000102	D5	11)		
			EXP	500	CTV	19990717	Included	-	-	B7			
			EXP	500	CTV	19990717	Included	-	98000101	B7			
		206B	EXP	500	CTV	19990720	Included	-	-	D5			
			CE	500	CTV	19990718	Included	-	98000101	B7	11)		
			CE	500	CTV	19990721	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990718	Included	-	-	B7			
			EXP	500	CTV	19990718	Included	-	98000101	B7			
			EXP	500	CTV	19990721	Included	-	-	D5			
		206D	EXP	500	CTV	19990721	Included	-	98000101	D5			
			CE	500	CTV	19990719	Included	-	98000101	B7	11)		
			CE	500	CTV	19990722	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990719	Included	-	-	B7			
			EXP	500	CTV	19990719	Included	-	98000101	B7			
			EXP	500	CTV	19990722	Included	-	-	D5			
		TBG 200 LX MC	Natural gas	207A	CE	360	CTV	19990716	Included	-	98000101	B7	11)
					EXP	360	CTV	19990716	Included	-	-	B7	
					CE	500	CTV	19990717	Included	-	98000102	B7	11)
					CE	500	CTV	19990720	Included	-	98000101	D5	11)
					EXP	500	CTV	19990717	Included	-	-	B7	
					EXP	500	CTV	19990717	Included	-	98000102	B7	
207B	EXP			500	CTV	19990720	Included	-	-	D5			
	CE			500	CTV	19990718	Included	-	98000101	B7	11)		
	CE			500	CTV	19990721	Included	-	98000101	D5	11)		
	EXP			500	CTV	19990718	Included	-	-	B7			
	EXP			500	CTV	19990718	Included	-	98000101	B7			
	EXP			500	CTV	19990721	Included	-	-	D5			
207D	EXP			500	CTV	19990721	Included	-	98000101	D5			
	CE			500	CTV	19990719	Included	-	98000101	B7	11)		
	CE			500	CTV	19990722	Included	-	98000101	D5	11)		
	EXP			500	CTV	19990719	Included	-	-	B7			
	EXP			500	CTV	19990719	Included	-	98000101	B7			
	EXP			500	CTV	19990722	Included	-	-	D5			
TBG 200 LX ME TBG 200 LX ME V	Natural gas			91A	CE/EXP	360	CTV	19990562	Included	-	Included	D2	
					CE/EXP	500	CTV	19990524	Included	-	Included	D2	
				91B	CE/EXP	500	CTV	19990725	Included	-	Included	D4	
					CE/EXP	500	CTV	19990525	Included	-	Included	D2	
				91C	CE/EXP	500	CTV	19990726	Included	-	Included	D4	
					CE/EXP	500	CTV	19990526	Included	-	Included	D2	
		91D	CE/EXP	500	CTV	19990727	Included	-	Included	D4			
			CE/EXP	500	CTV	19990727	Included	-	Included	D4			

Burner model	Gas type	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 200 LX P	LPG	CE/EXP	360	CTV	19990716	Included	-	98000101	-	B7	11)
TBG 200 LX MC	LPG	CE/EXP	360	CTV	19990716	Included	-	98000101	-	B7	11)
TBG 200 LX ME	LPG	CE/EXP	360	CTV	19990562	Included	-	Included	-	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

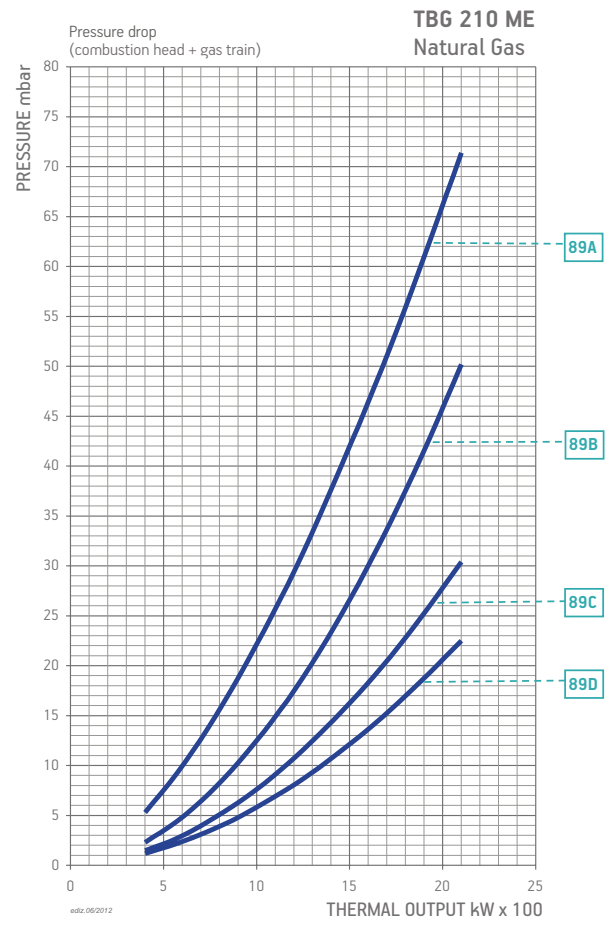
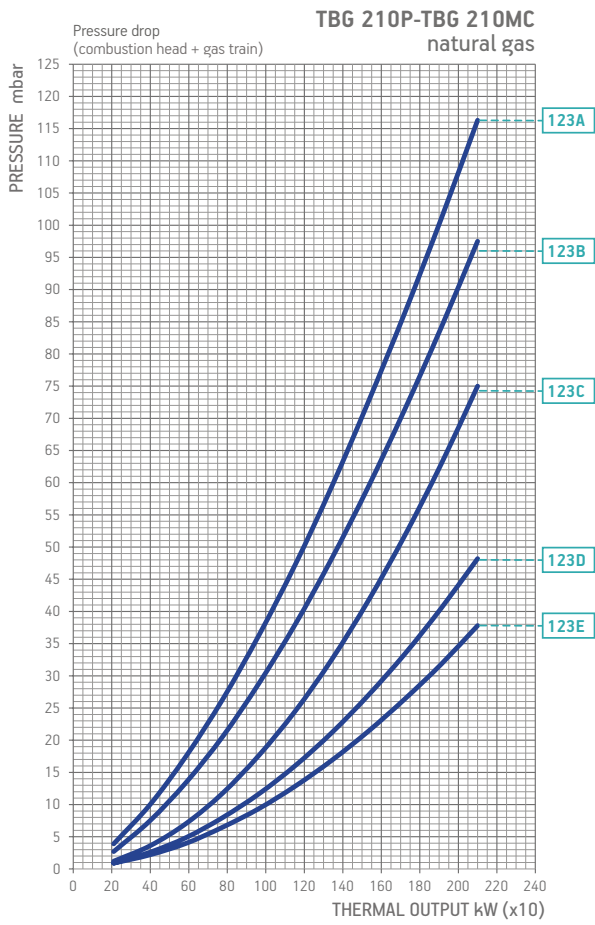
### NOTE

11 The gas train must be always completed with the valve tightness control kit to comply with the EN676 regulations.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 210 P TBG 210 MC	Natural gas	123A	CE	360	CTV	19990713	Included	96000007	98000101	B7	11)
			EXP	360	CTV	19990713	Included	96000007	-	B7	
		123B	CE	360	CTV	19990715	Included	-	98000101	B7	11)
			EXP	360	CTV	19990715	Included	-	-	B7	
				360	CTV	19990715	Included	-	98000101	B7	
		123C	CE	500	CTV	19990717	Included	-	98000102	B7	11)
				500	CTV	19990720	Included	-	98000101	D5	11)
			EXP	500	CTV	19990717	Included	-	-	B7	
				500	CTV	19990717	Included	-	98000102	B7	
			EXP	500	CTV	19990720	Included	-	-	D5	
				500	CTV	19990720	Included	-	98000101	D5	
		123D	CE	500	CTV	19990718	Included	-	98000101	B7	11)
				500	CTV	19990721	Included	-	98000101	D5	11)
			EXP	500	CTV	19990718	Included	-	-	B7	
				500	CTV	19990718	Included	-	98000101	B7	
			EXP	500	CTV	19990721	Included	-	-	D5	
				500	CTV	19990721	Included	-	98000101	D5	
		123E	CE	500	CTV	19990719	Included	-	98000101	B7	11)
				500	CTV	19990722	Included	-	98000101	D5	11)
			EXP	500	CTV	19990719	Included	-	-	B7	
500	CTV			19990719	Included	-	98000101	B7			
EXP	500		CTV	19990722	Included	-	-	D5			
	500		CTV	19990722	Included	-	98000101	D5			
TBG 210 ME TBG 210 ME V	Natural gas	89A	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
			CE/EXP	500	CTV	19990524	Included	-	Included	D2	
		89B	CE/EXP	500	CTV	19990725	Included	-	Included	D4	
			CE/EXP	500	CTV	19990525	Included	-	Included	D2	
		89C	CE/EXP	500	CTV	19990726	Included	-	Included	D4	
			CE/EXP	500	CTV	19990526	Included	-	Included	D2	
		89D	CE/EXP	500	CTV	19990727	Included	-	Included	D4	
			CE/EXP	500	CTV	19990727	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 210 P TBG 210 MC	LPG	CE	360	CTV	19990715	Included	-	98000101	98000359	B7	11)
		EXP	360	CTV	19990715	Included	-	-	98000359	B7	
TBG 210 ME/ME V	LPG	CE/EXP	360	CTV	19990715	Included	-	98000101	98000359	B7	
TBG 210 ME/ME V	LPG	CE/EXP	360	CTV	19990559	Included	-	Included	98000359	D2	
TBG 210 ME/ME V	LPG	CE/EXP	360	CTV	19990559	Included	-	Included	98000359	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

11 The gas train must be always completed with the valve tightness control kit to comply with the EN676 regulations.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



TBG 260 LX MC



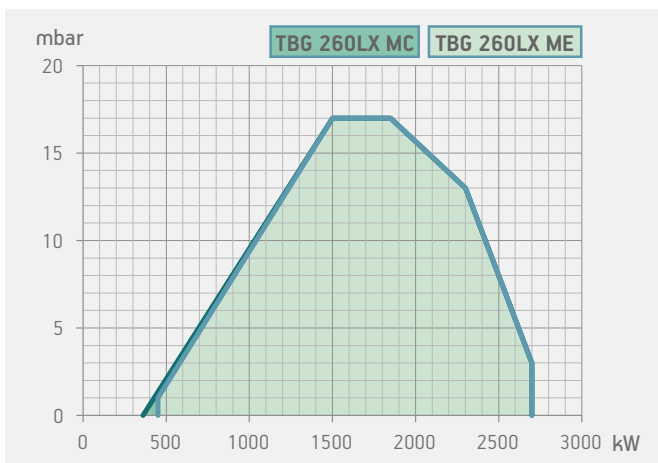
TBG 260 LX ME

**Gas burner compliant with European standard EN676. Operation:**

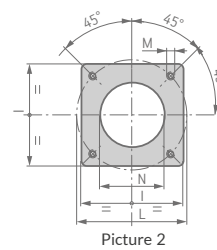
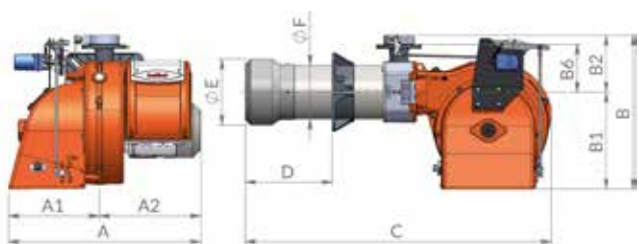
	TBG 260 LX MC	TBG 260 LX ME	TBG 260 LX ME V
	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:7	1:6	1:6
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBG 260 LX MC	1070	870	720	112
TBG 260 LX ME	1070	870	720	110
TBG 260 LX ME V	1730	1030	880	160



Dimensioni flangia e dima di foratura caldaia.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 260 LX MC	766	372	394	557	397	160	202	1235	200-450	250	219	320	280-370	M12	255	2
TBG 260 LX MC 380/60	788	372	416	557	395	160	202	1235	200-450	250	219	320	280-370	M12	255	2
TBG 260 LX ME	700	280	420	560	400	160	200	1320	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2
TBG 260 LX ME V	730	280	450	560	400	160	200	1320	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	360 ÷ 2700	<b>TBG 260 LX MC</b>	<b>18830010</b>	3N AC 50Hz 400V	5,5	4)
			class 3	450 ÷ 2700	<b>TBG 260 LX ME</b>	<b>17780010</b>	3N AC 50Hz 400V	5,5	4)
•	○	○	class 3	450 ÷ 2700	<b>TBG 260 LX ME V</b>	<b>17780015</b>	3N AC 50Hz 400V	5,5	4)
Frequency 60 Hz									
			class 3	360 ÷ 2700	<b>TBG 260 LX MC</b>	<b>18835410</b>	3N AC 60Hz 380V	7,5	4)
			class 3	450 ÷ 2700	<b>TBG 260 LX ME</b>	<b>17785410</b>	3N AC 60Hz 380V	7,5	4)
•	○	○	class 3	450 ÷ 2700	<b>TBG 260 LX ME V</b>	<b>on request</b>	3N AC 60Hz 380V	7,5	4)

○ Optional, • As standard

## MODULATING MODE

DESCRIPTION	PART NO.
TBG 260 LX MC: modulation kit (see page 324)	
TBG 260 LX ME: modulation kit	98000059
TBG 260 LX MC/260 LX ME: modulating probe (see page 324)	
TBG 260 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

## NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

## GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

## N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.





TBG 260 MC

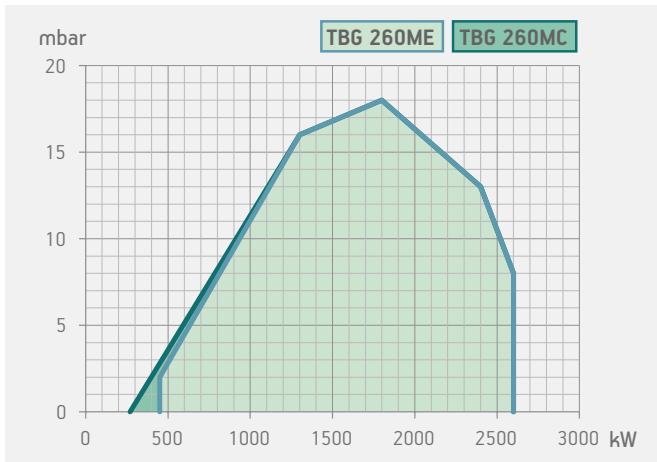


TBG 260 ME

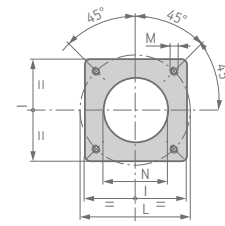
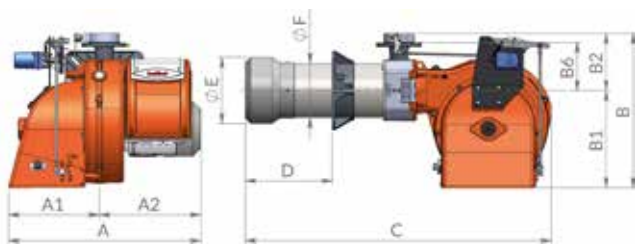
	TBG 260 MC	TBG 260 ME	TBG 260 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:9	1:5	1:5
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 260 MC	1070	870	720	125
TBG 260 ME	1070	870	720	110
TBG 260 ME V	1730	1030	880	160



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 260 MC	766	372	394	557	397	160	202	1234	200-450	250	219	320	280-370	M12	255	2
TBG 260 MC 380/60	788	372	416	557	397	160	202	1234	200-450	250	219	320	280-370	M12	255	2
TBG 260 ME	700	280	420	560	400	160	200	1320	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2
TBG 260 ME V	730	280	450	560	400	160	200	1320	200 ÷ 450	250	219	320	280 ÷ 370	M12	265	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	270 ÷ 2600	<b>TBG 260 MC</b>	<b>18820010</b>	3N AC 50Hz 400V	5,5	4)
			class 2	450 ÷ 2600	<b>TBG 260 ME</b>	<b>17770010</b>	3N AC 50Hz 400V	5,5	4)
•	○	○	class 2	450 ÷ 2600	<b>TBG 260 ME V</b>	<b>17770015</b>	3N AC 50Hz 400V	5,5	4)
Frequency 60 Hz									
			class 2	270 ÷ 2600	<b>TBG 260 MC</b>	<b>18825410</b>	3N AC 60Hz 380V	7,5	4)
			class 2	450 ÷ 2600	<b>TBG 260 ME</b>	<b>17775410</b>	3N AC 60Hz 380V	7,5	4)
•	○	○	class 2	450 ÷ 2600	<b>TBG 260 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	7,5	4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 260 MC: modulation kit (see page 324)	
TBG 260 ME: modulation kit (included in ME V version)	98000059
TBG 260 MC/260 ME: modulating probe (see page 324)	
TBG 260 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

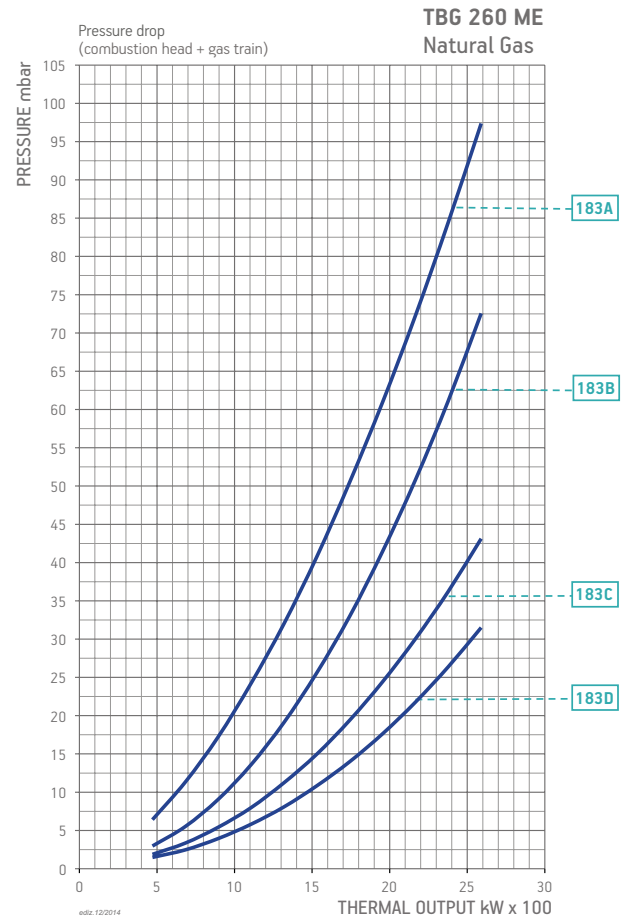
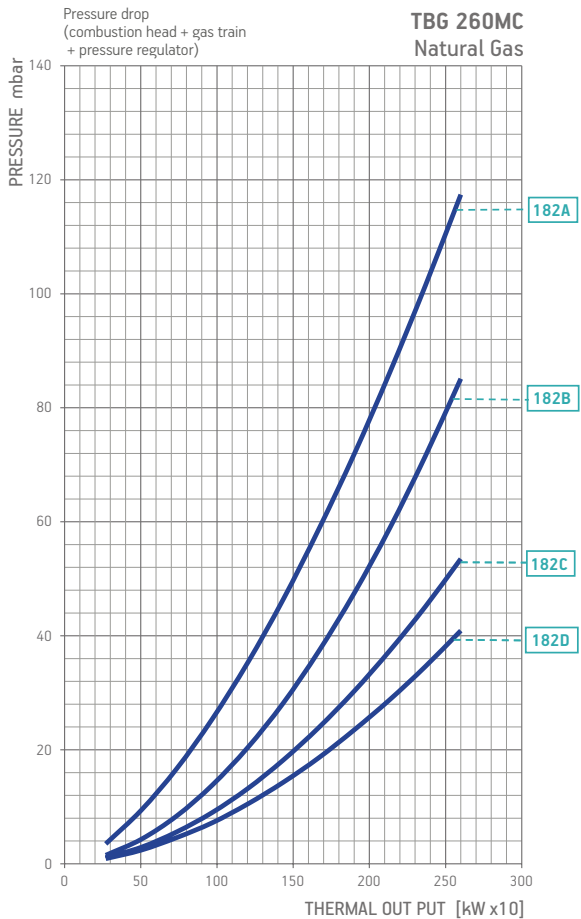
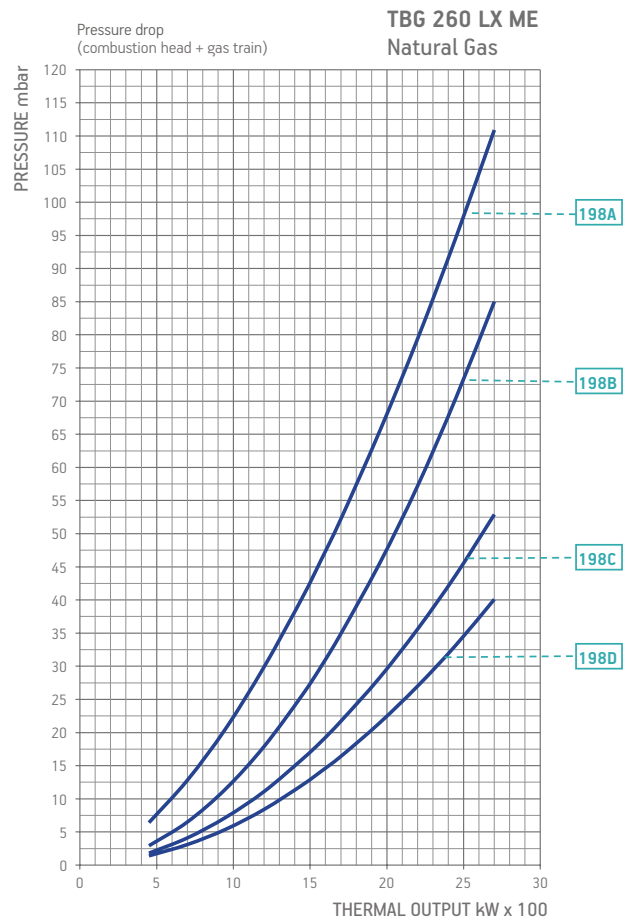
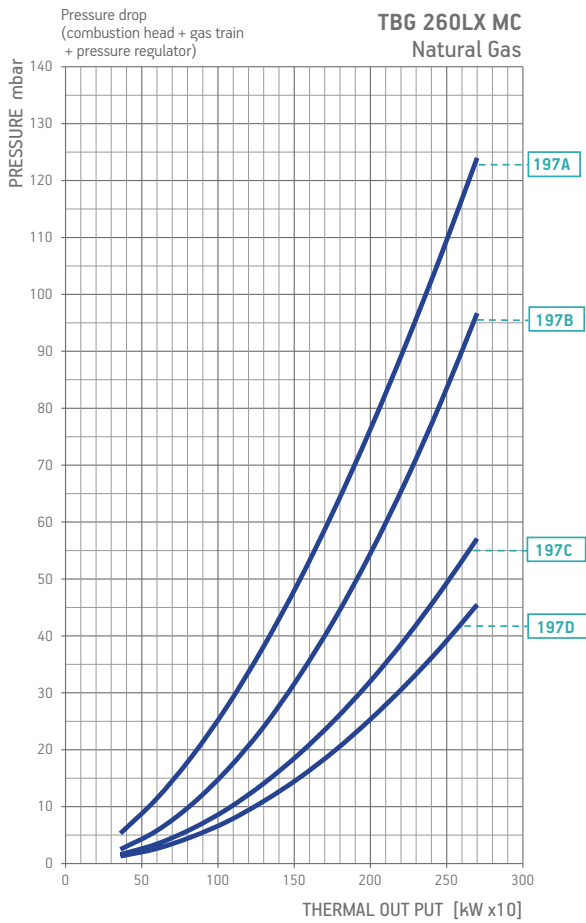
### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note		
						Part no.	Part no.	Part no.	Part no.				
TBG 260 LX MC	Natural gas	197A	CE	360	CTV	19990716	Included	-	98000101	B7	11)		
			EXP	360	CTV	19990716	Included	-	-	B7			
			CE	500	CTV	19990717	Included	-	98000102	B7	11)		
			CE	500	CTV	19990720	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990717	Included	-	-	B7			
			EXP	500	CTV	19990717	Included	-	98000102	B7			
		197B	EXP	500	CTV	19990720	Included	-	98000101	D5			
			CE	500	CTV	19990718	Included	-	98000101	B7	11)		
			CE	500	CTV	19990721	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990718	Included	-	-	B7			
			EXP	500	CTV	19990721	Included	-	-	D5			
			EXP	500	CTV	19990721	Included	-	98000101	D5			
		197C	CE	500	CTV	19990719	Included	-	98000101	B7	11)		
			CE	500	CTV	19990722	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990719	Included	-	-	B7			
			EXP	500	CTV	19990719	Included	-	98000101	B7			
			EXP	500	CTV	19990722	Included	-	-	D5			
			EXP	500	CTV	19990722	Included	-	98000101	D5			
TBG 260 LX ME TBG 260 LX ME V	Natural gas	198A	CE/EXP	360	CTV	19990562	Included	-	Included	D2			
			CE/EXP	500	CTV	19990524	Included	-	Included	D2			
		198B	CE/EXP	500	CTV	19990725	Included	-	Included	D4			
			CE/EXP	500	CTV	19990525	Included	-	Included	D2			
		198C	CE/EXP	500	CTV	19990726	Included	-	Included	D4			
			CE/EXP	500	CTV	19990526	Included	-	Included	D2			
		198D	CE/EXP	500	CTV	19990727	Included	-	Included	D4			
			CE/EXP	500	CTV	19990727	Included	-	Included	D4			
TBG 260 MC	Natural gas	182A	CE	360	CTV	19990716	Included	-	98000101	B7	11)		
			EXP	360	CTV	19990716	Included	-	-	B7			
			EXP	360	CTV	19990716	Included	-	98000101	B7			
		182B	CE	500	CTV	19990717	Included	-	98000102	B7	11)		
			CE	500	CTV	19990720	Included	-	98000101	D5	11)		
			EXP	500	CTV	19990717	Included	-	-	B7			
		182C	EXP	500	CTV	19990720	Included	-	-	D5			
			CE	500	CTV	19990718	Included	-	98000101	B7	11)		
			CE	500	CTV	19990721	Included	-	98000101	D5	11)		
		182D	EXP	500	CTV	19990718	Included	-	-	B7			
			EXP	500	CTV	19990721	Included	-	-	D5			
			EXP	500	CTV	19990721	Included	-	98000101	D5			
		TBG 260 ME TBG 260 ME V	Natural gas	183A	CE/EXP	360	CTV	19990562	Included	-	Included	D2	
					CE/EXP	500	CTV	19990524	Included	-	Included	D2	
				183B	CE/EXP	500	CTV	19990725	Included	-	Included	D4	
					CE/EXP	500	CTV	19990525	Included	-	Included	D2	
				183C	CE/EXP	500	CTV	19990726	Included	-	Included	D4	
					CE/EXP	500	CTV	19990526	Included	-	Included	D2	
183D	CE/EXP			500	CTV	19990727	Included	-	Included	D4			
	CE/EXP			500	CTV	19990727	Included	-	Included	D4			

Burner model	Gas type	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 260 LX MC	LPG	CE	500	CTV	19990717	Included	-	98000102	98000380	B7	11)
				CTV	19990720	Included	-	98000101	98000380	D5	11)
		EXP	500	CTV	19990717	Included	-	98000102	98000380	B7	
				CTV	19990717	Included	-	98000102	98000380	B7	
		EXP	500	CTV	19990720	Included	-	98000101	98000380	D5	
				CTV	19990720	Included	-	98000101	98000380	D5	
TBG 260 LX ME/ME V	LPG	CE/EXP	500	CTV	19990524	Included	-	Included	98000380	D2	
TBG 260 MC	LPG	CE	500	CTV	19990717	Included	-	98000102	98000366	B7	11)
				CTV	19990720	Included	-	98000101	98000366	B5	
		EXP	500	CTV	19990717	Included	-	98000102	98000366	B7	
				CTV	19990717	Included	-	98000102	98000366	B7	
		EXP	500	CTV	19990720	Included	-	98000101	98000366	D5	
				CTV	19990720	Included	-	98000101	98000366	D5	
TBG 260 ME/ME V	LPG	CE/EXP	500	CTV	19990524	Included	-	Included	98000366	D2	

GAS BURNERS



TBG 360 LX MC

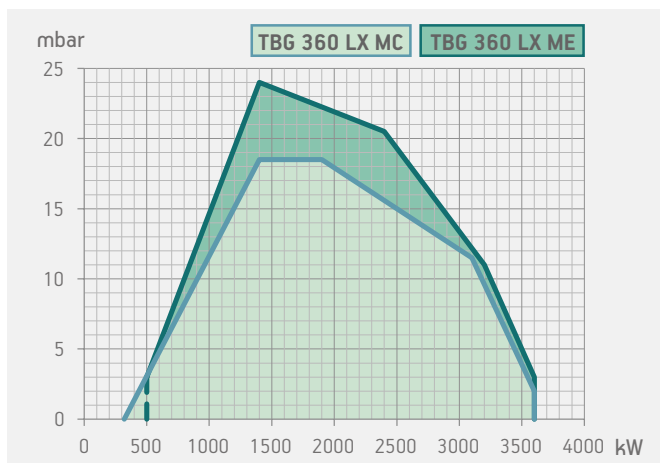


TBG 360 LX ME

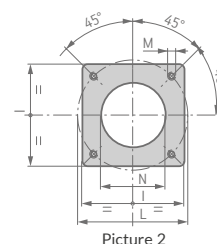
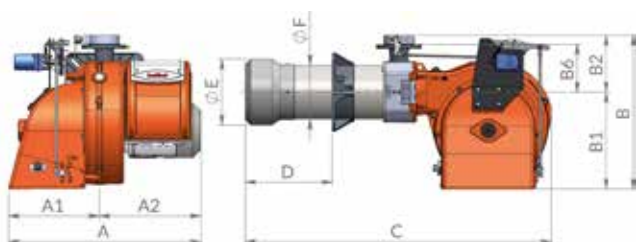
	TBG 360 LX MC	TBG 360 LX ME	TBG 360 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>			
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:11	1:7	1:7
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 360 LX MC	1070	870	810	119
TBG 360 LX ME	1070	870	810	119
TBG 360 LX ME V	1730	1030	880	136



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 360 LX MC	808	392	416	614	395	219	202	1243	200-450	270	219	320	310-370	M12	275	2
TBG 360 LX MC 380/60	883	392	491	614	395	219	202	1243	200-450	270	219	320	310-370	M12	275	2
TBG 360 LX ME	820	400	420	590	390	160	235	1350	200 ÷ 450	270	219	320	310 ÷ 370	M12	290	2
TBG 360 LX ME V	850	400	450	590	390	160	235	1350	200 ÷ 450	270	219	320	310 ÷ 370	M12	290	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	320 ÷ 3600	<b>TBG 360 LX MC</b>	<b>18880010</b>	3N AC 50Hz 400V	7,5	3) 4)
			class 3	500 ÷ 3600	<b>TBG 360 LX ME</b>	<b>17950010</b>	3N AC 50Hz 400V	7,5	3) 4)
•	○	○	class 3	500 ÷ 3600	<b>TBG 360 LX ME V</b>	<b>17950015</b>	3N AC 50Hz 400V	7,5	3) 4)
Frequency 60 Hz									
			class 3	320 ÷ 3600	<b>TBG 360 LX MC</b>	<b>18885410</b>	3N AC 60Hz 380V	9,0	3) 4)
			class 3	500 ÷ 3600	<b>TBG 360 LX ME</b>	<b>17955410</b>	3N AC 60Hz 380V	9,0	3) 4)
•	○	○	class 3	500 ÷ 3600	<b>TBG 360 LX ME V</b>	<b>on request</b>	3N AC 60Hz 380V	9,0	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 360 LX MC: modulation kit (see page 324)	
TBG 360 LX ME: modulation kit (included in ME V version)	98000059
TBG 360 LX MC/360 LX ME: modulating probe (see page 324)	
TBG 360 LX MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



TBG 360 MC

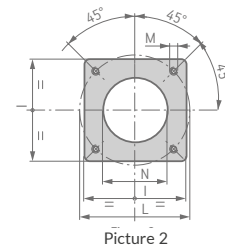
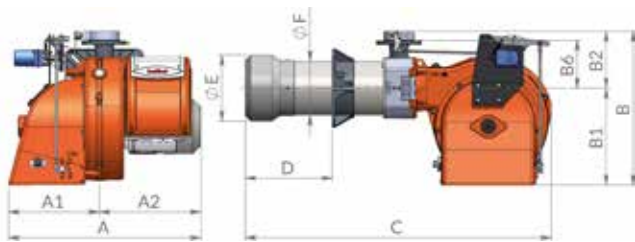
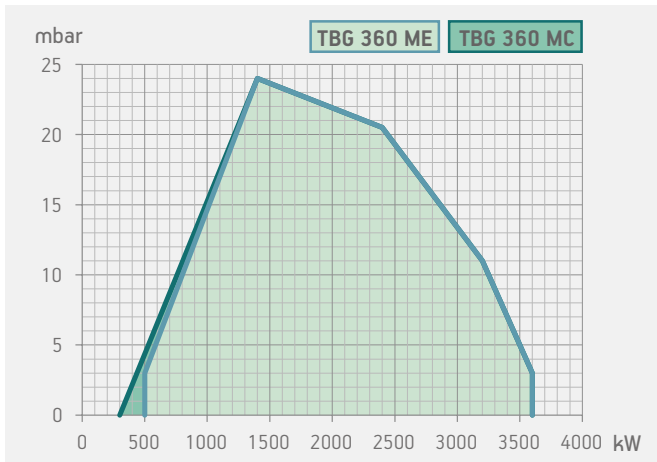


TBG 360 ME

	TBG 360 MC	TBG 360 ME	TBG 360 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:10	1:7	1:7
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●		
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter		●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights.	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP40	IP40	IP40

**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 360 MC	808	392	416	614	395	219	202	1242	200-450	270	219	320	310-370	M12	275	2
TBG 360 MC 380/60	883	392	491	614	395	219	202	1242	200-450	270	219	320	310-370	M12	275	2
TBG 360 ME	820	400	420	590	390	160	200	1350	200 ÷ 450	270	219	320	310 ÷ 370	M12	290	2
TBG 360 ME V	850	400	450	590	390	160	200	1350	200 ÷ 450	270	219	320	310 ÷ 370	M12	290	2

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	300 ÷ 3600	<b>TBG 360 MC</b>	<b>18870010</b>	3N AC 50Hz 400V	7,5	3) 4)
			class 2	500 ÷ 3600	<b>TBG 360 ME</b>	<b>17800010</b>	3N AC 50Hz 400V	7,5	3) 4)
•	○	○	class 2	500 ÷ 3600	<b>TBG 360 ME V</b>	<b>17800015</b>	3N AC 50Hz 400V	7,5	3) 4)
Frequency 60 Hz									
			class 2	300 ÷ 3600	<b>TBG 360 MC</b>	<b>18875410</b>	3N AC 60Hz 380V	9,0	3) 4)
			class 2	500 ÷ 3600	<b>TBG 360 ME</b>	<b>17805410</b>	3N AC 60Hz 380V	9,0	3) 4)
•	○	○	class 2	500 ÷ 3600	<b>TBG 360 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	9,0	3) 4)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 360 MC: modulation kit (see page 324)	
TBG 360 ME: modulation kit (included in ME V version)	98000059
TBG 360 MC/360 ME: modulating probe (see page 324)	
TBG 360 MC: converter kit 0÷10V / 4÷20 mA	98000063

### NOTE

3 Sound proof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
TBG 110 - 360 L600 long head kit <b>NEW</b>	98000456
Soundproof burner cover (see page 329)	97980053

### GAS BURNERS ACCESSORIES

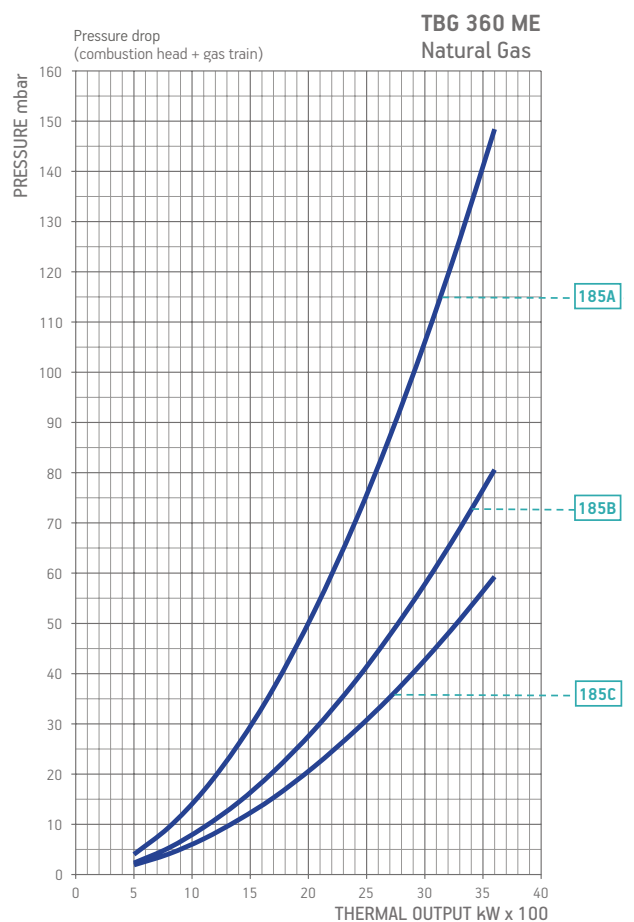
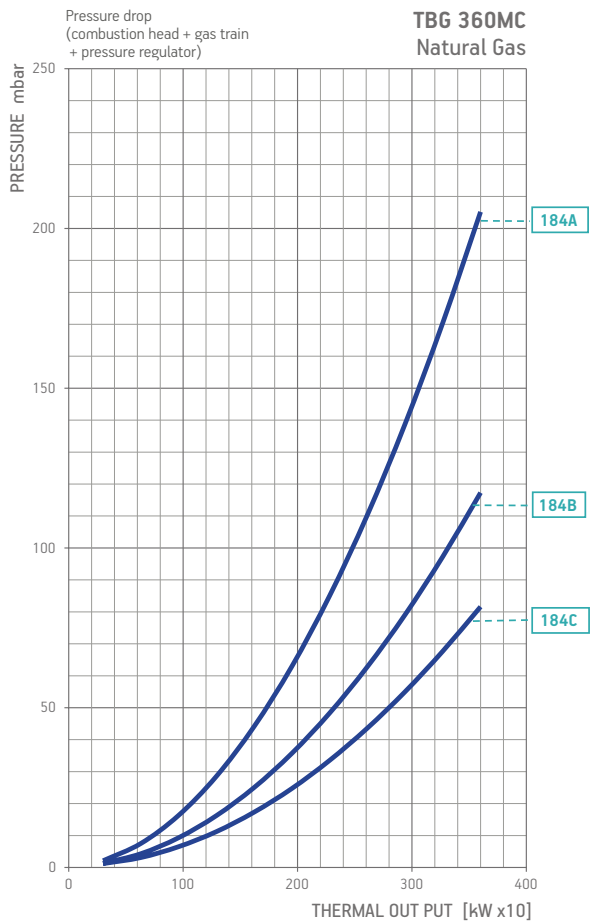
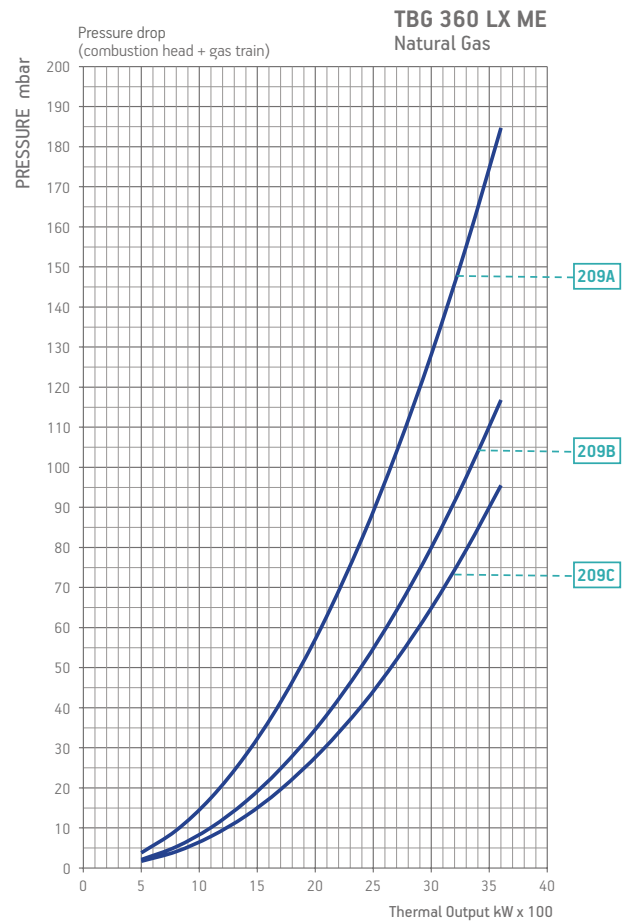
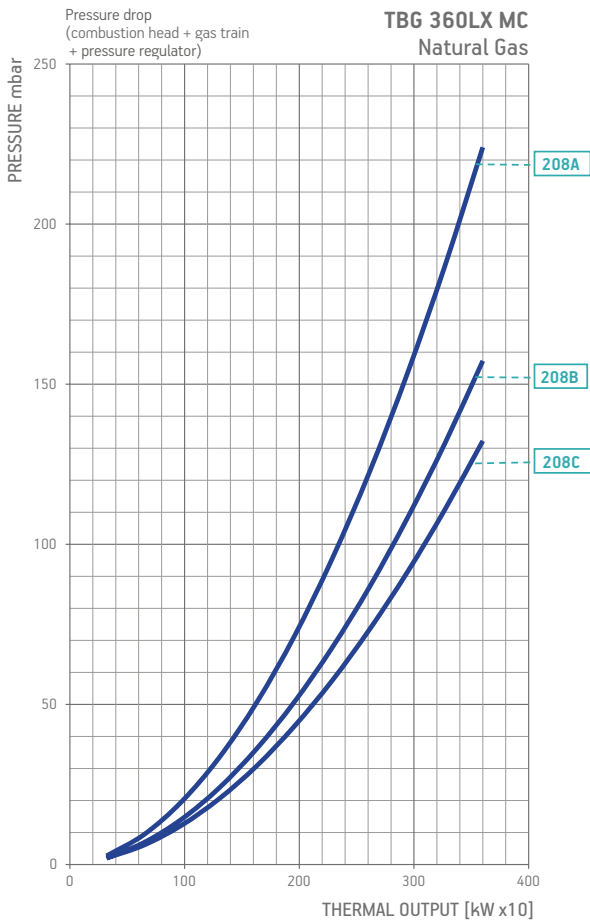
Boiler coupling kit, plug for wiring.

### N.B.

Conversion kit, for standard burner, by installer.  
 For supply of the long head version, please contact the sales department.



## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note	
						Part no.	Part no.	Part no.	Part no.			
TBG 360 LX MC	Natural gas	208A	CE	500	CTV	19990717	Included	96000035	98000102	B7	11)	
			CE	500	CTV	19990773	Included	96000035	98000101	D5	11)	
			EXP	500	CTV	19990717	Included	96000035	-	B7		
			EXP	500	CTV	19990773	Included	96000035	-	D5		
			EXP	500	CTV	19990773	Included	96000035	98000101	D5		
		CE	500	CTV	19990718	Included	-	98000101	B7	11)		
		CE	500	CTV	19990774	Included	-	98000101	D5	11)		
		EXP	500	CTV	19990718	Included	-	-	B7			
		EXP	500	CTV	19990718	Included	-	98000101	B7			
		EXP	500	CTV	19990774	Included	-	-	D5			
	EXP	500	CTV	19990774	Included	-	98000101	D5				
	208B	CE	500	CTV	19990719	Included	-	98000101	B7	11)		
		CE	500	CTV	19990775	Included	-	98000101	D5	11)		
		EXP	500	CTV	19990719	Included	-	-	B7			
		EXP	500	CTV	19990719	Included	-	98000101	B7			
		EXP	500	CTV	19990775	Included	-	-	D5			
	EXP	500	CTV	19990775	Included	-	98000101	D5				
	TBG 360 LX ME/ME V	Natural gas	209A	CE/EXP	500	CTV	19990524	Included	96000035	Included	D2	
				CE/EXP	500	CTV	19990725	Included	96000035	Included	D4	
				CE/EXP	500	CTV	19990725	Included	96000035	Included	D4	
209B			CE/EXP	500	CTV	19990577	Included	-	Included	D2		
			CE/EXP	500	CTV	19990728	Included	-	Included	D4		
209C			CE/EXP	500	CTV	19990578	Included	-	Included	D2		
			CE/EXP	500	CTV	19990729	Included	-	Included	D4		
			CE/EXP	500	CTV	19990729	Included	-	Included	D4		
TBG 360 MC	Natural gas	184A	CE	500	CTV	19990717	Included	-	98000102	B7	11)	
			CE	500	CTV	19990720	Included	-	98000101	D5	11)	
			EXP	500	CTV	19990717	Included	-	-	B7		
			EXP	500	CTV	19990717	Included	-	98000102	B7		
			EXP	500	CTV	19990720	Included	-	-	D5		
		EXP	500	CTV	19990720	Included	-	98000101	D5			
		CE	500	CTV	19990718	Included	-	98000101	B7	11)		
		CE	500	CTV	19990721	Included	-	98000101	D5	11)		
		EXP	500	CTV	19990718	Included	-	-	B7			
		EXP	500	CTV	19990718	Included	-	98000101	B7			
	EXP	500	CTV	19990721	Included	-	-	D5				
	EXP	500	CTV	19990721	Included	-	98000101	D5				
	184B	CE	500	CTV	19990719	Included	-	98000101	B7	11)		
		CE	500	CTV	19990722	Included	-	98000101	D5	11)		
		EXP	500	CTV	19990719	Included	-	-	B7			
	EXP	500	CTV	19990719	Included	-	98000101	B7				
	EXP	500	CTV	19990722	Included	-	-	D5				
	EXP	500	CTV	19990722	Included	-	98000101	D5				
TBG 360 ME/ME V	Natural gas	185A	CE/EXP	500	CTV	19990524	Included	-	Included	D2		
			CE/EXP	500	CTV	19990725	Included	-	Included	D4		
		185B	CE/EXP	500	CTV	19990525	Included	-	Included	D2		
			CE/EXP	500	CTV	19990726	Included	-	Included	D4		
		185C	CE/EXP	500	CTV	19990526	Included	-	Included	D2		
			CE/EXP	500	CTV	19990727	Included	-	Included	D4		
			CE/EXP	500	CTV	19990524	Included	-	Included	D2		
			CE/EXP	500	CTV	19990725	Included	-	Included	D4		

Burner model	Gas type	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit LPG	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBG 360 LX MC	LPG	CE	500	CTV	19990717	Included	96000035	98000102	-	B7	11)
				CTV	19990720	Included	96000035	98000101	-	D5	11)
		EXP	500	CTV	19990717	Included	96000035	98000102	-	B7	
				CTV	19990717	Included	96000035	98000102	-	B7	
		EXP	500	CTV	19990720	Included	96000035	98000101	-	D5	
				CTV	19990720	Included	96000035	98000101	-	D5	
TBG 360 LX ME/ME V	LPG	CE/EXP	500	CTV	19990524	Included	96000035	Included	-	D2	
TBG 360 MC	LPG	CE	500	CTV	19990717	Included	-	98000102	98000366	B7	11)
				CTV	19990720	Included	-	98000101	98000366	D5	11)
		EXP	500	CTV	19990717	Included	-	98000102	98000366	B7	
				CTV	19990717	Included	-	98000102	98000366	B7	
		EXP	500	CTV	19990720	Included	-	98000101	98000366	D5	
				CTV	19990720	Included	-	98000101	98000366	D5	
TBG 360 ME/ME V	LPG	CE/EXP	500	CTV	19990524	Included	-	Included	98000366	D2	

GAS BURNERS



TBG 450 LX MC

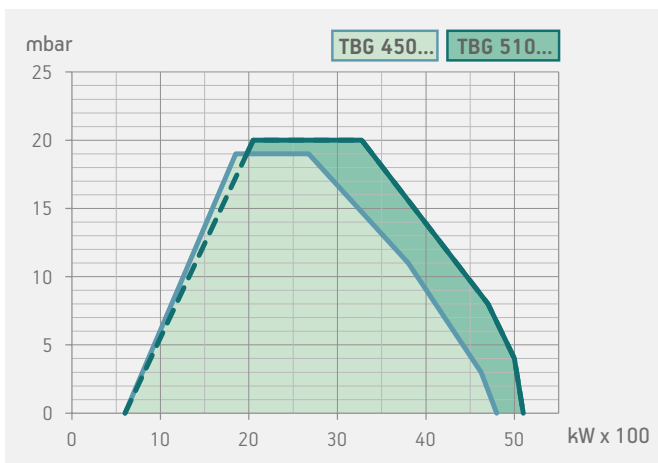


TBG 450 LX ME

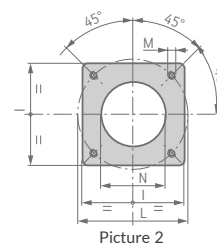
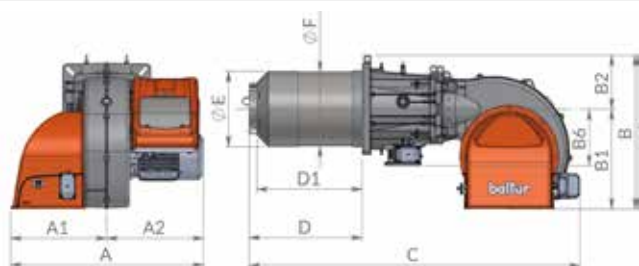
	TBG 450 LX MC	TBG 450 LX ME	TBG 450 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:8	1:8	1:8
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up/down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights.	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 450 LX MC	1500	1150	970	260
TBG 450 LX ME	1500	1150	970	260
TBG 450 LX ME V	1950	1510	1210	275



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 450 LX MC	1060	530	530	810	525	285	295	1800	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 450 LX ME	1060	530	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 450 LX ME V	1060	530	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	600 ÷ 4800	<b>TBG 450 LX MC</b>	<b>18100010</b>	3N AC 50Hz 400V	9,2	4)
			class 3	600 ÷ 4800	<b>TBG 450 LX ME</b>	<b>18110010</b>	3N AC 50Hz 400V	9,2	4)
•	○	○	class 3	600 ÷ 4800	<b>TBG 450 LX ME V</b>	<b>18110015</b>	3N AC 50Hz 400V	9,2	4) 10)
Frequency 60 Hz									
			class 3	600 ÷ 4800	<b>TBG 450 LX MC</b>	<b>18105410</b>	3N AC 60Hz 380V	11,0	4)
			class 3	600 ÷ 4800	<b>TBG 450 LX ME</b>	<b>18115410</b>	3N AC 60Hz 380V	11,0	4)
•	○	○	class 3	600 ÷ 4800	<b>TBG 450 LX ME V</b>	<b>18115415</b>	3N AC 60Hz 380V	11,0	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 450 LX MC: modulation kit (see page 324)	98000055
TBG 450 LX ME: modulation kit (included in ME V version)	98000059
TBG 450 LX MC/450 LX ME: modulating probe (see page 324)	

### NOTE

- 4 Equipped with automatic air closure device.
  - 10 Inverter supplied separately, not included on the machine.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m³ = 8550 kcal/m³,  
 LPG: Hi = 92 MJ/m³ = 22000 kcal/m³.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Reversing nozzle kit (19)	98000437
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.



TBG 510 LX MC

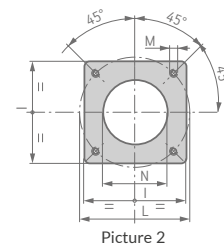
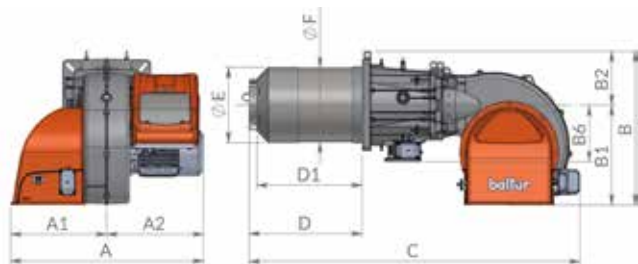
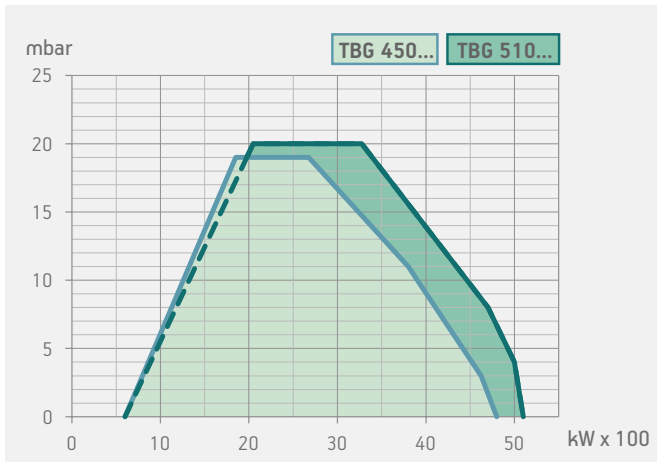


TBG 510 LX ME

	TBG 510 LX MC	TBG 510 LX ME	TBG 510 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:8	1:8	1:8
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up/down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights.	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 510 LX MC	1060	530	530	810	525	285	295	1800	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 510 LX ME	1060	530	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 510 LX ME V	1060	530	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	600 ÷ 5100	<b>TBG 510 LX MC</b>	<b>18130010</b>	3N AC 50Hz 400V	11	4)
			class 3	600 ÷ 5100	<b>TBG 510 LX ME</b>	<b>18140010</b>	3N AC 50Hz 400V	11	4)
•	○	○	class 3	600 ÷ 5100	<b>TBG 510 LX ME V</b>	<b>18140015</b>	3N AC 50Hz 400V	11	4) 10)
Frequency 60 Hz									
			class 3	600 ÷ 5100	<b>TBG 510 LX MC</b>	<b>18135410</b>	3N AC 60Hz 380V	13	4)
			class 3	600 ÷ 5100	<b>TBG 510 LX ME</b>	<b>18145410</b>	3N AC 60Hz 380V	13	4)
•	○	○	class 3	600 ÷ 5100	<b>TBG 510 LX ME V</b>	<b>18145415</b>	3N AC 60Hz 380V	13	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 510 LX MC: modulation kit (see page 324)	98000055
TBG 510 LX ME: modulation kit (included in ME V version)	98000059
TBG 510 LX MC/510 LX ME: modulating probe (see page 324)	

### NOTE

- 4 Equipped with automatic air closure device.
  - 10 Inverter supplied separately, not included on the machine.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Reversing nozzle kit 19)	98000437
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.



TBG 650 LX MC

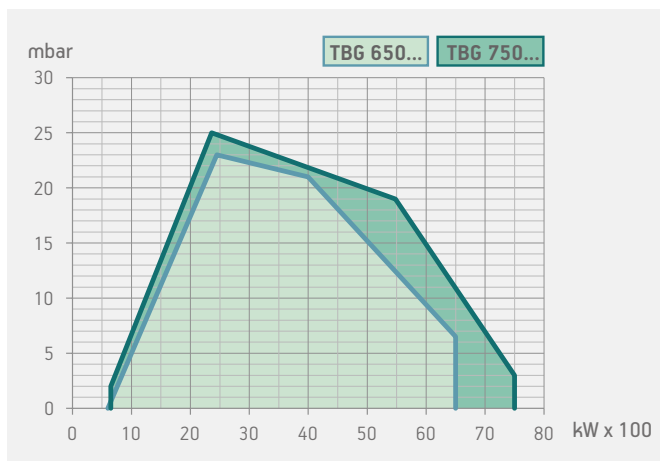


TBG 650 LX ME

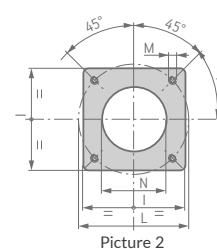
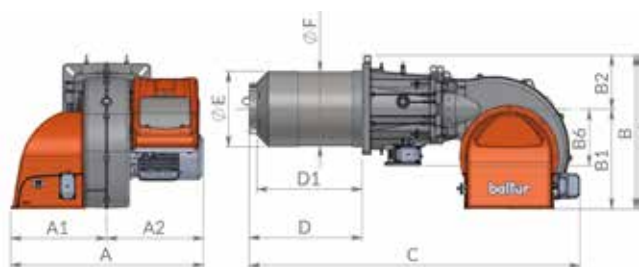
	TBG 650 LX MC	TBG 650 LX ME	TBG 650 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:11	1:11	1:11
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up/down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights.	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 650 LX MC	1500	1320	970	275
TBG 650 LX ME	1500	1320	970	275
TBG 650 LX ME V	1950	1510	1210	295



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 650 LX MC	1110	580	530	810	525	285	295	1800	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 650 LX ME	1110	580	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 650 LX ME V	1110	580	530	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	600 ÷ 6500	<b>TBG 650 LX MC</b>	<b>18160010</b>	3N AC 50Hz 400V	15	4)
			class 3	600 ÷ 6500	<b>TBG 650 LX ME</b>	<b>18170010</b>	3N AC 50Hz 400V	15	4)
•	○	○	class 3	600 ÷ 6500	<b>TBG 650 LX ME V</b>	<b>18170015</b>	3N AC 50Hz 400V	15	4) 10)
Frequency 60 Hz									
			class 3	600 ÷ 6500	<b>TBG 650 LX MC</b>	<b>18165410</b>	3N AC 60Hz 380V	15	4)
			class 3	600 ÷ 6500	<b>TBG 650 LX ME</b>	<b>18175410</b>	3N AC 60Hz 380V	15	4)
•	○	○	class 3	600 ÷ 6500	<b>TBG 650 LX ME V</b>	<b>18175415</b>	3N AC 60Hz 380V	15	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 650 LX MC: modulation kit (see page 324)	98000055
TBG 650 LX ME: modulation kit (included in ME V version)	98000059
TBG 650 LX MC/650 LX ME: modulating probe (see page 324)	

### NOTE

- 4 Equipped with automatic air closure device.
  - 10 Inverter supplied separately, not included on the machine.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Reversing nozzle kit 19)	98000436
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.





TBG 750 LX MC

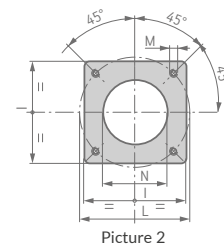
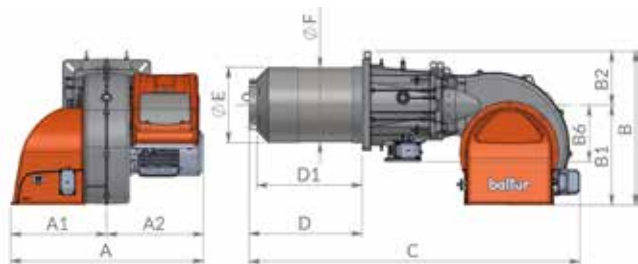
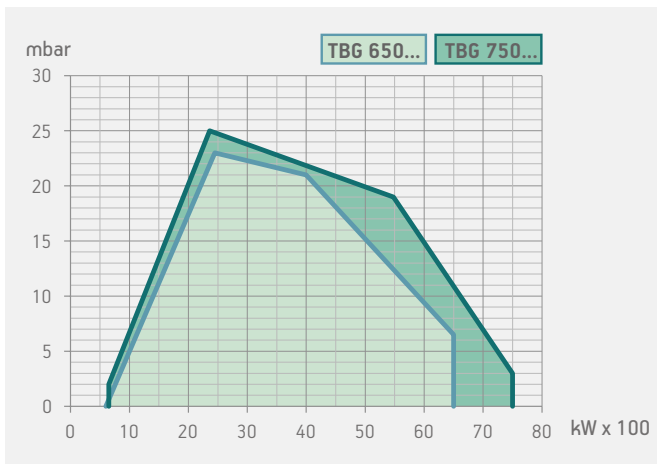


TBG 750 LX ME

	TBG 750 LX MC	TBG 750 LX ME	TBG 750 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:11	1:11	1:11
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up/down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 750 LX MC	1180	530	650	810	525	285	295	1800	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 750 LX ME	1180	530	650	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2
TBG 750 LX ME V	1180	530	650	810	525	285	295	1850	650	547 ÷ 597	397	410	480	520 ÷ 600	M20	430	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	650 ÷ 7500	<b>TBG 750 LX MC</b>	<b>18190010</b>	3N AC 50Hz 400V	18,5	4)
			class 3	650 ÷ 7500	<b>TBG 750 LX ME</b>	<b>18200010</b>	3N AC 50Hz 400V	18,5	4)
•	○	○	class 3	650 ÷ 7500	<b>TBG 750 LX ME V</b>	<b>18200015</b>	3N AC 50Hz 400V	18,5	4) 10)
Frequency 60 Hz									
			class 3	650 ÷ 7500	<b>TBG 750 LX MC</b>	<b>18195410</b>	3N AC 60Hz 380V	18,5	4)
			class 3	650 ÷ 7500	<b>TBG 750 LX ME</b>	<b>18205410</b>	3N AC 60Hz 380V	18,5	4)
•	○	○	class 3	650 ÷ 7500	<b>TBG 750 LX ME V</b>	<b>18205415</b>	3N AC 60Hz 380V	18,5	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 750 LX MC: modulation kit (see page 324)	98000055
TBG 750 LX ME: modulation kit (included in ME V version)	98000059
TBG 750 LX MC/750 LX ME: modulating probe (see page 324)	

### NOTE

- 4 Equipped with automatic air closure device.
  - 10 Inverter supplied separately, not included on the machine.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

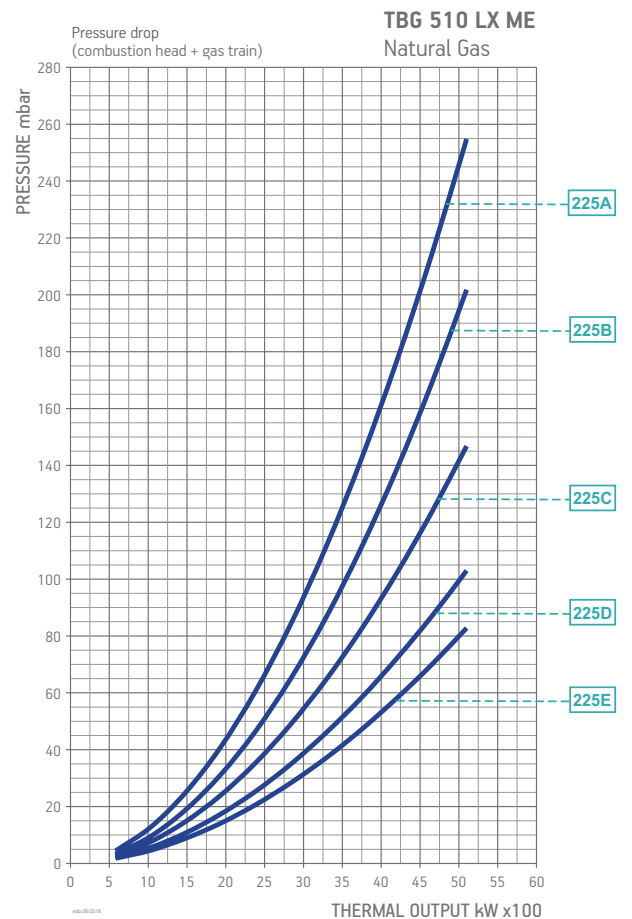
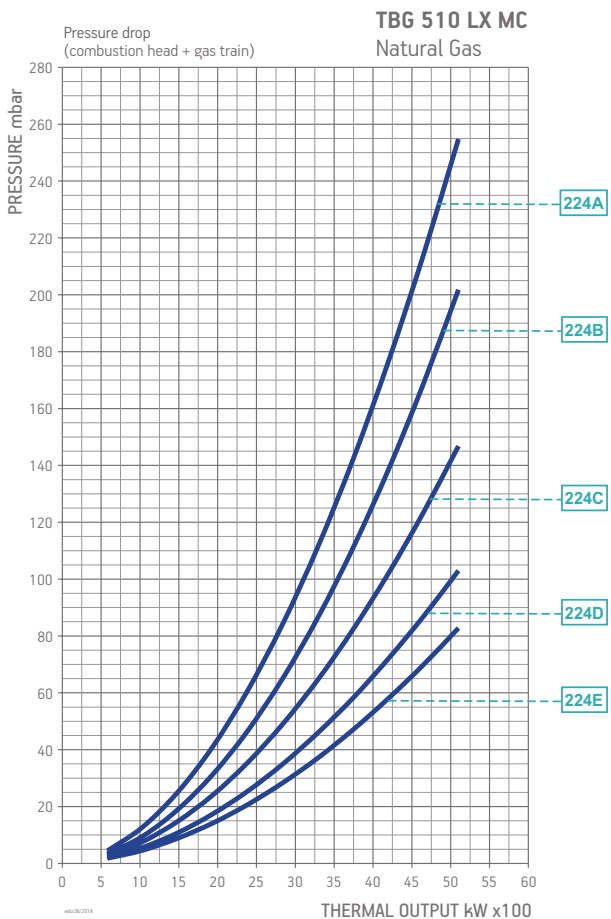
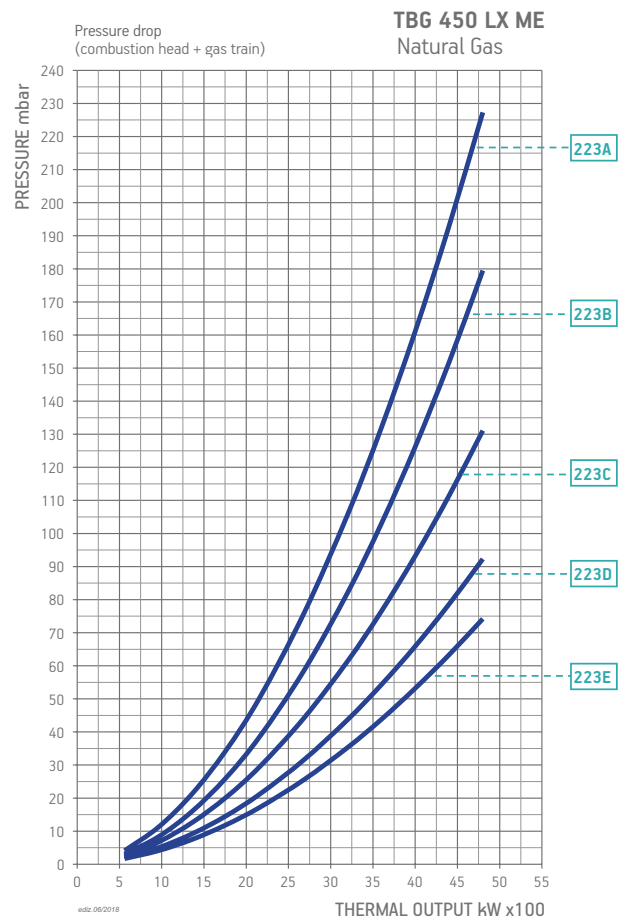
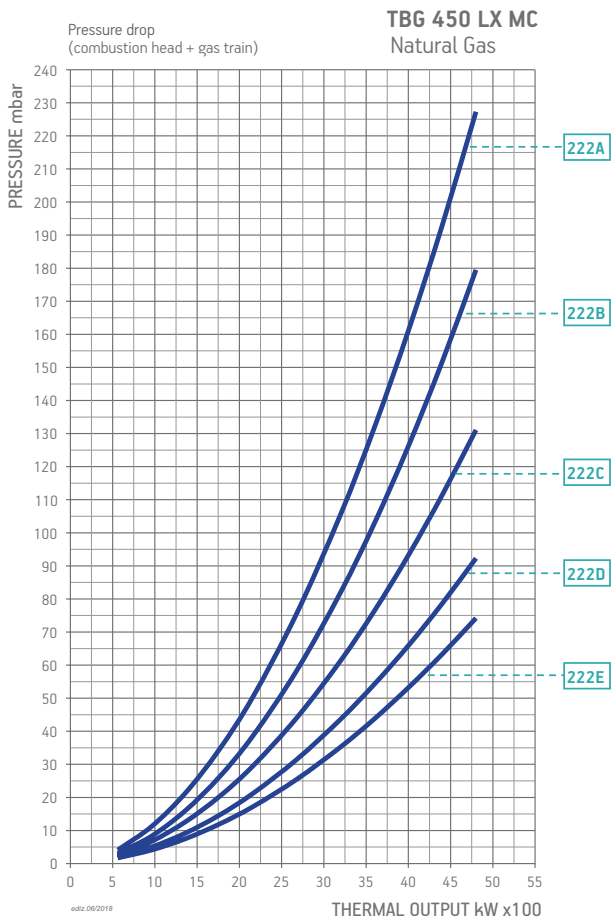
### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Reversing nozzle kit 19)	98000436
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note		
						Part no.	Part no.	Part no.	Part no.				
TBG 450 LX MC	Natural gas	222A	CE/EXP	500	CTV	19990599	Included	-	Included	D8			
			CE/EXP	500	CTV	19990758	Included	-	Included	D8			
		222B	CE/EXP	500	CTV	19990665	Included	-	Included	D8			
			CE/EXP	500	CTV	19990600	Included	-	Included	D8			
		222C	CE/EXP	500	CTV	19990759	Included	-	Included	D8			
			CE/EXP	500	CTV	19990601	Included	-	Included	D8			
		222D	CE/EXP	500	CTV	19990760	Included	-	Included	D8			
			CE/EXP	500	CTV	19990760	Included	-	Included	D8			
		222E	CE/EXP	500	CTV	19990602	Included	-	Included	D8			
			CE/EXP	500	CTV	19990761	Included	-	Included	D8			
		TBG 450 LX ME TBG 450 LX ME V	Natural gas	223A	CE/EXP	500	CTV	19990541	Included	-	Included	D4	
					CE/EXP	500	CTV	19990679	Included	-	Included	D4	
223B	CE/EXP			500	CTV	19990666	Included	-	Included	D4			
	CE/EXP			500	CTV	19990542	Included	-	Included	D4			
223C	CE/EXP			500	CTV	19990680	Included	-	Included	D4			
	CE/EXP			500	CTV	19990543	Included	-	Included	D4			
223D	CE/EXP			500	CTV	19990681	Included	-	Included	D4			
	CE/EXP			500	CTV	19990544	Included	-	Included	D4			
223E	CE/EXP			500	CTV	19990682	Included	-	Included	D4			
	CE/EXP			500	CTV	19990682	Included	-	Included	D4			
TBG 510 LX MC	Natural gas			224A	CE/EXP	500	CTV	19990599	Included	-	Included	D8	
					CE/EXP	500	CTV	19990758	Included	-	Included	D8	
		224B	CE/EXP	500	CTV	19990665	Included	-	Included	D8			
			CE/EXP	500	CTV	19990600	Included	-	Included	D8			
		224C	CE/EXP	500	CTV	19990759	Included	-	Included	D8			
			CE/EXP	500	CTV	19990601	Included	-	Included	D8			
		224D	CE/EXP	500	CTV	19990760	Included	-	Included	D8			
			CE/EXP	500	CTV	19990760	Included	-	Included	D8			
		224E	CE/EXP	500	CTV	19990602	Included	-	Included	D8			
			CE/EXP	500	CTV	19990761	Included	-	Included	D8			
		TBG 510 LX ME TBG 510 LX ME V	Natural gas	225A	CE/EXP	500	CTV	19990541	Included	-	Included	D4	
					CE/EXP	500	CTV	19990679	Included	-	Included	D4	
225B	CE/EXP			500	CTV	19990666	Included	-	Included	D4			
	CE/EXP			500	CTV	19990542	Included	-	Included	D4			
225C	CE/EXP			500	CTV	19990680	Included	-	Included	D4			
	CE/EXP			500	CTV	19990543	Included	-	Included	D4			
225D	CE/EXP			500	CTV	19990681	Included	-	Included	D4			
	CE/EXP			500	CTV	19990681	Included	-	Included	D4			
225E	CE/EXP			500	CTV	19990544	Included	-	Included	D4			
	CE/EXP			500	CTV	19990682	Included	-	Included	D4			
225A	CE/EXP			500	CTV	19990679	Included	-	Included	D4			
	CE/EXP			500	CTV	19990680	Included	-	Included	D4			
225D	CE/EXP	500	CTV	19990681	Included	-	Included	D4					
	CE/EXP	500	CTV	19990681	Included	-	Included	D4					
225E	CE/EXP	500	CTV	19990682	Included	-	Included	D4					
	CE/EXP	500	CTV	19990682	Included	-	Included	D4					

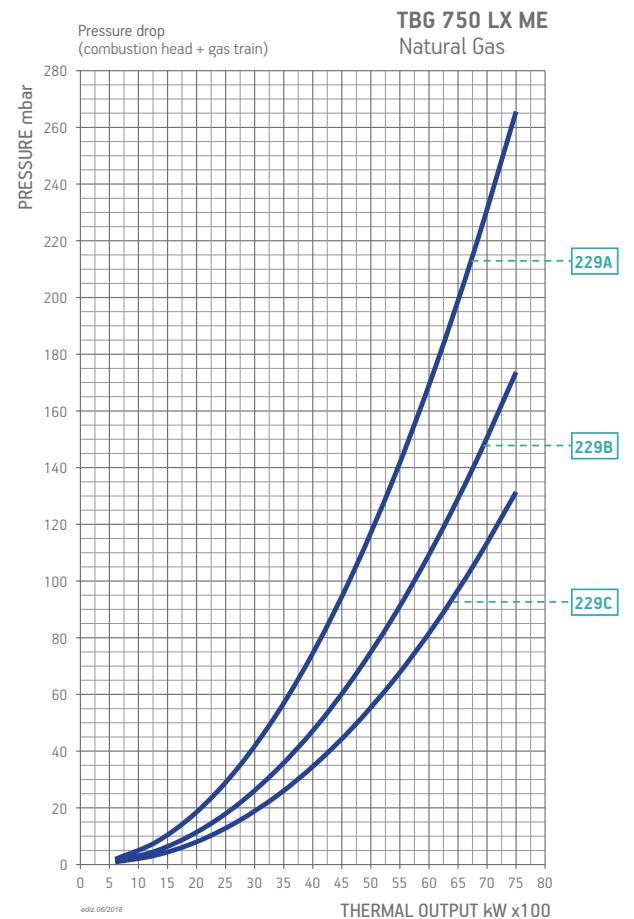
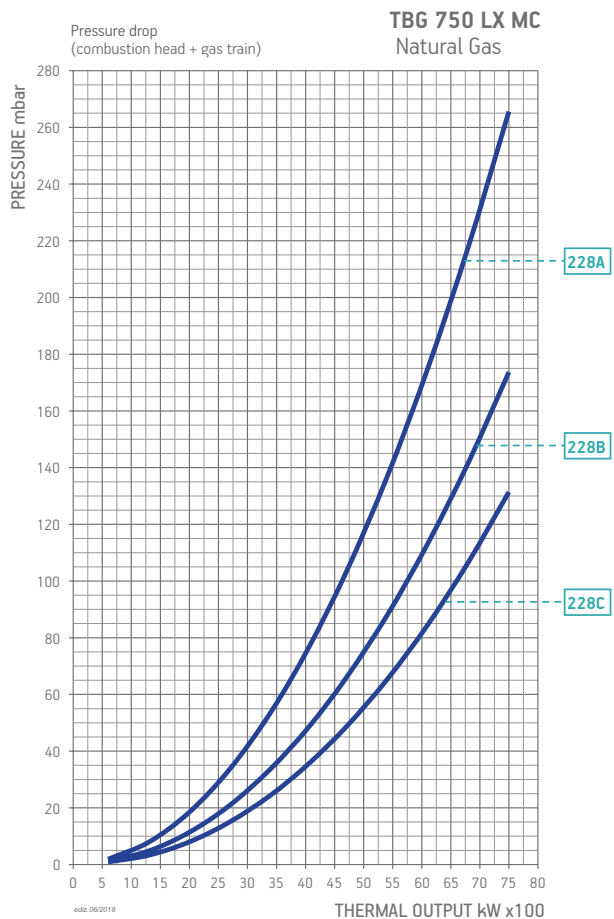
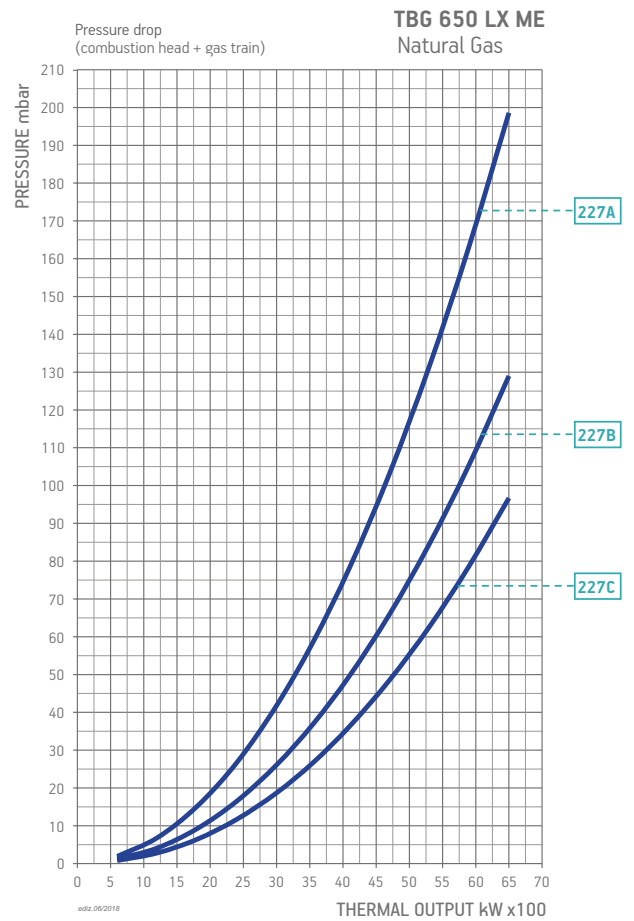
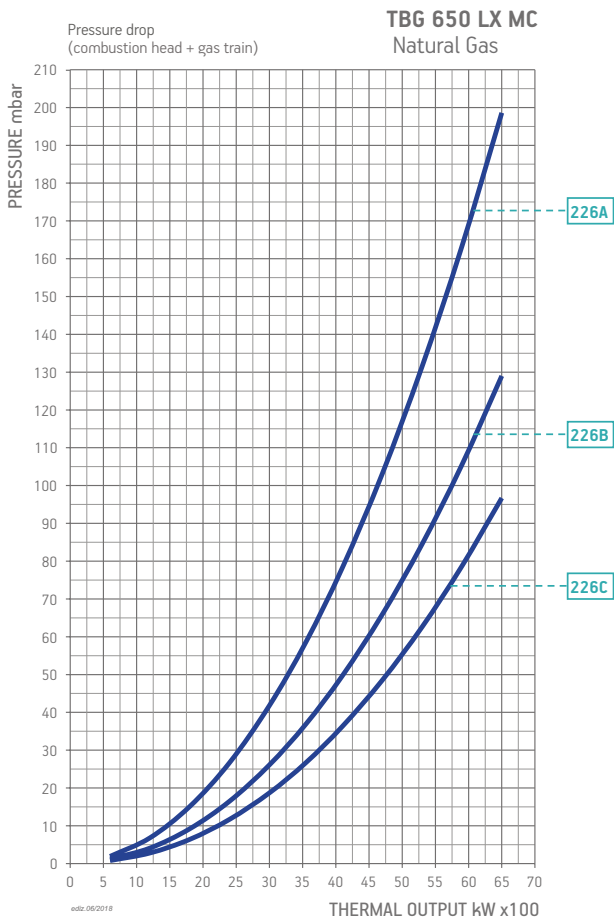
Burner model	Gas type	Version	P.Max** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 450 LX MC	LPG	CE/EXP	500	CTV	19990599	Included	-	Included	D8	
TBG 450 LX ME TBG 450 LX ME V	LPG	CE/EXP	500	CTV	19990541	Included	-	Included	D4	
TBG 510 LX MC	LPG	CE/EXP	500	CTV	19990599	Included	-	Included	D8	
TBG 510 LX ME TBG 510 LX ME V	LPG	CE/EXP	500	CTV	19990541	Included	-	Included	D4	

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.

## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max mbar **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 650 LX MC	Natural gas	226A	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
			CE/EXP	500	CTV	19990759	Included	-	Included	D8	
		226B	CE/EXP	500	CTV	19990601	Included	-	Included	D8	
			CE/EXP	500	CTV	19990760	Included	-	Included	D8	
		226C	CE/EXP	500	CTV	19990602	Included	-	Included	D8	
			CE/EXP	500	CTV	19990761	Included	-	Included	D8	
TBG 650 LX ME/ME V	Natural gas	227A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
			CE/EXP	500	CTV	19990680	Included	-	Included	D4	
		227B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
			CE/EXP	500	CTV	19990681	Included	-	Included	D4	
		227C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
			CE/EXP	500	CTV	19990682	Included	-	Included	D4	
TBG 750 LX MC	Natural gas	228A	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
			CE/EXP	500	CTV	19990759	Included	-	Included	D8	
		228B	CE/EXP	500	CTV	19990601	Included	-	Included	D8	
			CE/EXP	500	CTV	19990760	Included	-	Included	D8	
		228C	CE/EXP	500	CTV	19990602	Included	-	Included	D8	
			CE/EXP	500	CTV	19990761	Included	-	Included	D8	
TBG 750 LX ME/ME V	Natural gas	229A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
			CE/EXP	500	CTV	19990680	Included	-	Included	D4	
		229B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
			CE/EXP	500	CTV	19990681	Included	-	Included	D4	
		229C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
			CE/EXP	500	CTV	19990682	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max mbar **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBG 650 LX MC	LPG	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
TBG 650 LX ME/ME V	LPG	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
TBG 750 LX MC	LPG	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
TBG 750 LX ME/ME V	LPG	CE/EXP	500	CTV	19990542	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.



	TBG 800 MC	TBG 800 ME	TBG 800 ME V
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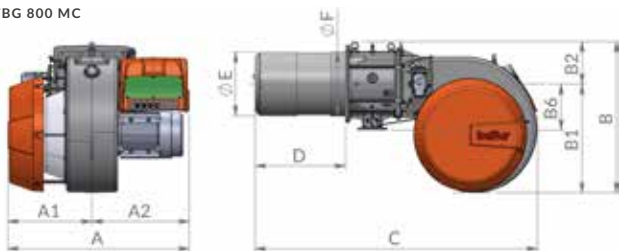
**Gas burner compliant with European standard EN676. Operation:**

	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:10	1:10	1:10
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

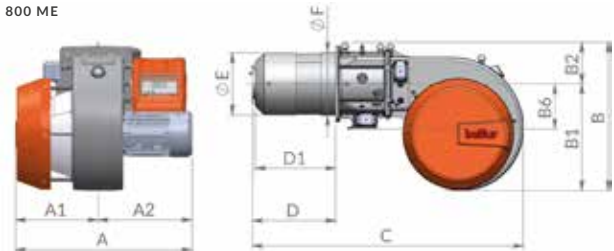
**LEGEND:**

○ Optional; ● As standard

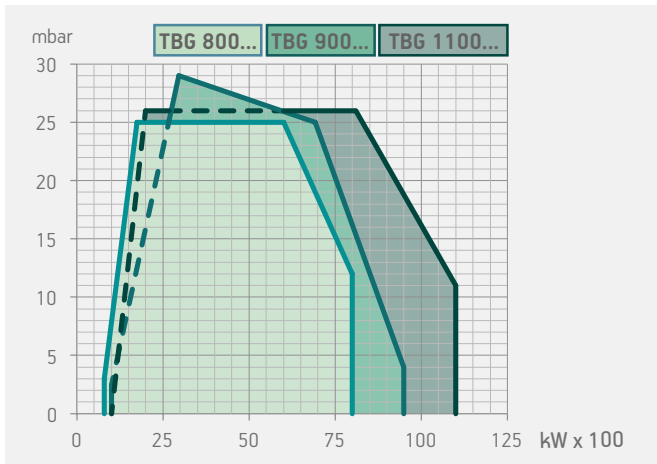
TBG 800 MC



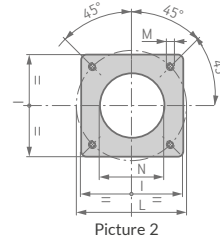
TBG 800 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 800 MC	1230	570	660	1030	740	290	310	2020	720	570	418	432	520	594	M20	452	2
TBG 800 ME	1230	570	660	1030	740	290	310	2020	720	570	418	432	520	594	M20	452	2
TBG 800 ME V	1230	570	660	1030	740	290	310	2020	720	570	418	432	520	594	M20	452	2
TBG 800 ME V O2	1230	570	660	1030	740	290	310	2020	720	570	418	432	520	594	M20	452	2
TBG 800 ME V CO	1230	570	660	1030	740	290	310	2020	720	570	418	432	520	594	M20	452	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 800 MC	1950	1510	1210	460
TBG 800 ME	1950	1510	1210	460
TBG 800 ME V	1950	1510	1210	480



Flange dimensions and boiler drilling template.

Picture 2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	800 ÷ 8000	<b>TBG 800 MC</b>	<b>67230020</b>	3N AC 50Hz 400V	15,0	4) 19)
			class 3	800 ÷ 8000	<b>TBG 800 ME</b>	<b>67220010</b>	3N AC 50Hz 400V	15,0	4) 19)
•	○	○	class 3	800 ÷ 8000	<b>TBG 800 ME V</b>	<b>67220015</b>	3N AC 50Hz 400V	15,0	4) 10) 19)
Frequency 60 Hz									
			class 3	800 ÷ 8000	<b>TBG 800 MC</b>	<b>67235420</b>	3N AC 60Hz 380V	18,5	4) 19)
			class 3	800 ÷ 8000	<b>TBG 800 ME</b>	<b>67225410</b>	3N AC 60Hz 380V	18,5	4) 19)
•	○	○	class 3	800 ÷ 8000	<b>TBG 800 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	18,5	4) 10) 19)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 800 MC: modulation kit (see page 324)	98000055
TBG 800 ME: modulation kit (included in ME V version)	98000059
TBG 800 MC/800 ME: modulating probe (see page 324)	

### NOTE

- 4 Equipped with automatic air closure device.
  - 10 Inverter supplied separately, not included on the machine.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Reversing nozzle kit 19)	98000361
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.

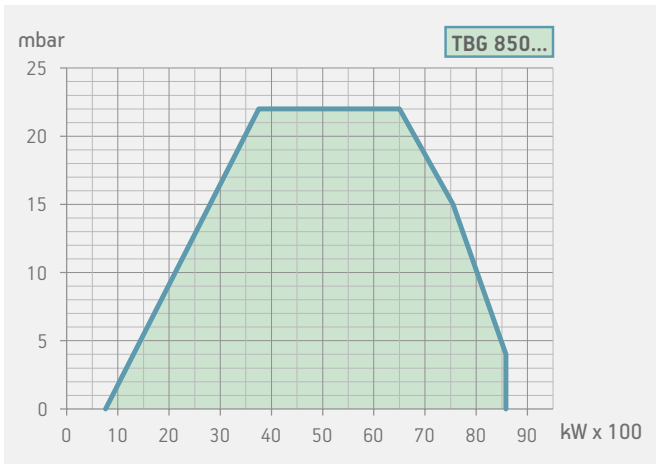




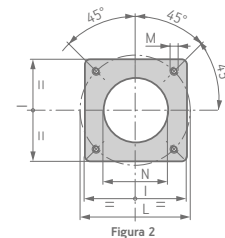
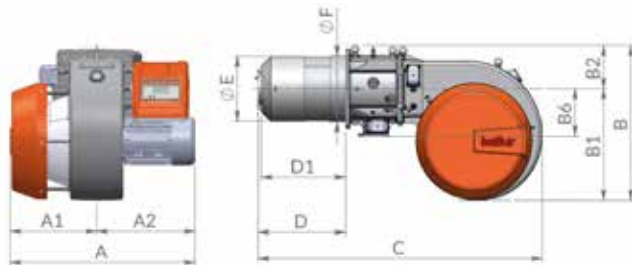
	TBG 850 LX ME	TBG 850 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:10	1:10
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption		●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging kg
	L	P mm	H	
TBG 850 LX ME	1950	1510	1240	474
TBG 850 LX ME V	1950	1510	1240	484



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 850 LX ME	1214	568	646	1009	277	732	310	1865	574	425	432	520	594	M20	440	
TBG 850 LX ME V	1214	568	646	1009	277	732	310	1865	574	425	432	520	594	M20	440	

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
					Frequency 50 Hz				
			class 3	760 ÷ 8580	<b>TBG 850 LX ME</b>	<b>18400010</b>	3N AC 50Hz 400V	18,5	4)
•	○	○	class 3	760 ÷ 8580	<b>TBG 850 LX ME V</b>	<b>18400015</b>	3N AC 50Hz 400V	18,5	4) 10)
					Frequency 60 Hz				
			class 3	760 ÷ 8580	<b>TBG 850 LX ME</b>	<b>18405410</b>	3N AC 60Hz 380V	18,5	4)
•	○	○	class 3	760 ÷ 8580	<b>TBG 850 LX ME V</b>	<b>18405415</b>	3N AC 60Hz 380V	18,5	4) 10)

○ Optional, • As standard

### ADDITIONAL ACCESSORIES

DESCRIPTION	PART NO.
Soundproof burner cover: contact your sales representative	
Modulation kit (see page 324)	98000059
Modulating probe for LCM 100 (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

### NOTE

4 Equipped with air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

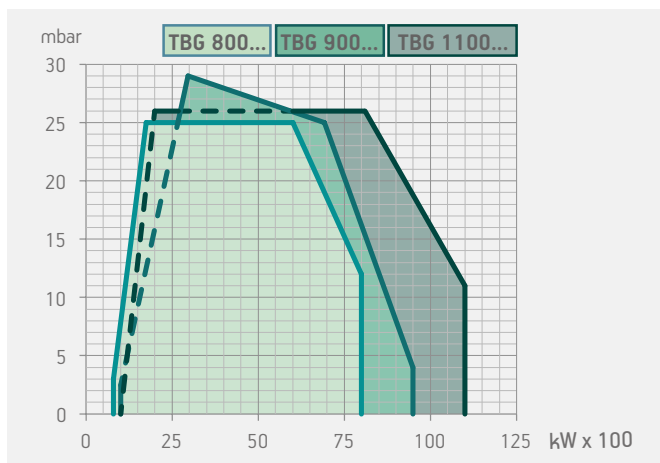
Boiler coupling kit, plug for wiring.



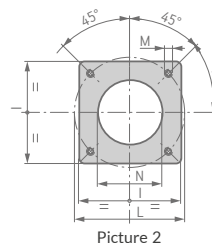
	TBG 900 MC	TBG 900 ME	TBG 900 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	○
Modulation ratio:	1:9	1:9	1:11
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange.	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise.	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer.	●	●	●
Control panel with display diagram for working mode with indication lights.	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment.		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



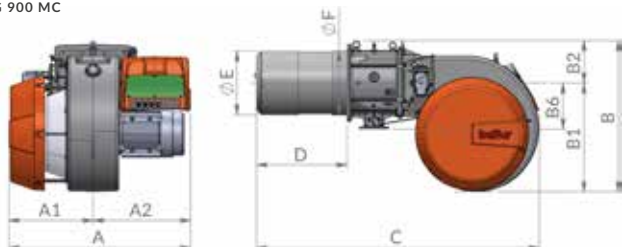
Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 900 MC	1950	1510	1210	460
TBG 900 ME	1950	1510	1210	460
TBG 900 ME V	1950	1510	1210	



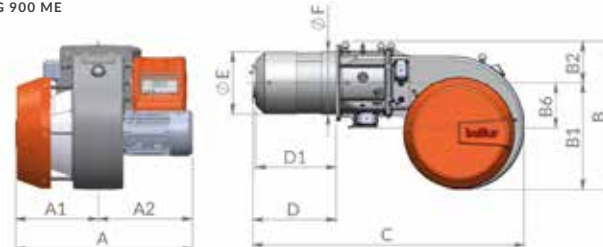
Flange dimensions and boiler drilling template.

Picture 2

TBG 900 MC



TBG 900 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M mm	N mm	Pic.
TBG 900 MC	1230	570	660	1030	740	290	310	1950	640	426	432	520	594	M20	462	2
TBG 900 ME	1230	570	660	1030	740	290	310	1950	640	426	432	520	594	M20	462	2
TBG 900 ME V	1230	570	660	1030	740	290	310	1950	640	426	432	520	594	M20	462	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
					Frequency 50 Hz				
			class 2	1000 ÷ 9500	<b>TBG 900 MC</b>	<b>67430010</b>	3N AC 50Hz 400V	15,0	4)
			class 2	1000 ÷ 9500	<b>TBG 900 ME</b>	<b>67420010</b>	3N AC 50Hz 400V	15,0	4)
•	○	○	class 2	1000 ÷ 9500	<b>TBG 900 ME V</b>	<b>67420015</b>	3N AC 50Hz 400V	15,0	4)
					Frequency 60 Hz				
			class 2	1000 ÷ 9500	<b>TBG 900 MC</b>	<b>67435410</b>	3N AC 60Hz 380V	18,5	4)
			class 2	1000 ÷ 9500	<b>TBG 900 ME</b>	<b>67425410</b>	3N AC 60Hz 380V	18,5	4)
•	○	○	class 2	1000 ÷ 9500	<b>TBG 900 ME V</b>	<b>67425415</b>	3N AC 60Hz 380V	18,5	4)

○ Optional, • As standard

## MODULATING MODE

DESCRIPTION	PART NO.
TBG 900 MC: modulation kit (see page 324)	98000055
TBG 900 ME: modulation kit (see page 324)	98000059
Modulating probe (see page 324)	

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

## GAS BURNERS ACCESSORIES

Boiler coupling kit.

## NOTES

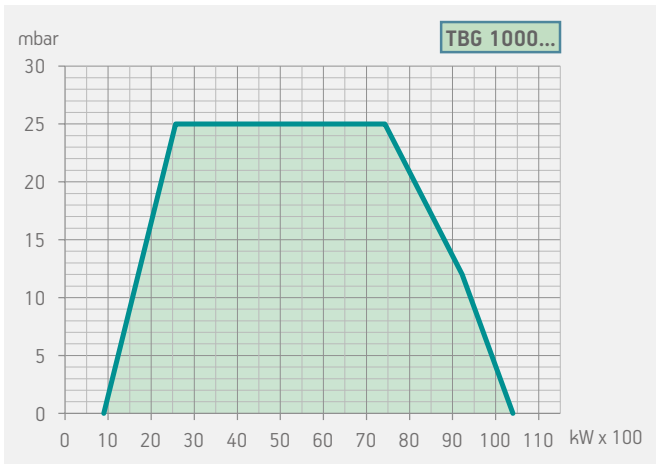
4 Equipped with automatic air closure device.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



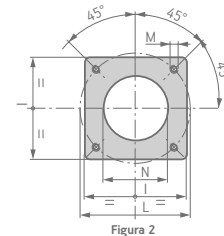
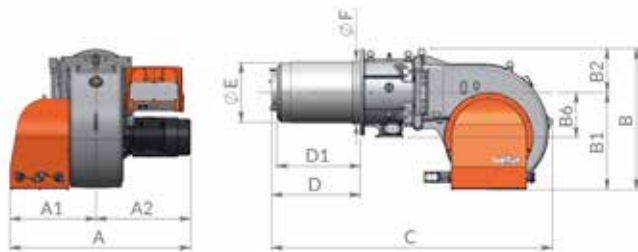
	TBG 1000 LX ME	TBG 1000 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:11	1:11
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption		●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBG 1000 LX ME	1950	1510	1240	521
TBG 1000 LX ME V	1950	1510	1240	500



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 1000 LX ME	1314	668	646	1049	764	285	310	1865	574	425	432	520	594	M20	462	2
TBG 1000 LX ME V	1314	668	646	1049	764	285	310	1865	574	425	432	520	594	M20	462	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
					Frequency 50 Hz				
			class 3	900 ÷ 10400	<b>TBG 1000 LX ME</b>	<b>18420010</b>	3N AC 50Hz 400V	22	4)
•	○	○	class 3	900 ÷ 10400	<b>TBG 1000 LX ME V</b>	<b>18420015</b>	3N AC 50Hz 400V	22	4) 10)
					Frequency 60 Hz				
			class 3	900 ÷ 10400	<b>TBG 1000 LX ME</b>	<b>18425410</b>	3N AC 60Hz 380V	22	4)
•	○	○	class 3	900 ÷ 10400	<b>TBG 1000 LX ME V</b>	<b>18425415</b>	3N AC 60Hz 380V	22	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
Modulation kit (included in ME V version)	98000059

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

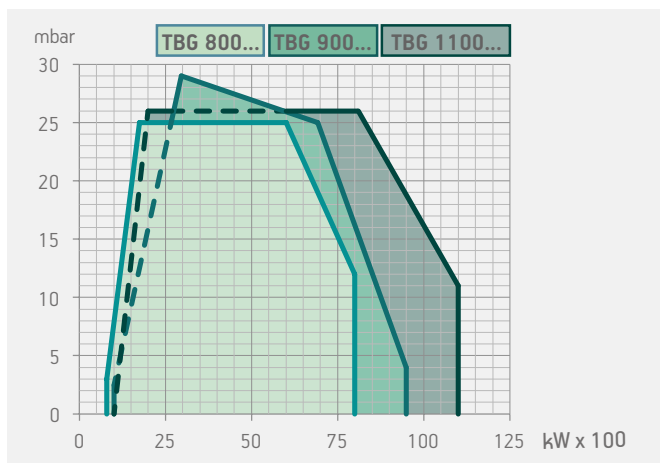
4 Equipped with air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



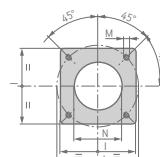
	TBG 1100 MC	TBG 1100 ME	TBG 1100 ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>mechanical two-stage progressive</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:11	1:11	1:11
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



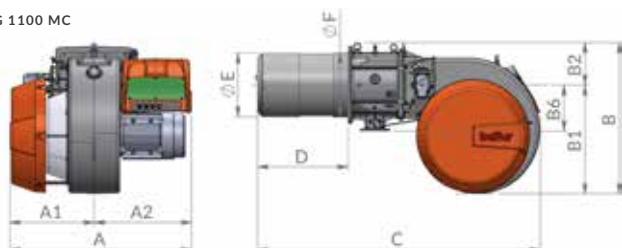
Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 1100 MC	1950	1510	1210	490
TBG 1100 ME	1950	1510	1210	490
TBG 1100 ME V	1950	1510	1210	500



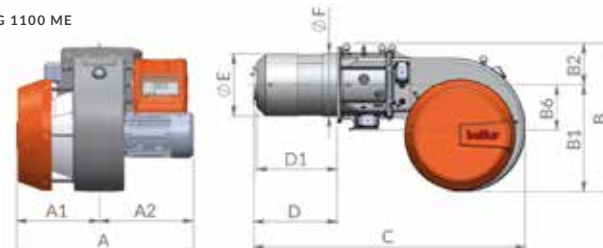
Flange dimensions and boiler drilling template.

Picture 2

TBG 1100 MC



TBG 1100 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 1100 MC	1230	570	660	1030	740	290	310	2030	720	451	418	520	594	M20	481	2
TBG 1100 ME	1230	570	660	1030	740	290	310	2030	720	451	418	520	594	M20	481	2
TBG 1100 ME V	1230	570	660	1030	740	290	310	2030	720	451	418	520	594	M20	481	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	1000 ÷ 11000	<b>TBG 1100 MC</b>	<b>67450020</b>	3N AC 50Hz 400V	22	4)
			class 2	1000 ÷ 11000	<b>TBG 1100 ME</b>	<b>67440010</b>	3N AC 50Hz 400V	22	4)
•	○	○	class 2	1000 ÷ 11000	<b>TBG 1100 ME V</b>	<b>67440015</b>	3N AC 50Hz 400V	22	4) 10)
Frequency 60 Hz									
			class 2	1000 ÷ 11000	<b>TBG 1100 MC</b>	<b>67455420</b>	3N AC 60Hz 380V	30	4)
			class 2	1000 ÷ 11000	<b>TBG 1100 ME</b>	<b>67445410</b>	3N AC 60Hz 380V	30	4)
•	○	○	class 2	1000 ÷ 11000	<b>TBG 1100 ME V</b>	<b>67445415</b>	3N AC 60Hz 380V	30	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 1100 MC: modulation kit (see page 324)	98000055
TBG 1100 ME: modulation kit (included in ME V version)	98000059
TBG 1100 MC/1100 ME: modulating probe (see page 324)	

### NOTE

4 Equipped with automatic air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

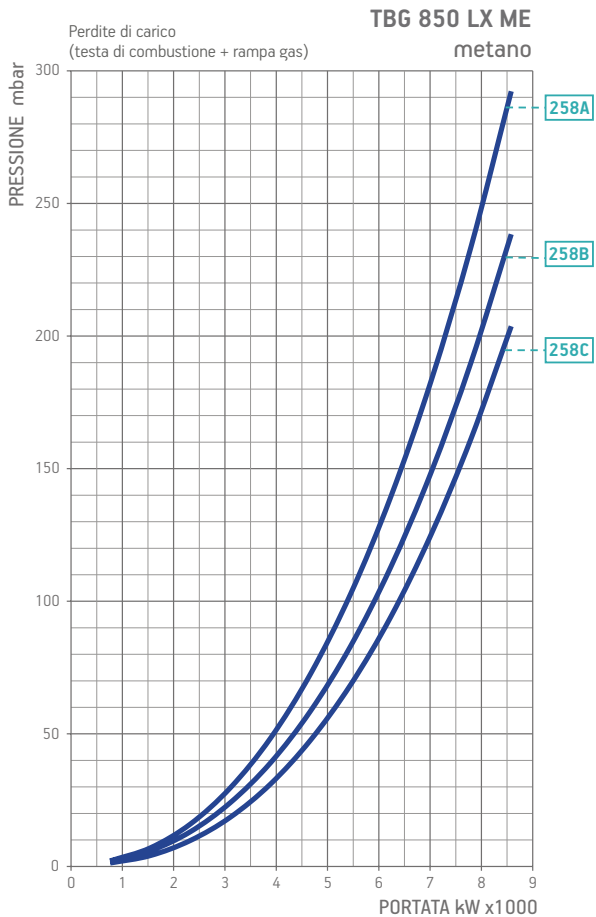
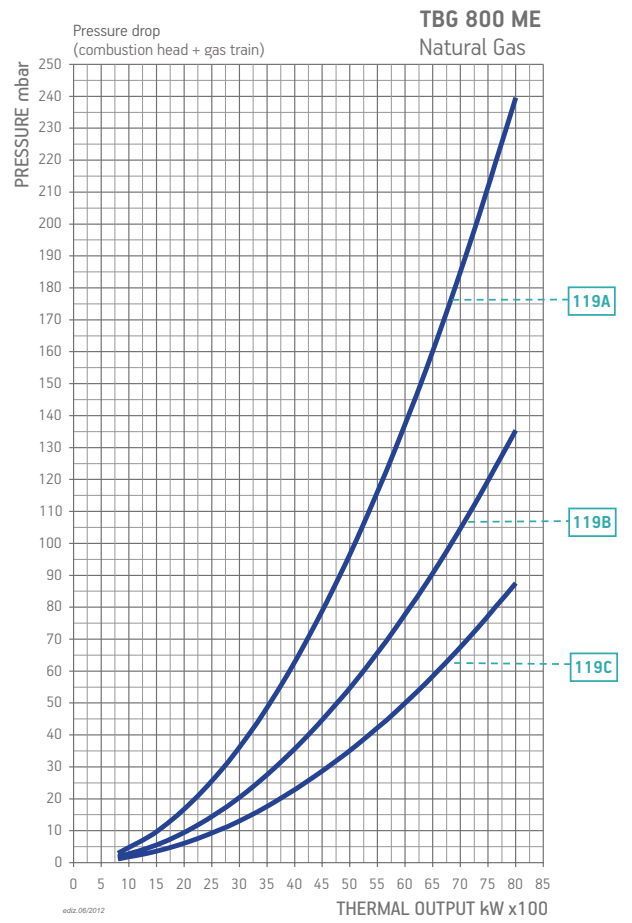
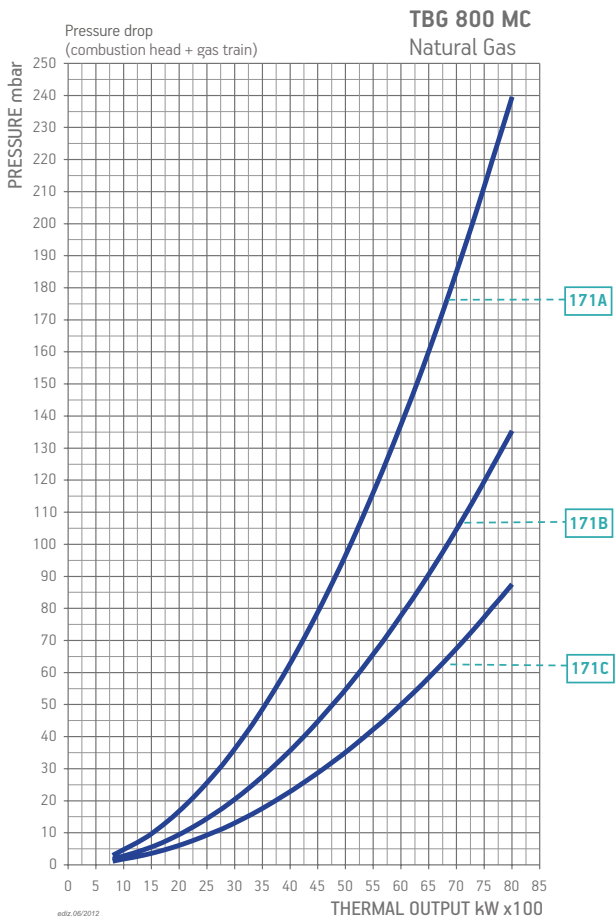
DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

Boiler coupling kit.



## BURNER/GAS TRAIN MATCH



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 800 MC	Natural gas	171A	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
			CE/EXP	500	CTV	19990759	Included	-	Included	D8	
		171B	CE/EXP	500	CTV	19990601	Included	-	Included	D8	
			CE/EXP	500	CTV	19990760	Included	-	Included	D8	
		171C	CE/EXP	500	CTV	19990602	Included	-	Included	D8	
			CE/EXP	500	CTV	19990761	Included	-	Included	D8	
TBG 800 ME/ME V	Natural gas	119A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
			CE/EXP	500	CTV	19990680	Included	-	Included	D4	
		119B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
			CE/EXP	500	CTV	19990681	Included	-	Included	D4	
		119C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
			CE/EXP	500	CTV	19990682	Included	-	Included	D4	
TBG 850 LX ME	Natural gas	258A	CE/EXP	500	CTV	19990633	Included	-	Included	D8	
			CE/EXP	500	CTV	19990634	Included	-	Included	D8	
		258A	CE/EXP	500	CTV	19990674	Included	-	Included	D8	
			CE/EXP	500	CTV	19990683	Included	-	Included	D8	
		258B	CE/EXP	500	CTV	19990684	Included	-	Included	D8	
			CE/EXP	500	CTV	19990685	Included	-	Included	D8	

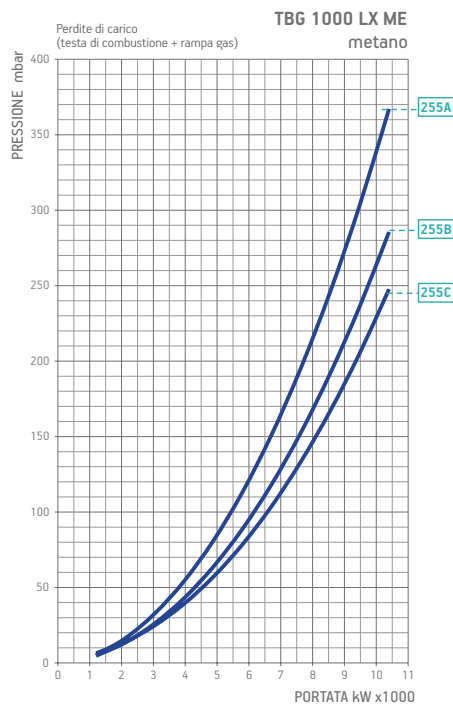
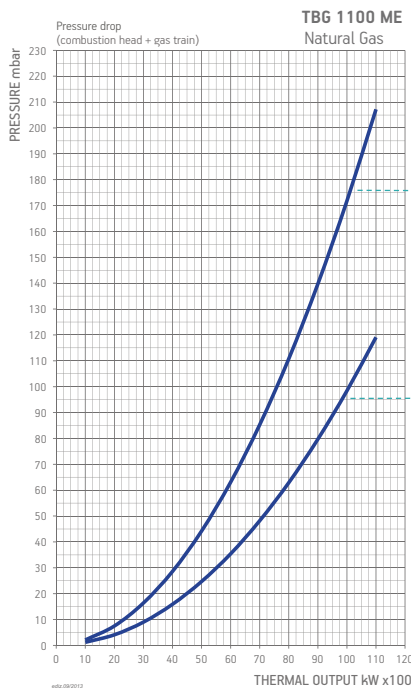
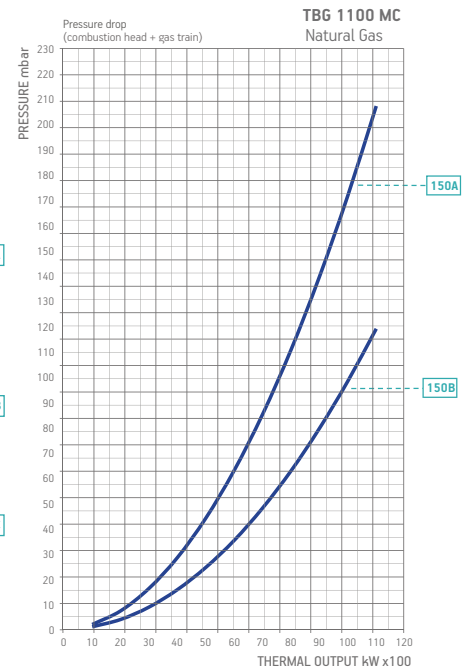
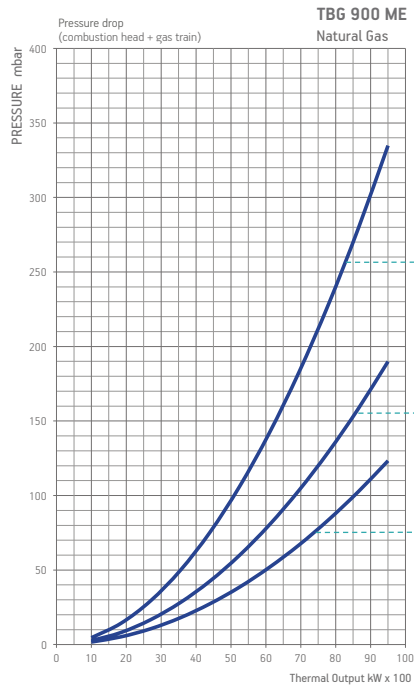
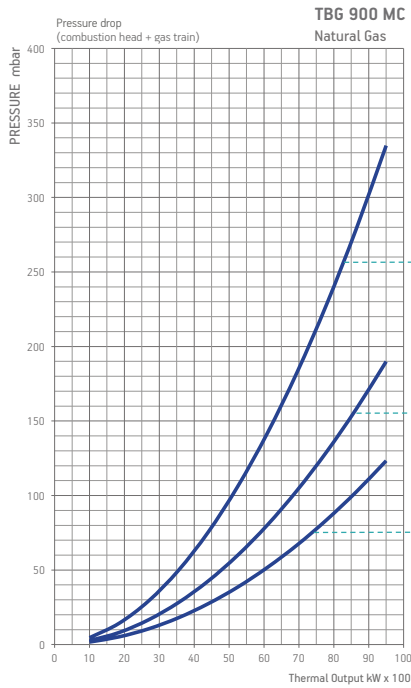
To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 900 MC	Natural gas	220A	CE/EXP	500	CTV	19990600	Included	-	Included	D8	
			CE/EXP	500	CTV	19990759	Included	-	Included	D8	
		220B	CE/EXP	500	CTV	19990601	Included	-	Included	D8	
			CE/EXP	500	CTV	19990760	Included	-	Included	D8	
		220C	CE/EXP	500	CTV	19990602	Included	-	Included	D8	
			CE/EXP	500	CTV	19990761	Included	-	Included	D8	
TBG 900 ME/ME V	Natural gas	221A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
			CE/EXP	500	CTV	19990680	Included	-	Included	D4	
		221B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
			CE/EXP	500	CTV	19990681	Included	-	Included	D4	
		221C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
			CE/EXP	500	CTV	19990682	Included	-	Included	D4	
TBG 1100 MC	Natural gas	150A	CE/EXP	500	CTV	19990601	Included	-	Included	D8	
			CE/EXP	500	CTV	19990760	Included	-	Included	D8	
		150B	CE/EXP	500	CTV	19990602	Included	-	Included	D8	
			CE/EXP	500	CTV	19990761	Included	-	Included	D8	
TBG 1100 ME TBG 1100 ME V	Natural gas	154A	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
			CE/EXP	500	CTV	19990681	Included	-	Included	D4	
		154B	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
			CE/EXP	500	CTV	19990682	Included	-	Included	D4	
TBG 1000 LX ME TBG 1000 LX ME V	Natural gas	255A	CE/EXP	500	CTV	19990633	Included	-	Included	D4	
		255B	CE/EXP	500	CTV	19990634	Included	-	Included	D4	
		255C	CE/EXP	500	CTV	19990674	Included	-	Included	D4	
		255A	CE/EXP	500	CTV	19990683	Included	-	Included	D4	
		255B	CE/EXP	500	CTV	19990684	Included	-	Included	D4	
		255C	CE/EXP	500	CTV	19990685	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



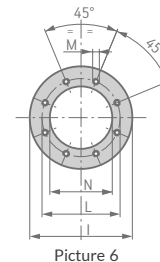
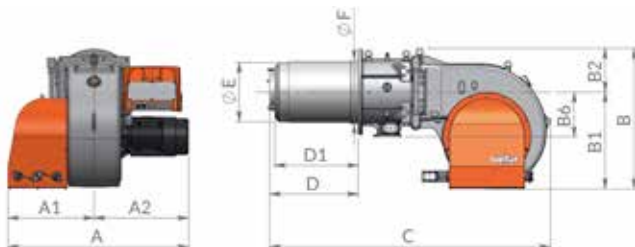
TBG 1200 MC	TBG 1200 ME	TBG 1200 ME V
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**Gas burner compliant with European standard EN676. Operation:**

	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:10	1:10	1:10
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3	class 3
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

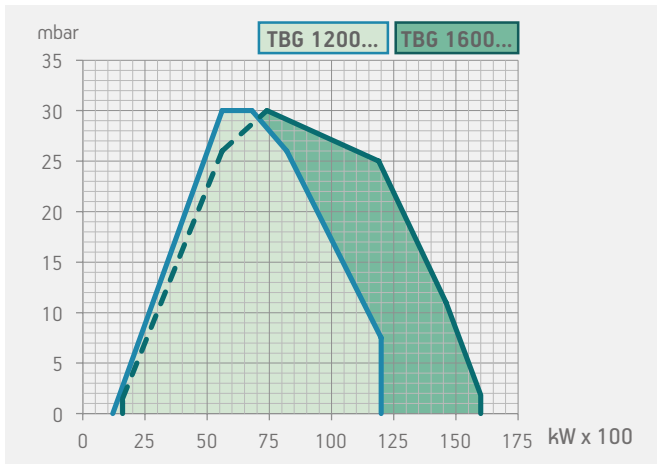
**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 1200 MC	1470	700	770	1130	780	350	360	2290	745		485	503	685	630	M20	533	6
TBG 1200 ME	1470	700	770	1130	780	350	360	2290	745		485	503	685	630	M20	533	6
TBG 1200 ME V	1470	700	770	1130	780	350	360	2290	745		485	503	685	630	M20	533	6
TBG 1200 ME V O2	1470	700	770	1130	780	350	360	2290	745		485	503	685	630	M20	533	6
TBG 1200 ME V CO	1470	700	770	1130	780	350	360	2290	745		485	503	685	630	M20	533	6



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 1200 MC	1950	1680	1300	650
TBG 1200 ME	1950	1680	1300	650
TBG 1200 ME V	1950	1680	1300	665

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 3	1200 ÷ 12000	<b>TBG 1200 MC</b>	<b>67270020</b>	3N AC 50Hz 400V	22	4)
			class 3	1200 ÷ 12000	<b>TBG 1200 ME</b>	<b>67260010</b>	3N AC 50Hz 400V	22	4)
•	○	○	class 3	1200 ÷ 12000	<b>TBG 1200 ME V</b>	<b>67260015</b>	3N AC 50Hz 400V	22	4) 10)
Frequency 60 Hz									
			class 3	1200 ÷ 12000	<b>TBG 1200 MC</b>	<b>67275420</b>	3N AC 60Hz 380V	22	4)
			class 3	1200 ÷ 12000	<b>TBG 1200 ME</b>	<b>67265410</b>	3N AC 60Hz 380V	22	4)
•	○	○	class 3	1200 ÷ 12000	<b>TBG 1200 ME V</b>	<b>67265415</b>	3N AC 60Hz 380V	22	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 1200 MC: modulation kit (see page 324)	98000055
TBG 1200 ME: modulation kit (included in ME V version)	98000059
TBG 1200 MC/1200 ME: modulating probe (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980061

### GAS BURNERS ACCESSORIES

Boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



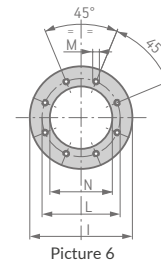
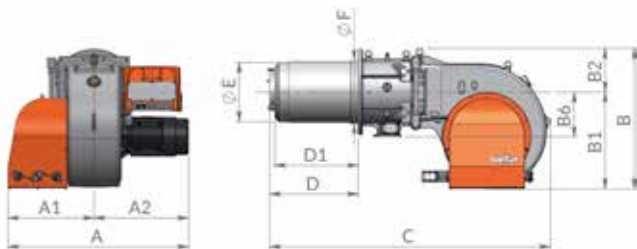
TBG 1600 MC	TBG 1600 ME	TBG 1600 ME V
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**Gas burner compliant with European standard EN676. Operation:**

	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:10	1:10	1:10
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

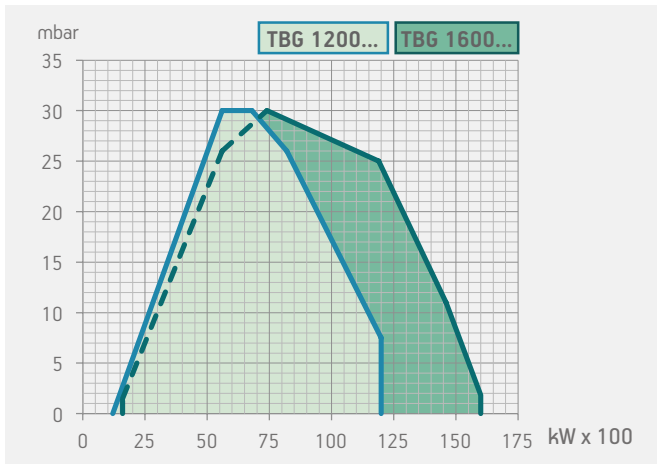
**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 1600 MC	1470	700	770	1130	780	350	360	2290	735	545	503	685	630	M20	575	6
TBG 1600 ME	1470	700	770	1130	780	350	360	2290	735	545	503	685	630	M20	575	6
TBG 1600 ME V	1470	700	770	1130	780	350	360	2290	735	545	503	685	630	M20	575	6
TBG 1600 ME V O2	1470	700	770	1130	780	350	360	2290	735	545	503	685	630	M20	575	6
TBG 1600 ME V CO	1470	700	770	1130	780	350	360	2290	735	545	503	685	630	M20	575	6



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 1600 MC	1950	1680	1300	704
TBG 1600 ME	1950	1680	1300	704
TBG 1600 ME V	1950	1680	1300	730

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	1600 ÷ 16000	<b>TBG 1600 MC</b>	<b>67490020</b>	3N AC 50Hz 400V	30	4)
			class 2	1600 ÷ 16000	<b>TBG 1600 ME</b>	<b>67480010</b>	3N AC 50Hz 400V	30	4)
•	○	○	class 2	1600 ÷ 16000	<b>TBG 1600 ME V</b>	<b>67480015</b>	3N AC 50Hz 400V	30	4) 10)
Frequency 60 Hz									
			class 2	1600 ÷ 16000	<b>TBG 1600 MC</b>	<b>67495420</b>	3N AC 60Hz 380V	30	4)
			class 2	1600 ÷ 16000	<b>TBG 1600 ME</b>	<b>67485410</b>	3N AC 60Hz 380V	30	4)
•	○	○	class 2	1600 ÷ 16000	<b>TBG 1600 ME V</b>	<b>67485415</b>	3N AC 60Hz 380V	30	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 1600 MC: modulation kit (see page 324)	98000055
TBG 1600 ME: modulation kit (included in ME V version)	98000059
TBG 1600 MC/1600 ME: modulating probe (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980061

### GAS BURNERS ACCESSORIES

Boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.

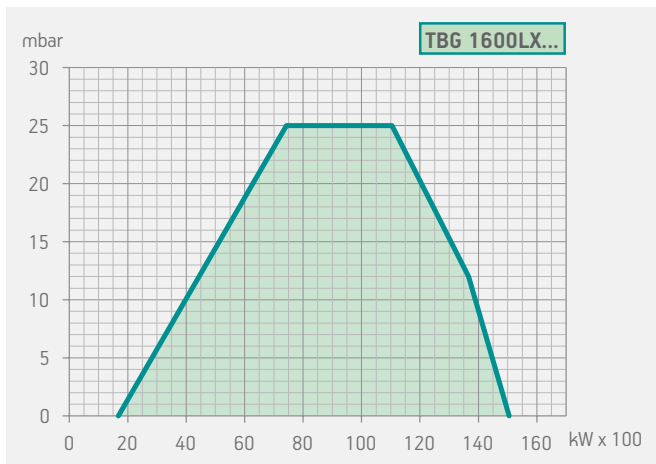




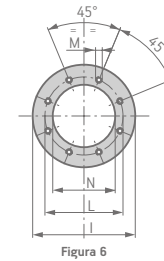
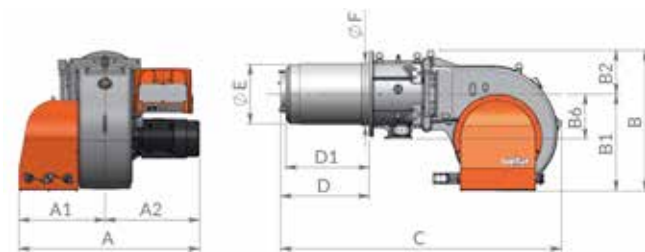
	TBG 1600 LX ME	TBG 1600 LX ME V
<b>Gas burner compliant with European standard EN676. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:9	1:9
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Ignition by gas pilot	●	●
Pilot gas train on-board, composed by: pressure regulator with incorporated filter, minimum pressure switch, safety valve, ignition valve	●	●
72 h continuous operation	○	○
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	right/left	right/left
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54
Noise level dB(A)	92	92
Motor VDS per ridurre il consumo complessivo di energia elettrica		●

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBG 1600 LX ME	1950	1680	1340	700
TBG 1600 LX ME V	1950	1680	1340	726



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 1600 LX ME	1532	690	842	1108	765	343	359	2220	683	485	520	685	630	M20	535	6
TBG 1600 LX ME V	1532	690	842	1108	765	343	359	2220	683	485	520	685	630	M20	535	6

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
			class 3	1680 ÷ 15050	TBG 1600 LX ME	67570010	3N AC 50Hz 400V	30	4)
	•	○	class 3	1680 ÷ 15050	TBG 1600 LX ME V	67570015	3N AC 50Hz 400V	30	4) 10)
			class 3	1680 ÷ 15050	TBG 1600 LX ME	on request	3N AC 60Hz 380V	30	4)
	•	○	class 3	1680 ÷ 15050	TBG 1600 LX ME V	on request	3N AC 60Hz 380V	30	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
Modulation kit (included in ME V version)	98000059

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461

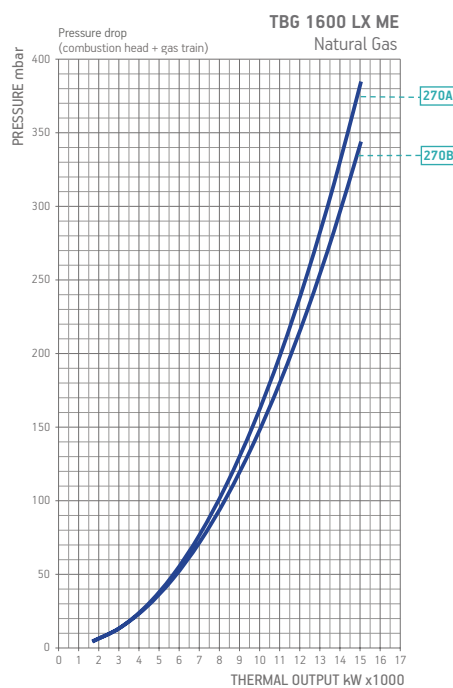
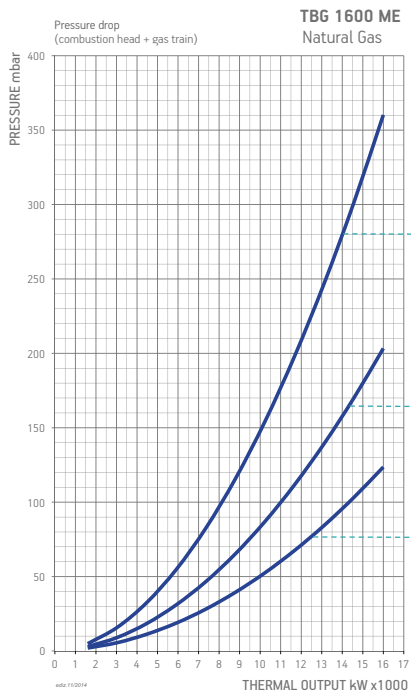
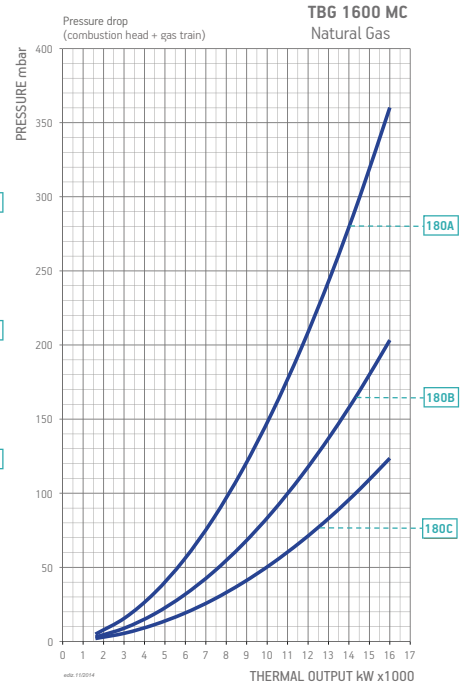
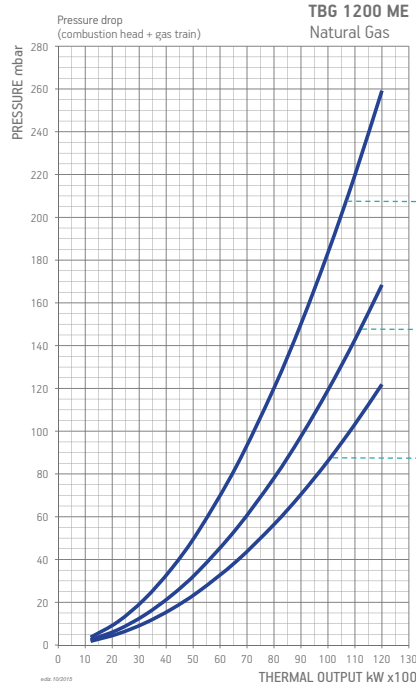
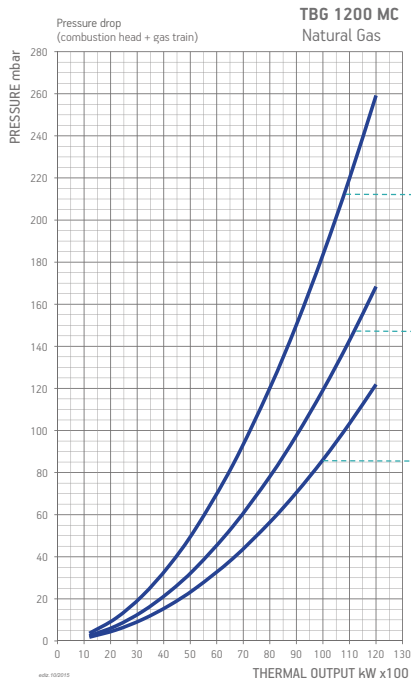
Soundproof cover: contact your sales representative

### GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

Burner model	Gas type	Curve on graph	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 1200 MC	Natural gas	188A	CE/EXP	500	CTV	19990615	Included	-	Included	D8	
		188B	CE/EXP	500	CTV	19990616	Included	-	Included	D8	
		188C	CE/EXP	500	CTV	19990617	Included	-	Included	D8	
TBG 1200 ME/ME V	Natural gas	189A	CE/EXP	500	CTV	19990606	Included	-	Included	D4	
			CE/EXP	500	CTV	19990686	Included	-	Included	D4	
		189B	CE/EXP	500	CTV	19990607	Included	-	Included	D4	
			CE/EXP	500	CTV	19990687	Included	-	Included	D4	
		189C	CE/EXP	500	CTV	19990608	Included	-	Included	D4	
			CE/EXP	500	CTV	19990688	Included	-	Included	D4	
			CE/EXP	500	CTV	19990686	Included	-	Included	D4	
		189B	CE/EXP	500	CTV	19990687	Included	-	Included	D4	
			CE/EXP	500	CTV	19990688	Included	-	Included	D4	
CE/EXP	500		CTV	19990688	Included	-	Included	D4			
TBG 1600 MC	Natural gas	180A	CE/EXP	500	CTV	19990615	Included	-	Included	D8	
		180B	CE/EXP	500	CTV	19990616	Included	-	Included	D8	
		180C	CE/EXP	500	CTV	19990617	Included	-	Included	D8	
TBG 1600 ME/ME V	Natural gas	181A	CE/EXP	500	CTV	19990606	Included	-	Included	D4	
			CE/EXP	500	CTV	19990686	Included	-	Included	D4	
		181B	CE/EXP	500	CTV	19990607	Included	-	Included	D4	
			CE/EXP	500	CTV	19990687	Included	-	Included	D4	
		181C	CE/EXP	500	CTV	19990608	Included	-	Included	D4	
			CE/EXP	500	CTV	19990688	Included	-	Included	D4	
			CE/EXP	500	CTV	19990686	Included	-	Included	D4	
		181B	CE/EXP	500	CTV	19990687	Included	-	Included	D4	
			CE/EXP	500	CTV	19990688	Included	-	Included	D4	
CE/EXP	500		CTV	19990688	Included	-	Included	D4			
TBG 1600 LX ME TBG 1600 LX ME V	Natural gas	270A	CE/EXP	500	CTV	19990732	Included	-	Included	D4	
		270A	CE/EXP	500	CTV	19990687	Included	-	Included	D4	
		270B	CE/EXP	500	CTV	19990733	Included	-	Included	D4	
		270B	CE/EXP	500	CTV	19990688	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

## NOTE

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.



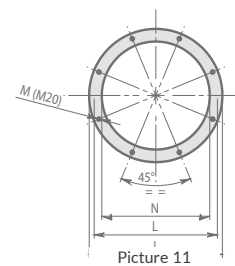
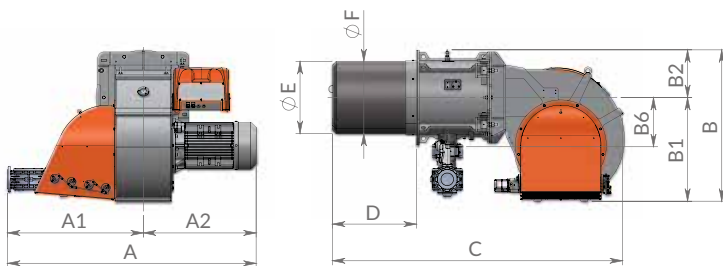
TBG 2000 MC	TBG 2000 ME	TBG 2000 ME V
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**Gas burner compliant with European standard EN676. Operation:**

	mechanical two-stage progressive	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○	●
Modulation ratio:	1:8	1:8	1:8
Low NOx and CO emissions gas burner according to European standard EN676:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●	●
Fixed boiler coupling flange	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Device made of sound-absorbing material to reduce fan noise	●	●	●
Adjustment of fan revolutions according to working stage by means of a frequency converter in order to reduce noise and electric consumption			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	up/down	up/down
Flame detection by ionisation electrode with connector for microamperometer	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	●
Electric protection rating:	IP54	IP54	IP54

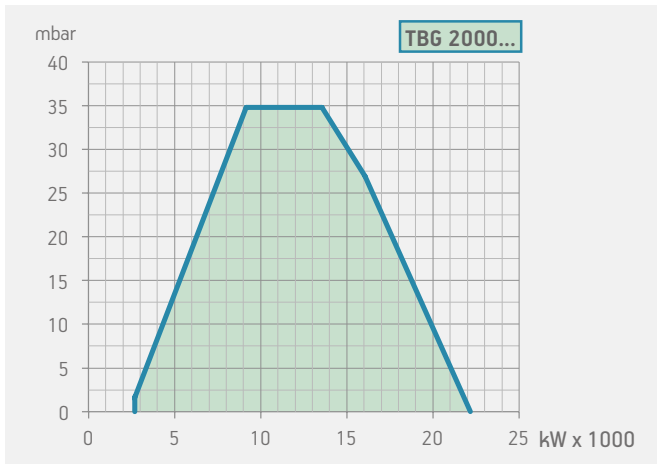
**LEGEND:**

○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 2000 MC	1860	915	945	1270	870	400	440	2340	700	600	630	790	730	M20	660	11
TBG 2000 ME	1860	915	945	1270	870	400	440	2340	700	600	630	790	730	M20	660	11
TBG 2000 ME V	1860	915	945	1270	870	400	440	2340	700	600	630	790	730	M20	660	11
TBG 2000 ME V O2	1860	915	945	1270	870	400	440	2340	700	600	630	790	730	M20	660	11
TBG 2000 ME V CO	1860	915	945	1270	870	400	440	2340	700	600	630	790	730	M20	660	11



Model	Size of packaging			Weight kg
	L	P mm	H	
TBG 2000 MC	2100	2040	1380	1150
TBG 2000 ME	2100	2040	1380	1150
TBG 2000 ME V	2100	2040	1380	1150

	O <sub>2</sub> kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
Frequency 50 Hz									
			class 2	2700 ÷ 22000	<b>TBG 2000 MC</b>	<b>67510010</b>	3N AC 50Hz 400V	45	4)
			class 2	2700 ÷ 22000	<b>TBG 2000 ME</b>	<b>67500020</b>	3N AC 50Hz 400V	45	4)
•	○	○	class 2	2700 ÷ 22000	<b>TBG 2000 ME V</b>	<b>67500025</b>	3N AC 50Hz 400V	45	4) 10)
Frequency 60 Hz									
			class 2	2700 ÷ 22000	<b>TBG 2000 MC</b>	<b>67515410</b>	3N AC 60Hz 380V	45	4)
			class 2	2700 ÷ 22000	<b>TBG 2000 ME</b>	<b>on request</b>	3N AC 60Hz 380V	45	4)
•	○	○	class 2	2700 ÷ 22000	<b>TBG 2000 ME V</b>	<b>on request</b>	3N AC 60Hz 380V	45	4) 10)

○ Optional, • As standard

### MODULATING MODE

DESCRIPTION	PART NO.
TBG 2000 MC: modulation kit (see page 324)	98000055
TBG 2000 ME: modulation kit (included in ME V version)	98000059
TBG 2000 MC/2000 ME: modulating probe (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980063

### GAS BURNERS ACCESSORIES

Boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



## TBG 2000 LX ME

## TBG 2000 LX ME V

## Gas burner compliant with European standard EN676. Operation:

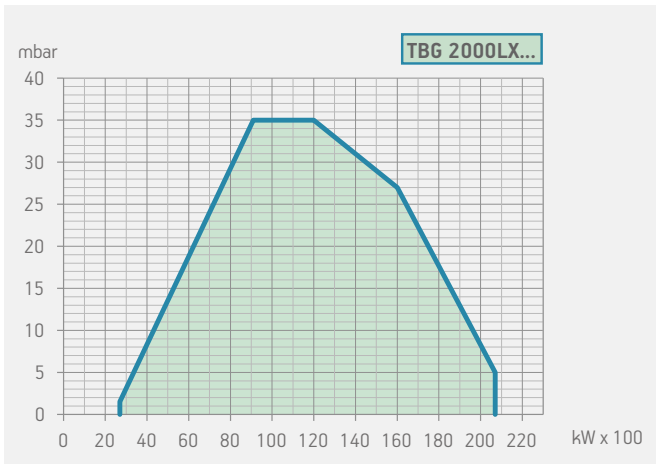
## electronic modulation

## electronic modulation

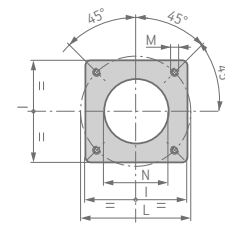
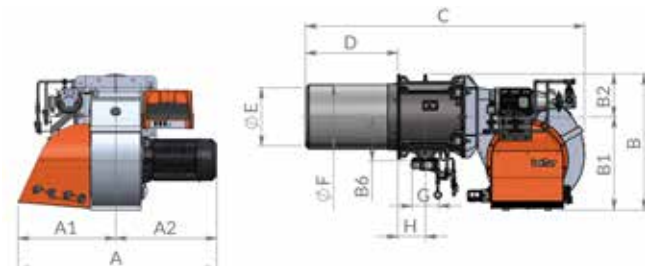
	TBG 2000 LX ME	TBG 2000 LX ME V
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:8	1:8
Low NOx and CO emissions gas burner according to European standard EN676:	class 3	class 3
Ignition by gas pilot	●	●
Pilot gas train on-board, composed by: pressure regulator with incorporated filter, minimum pressure switch, safety valve, ignition valve	●	●
72 h continuous operation	○	○
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	down	down
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54
Noise level dB(A)	86	86
Motor VDS per ridurre il consumo complessivo di energia elettrica		●

## LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBG 2000 LX ME	2110	2050	1390	1095
TBG 2000 LX ME V	2110	2050	1390	1125



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBG 2000 LX ME	1860	915	945	1270	870	400	440	2340	700	600	625	790	730	M20	670	2
TBG 2000 LX ME V	1860	915	945	1270	870	400	440	2340	700	600	625	790	730	M20	670	2

	O kit	CO kit	Emissions class	Thermal output kW	Model	Part no.	Electrical supply	Motor kW	Note
			class 3	2700 ÷ 20700	TBG 2000 LX ME	67590010	3N AC 50Hz 400V	45	4)
	•	○	class 3	2700 ÷ 20700	TBG 2000 LX ME V	67590015	3N AC 50Hz 400V	45	4) 10)
			class 3	2700 ÷ 20700	TBG 2000 LX ME	on request	3N AC 60Hz 380V	45	4)
	•	○	class 3	2700 ÷ 20700	TBG 2000 LX ME V	on request	3N AC 60Hz 380V	45	4) 10)

○ Optional, • As standard

## MODULATING MODE

DESCRIPTION	PART NO.
Modulation kit (included in ME V version)	98000059

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461

Soundproof cover: contact your sales representative

## GAS BURNERS ACCESSORIES

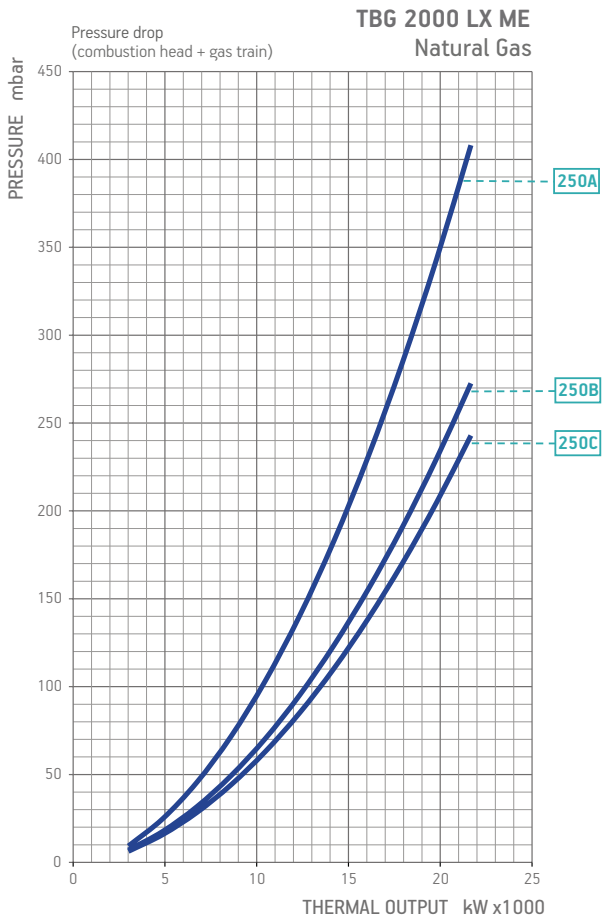
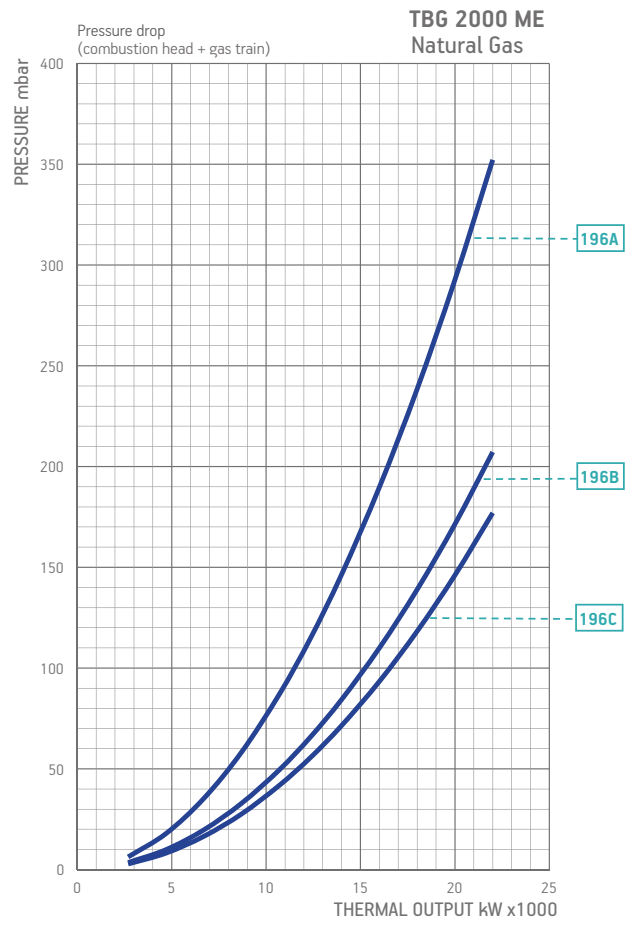
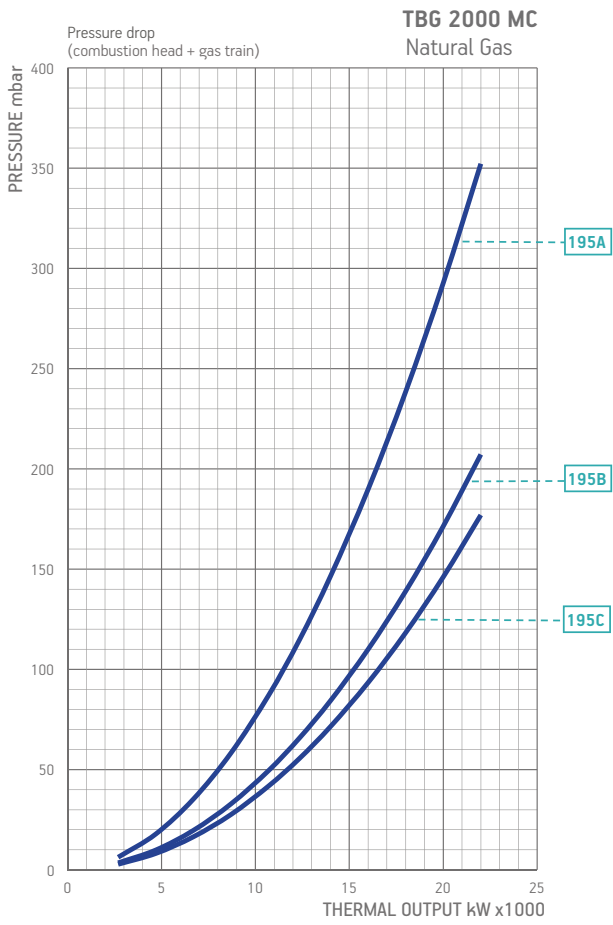
Boiler coupling kit, plug for wiring.

## NOTE

4 Equipped with air closure device.  
 10 Inverter supplied separately, not included on the machine.  
 Net calorific value at reference conditions of 0°C, 1013mbar:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>,  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>.  
 For different type of gas and pressure values, please get in contact with our commercial department.



## BURNER/GAS TRAIN MATCH



## BURNER/GAS TRAIN MATCH

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBG 2000 MC	Natural gas	195A	CE/EXP	500	CTV	19990616	Included	-	Included	D8	
		195B	CE/EXP	500	CTV	19990617	Included	-	Included	D8	
		195C	CE/EXP	500	CTV	19990627	Included	-	Included	D8	
TBG 2000 ME/ME V	Natural gas	196A	CE/EXP	500	CTV	19990607	Included	-	Included	D4	
		196B	CE/EXP	500	CTV	19990687	Included	-	Included	D4	
			CE/EXP	500	CTV	19990608	Included	-	Included	D4	
		196C	CE/EXP	500	CTV	19990688	Included	-	Included	D4	
			CE/EXP	500	CTV	19990626	Included	-	Included	D4	
TBG 2000 LX ME	Natural gas	250A	CE/EXP	500	CTV	19990648	Included	-	Included	D4	
		250A	CE/EXP	500	CTV	19990689	Included	-	Included	D4	
			CE/EXP	500	CTV	19990649	Included	-	Included	D4	
		250B	CE/EXP	500	CTV	19990690	Included	-	Included	D4	
			CE/EXP	500	CTV	19990650	Included	-	Included	D4	
		250C	CE/EXP	500	CTV	19990691	Included	-	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

## NOTE

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.

Simbology

**TBML...P**  
Two-stage gas/light oil burners. Dual operating mode.


**TBML...MC**  
Two-stage progressive/modulating gas/light oil burners with mechanical cam on gas, two-stage on light oil. Dual operation mode.

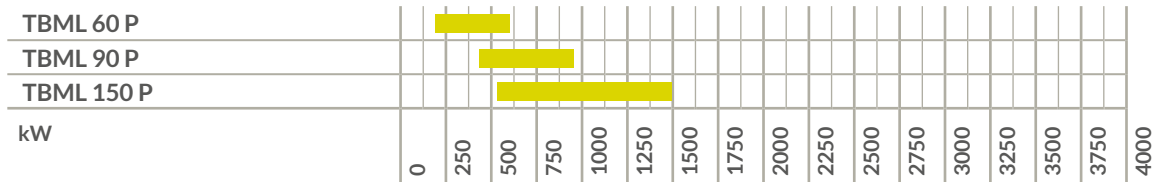
**TBML 50/80 ME**  
**TBML 120/160 ME**  
**TBML 200/260 ME**  
**TBML 360 ME**  
Modulating gas/light oil burners with electronic modulation on gas, two-stage on light oil. Dual operation mode.

**TBML dal 450 al 2000 ME**  
Modulating gas/light oil burners with electronic modulation. Dual operation mode.

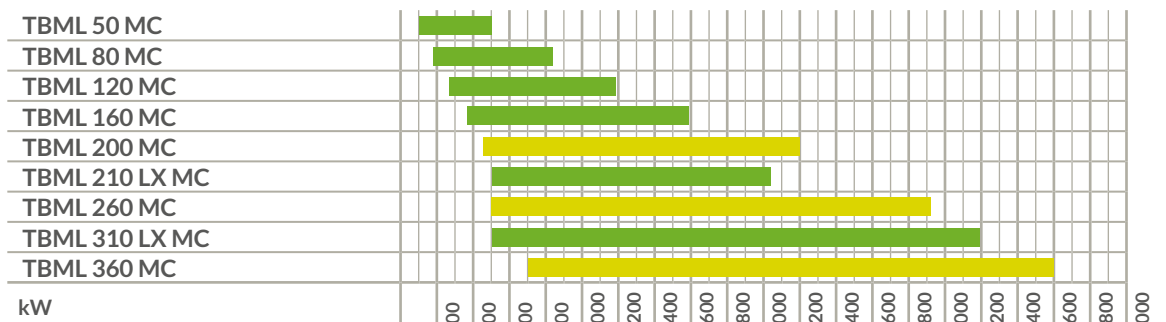
**TBNM...ME**  
Two-stage progressive/modulating gas/heavy oil burners with electronic modulation.. Dual operating mode.

## TWO-STAGE DUAL FUEL BURNERS - gas/light oil

 Low NOx  
Class 3 gas side  
according to EN676

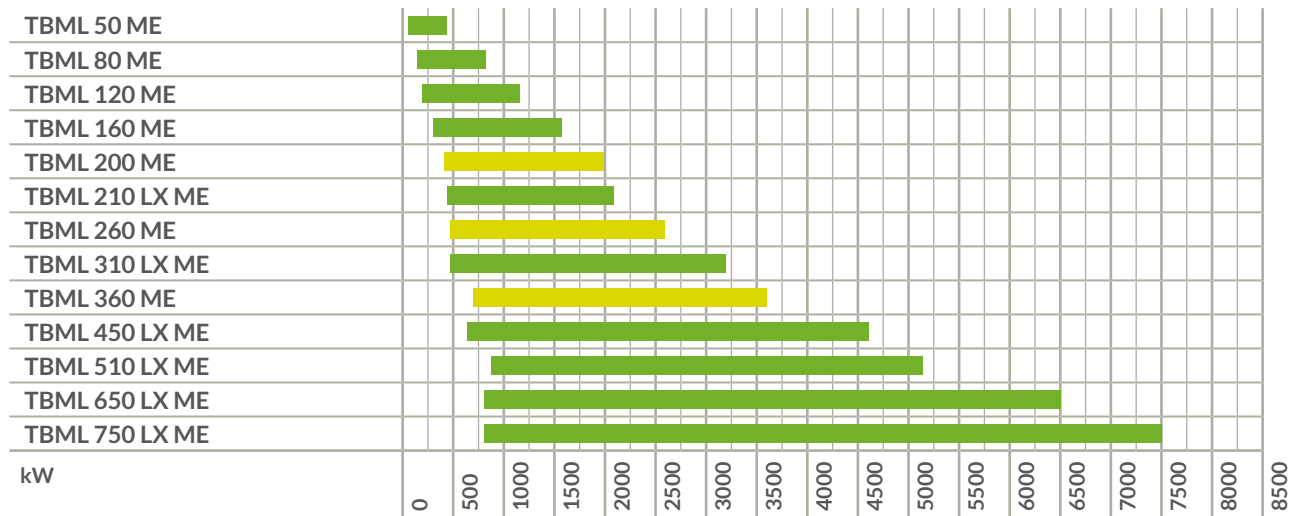


## TWO-STAGE PROGRESSIVE DUAL FUEL BURNERS - gas/light oil

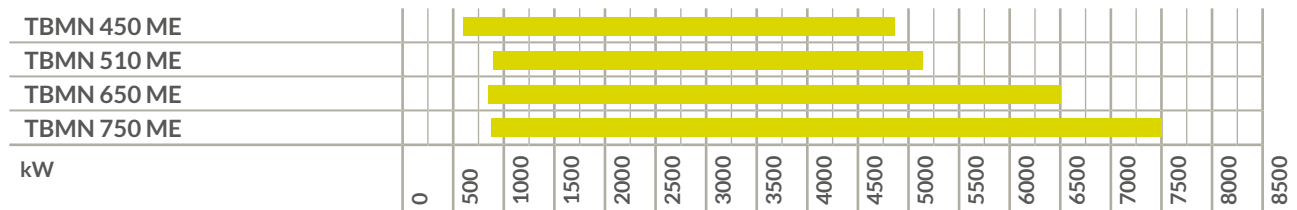




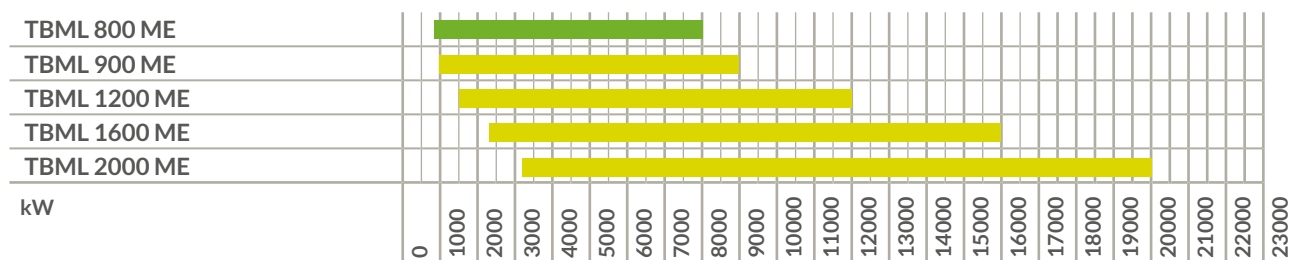
### MODULATING DUAL FUEL BURNERS - gas/light oil



### MODULATING DUAL FUEL BURNERS - gas/heavy oil



### INDUSTRIAL DUAL FUEL BURNERS - gas/light oil





TBML 50 MC



TBML 50 ME



TBML 60 P

TBML 50 MC

TBML 50 ME

TBML 60 P

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:

two-stage

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil

mechanical two-stage progressive/two-stage

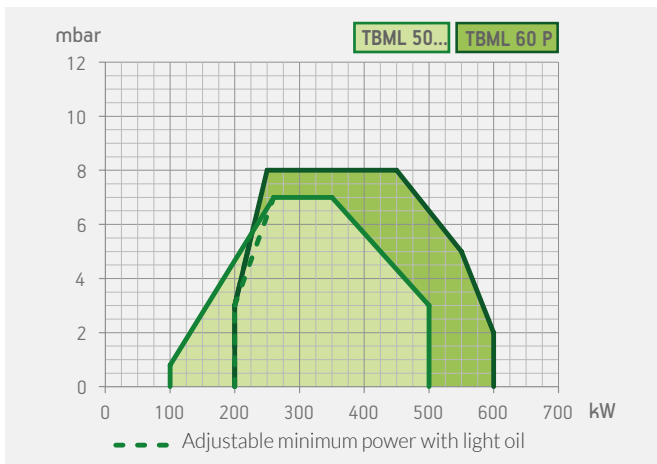
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil

electronic modulation/two-stage

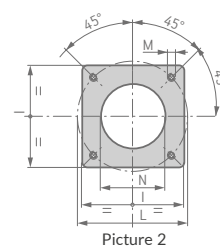
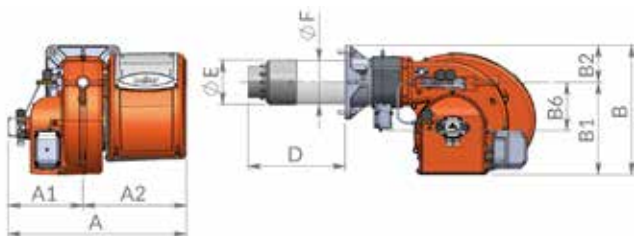
	TBML 50 MC	TBML 50 ME	TBML 60 P
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●	
Modulation ratio:	1:5	1:5	
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter			●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●	
Possibility to add gas train with valve tightness control			●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	down	down	down
Electric motor for pump drive			●
Pump connected to fan motor through electromagnetic clutch	●	●	
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●	●
Fuel switch device:	manual	manual	manual
Flame detection by UV photocell	●	●	●
Control panel with display diagram for working mode with indication lights	●		
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	
Electric protection rating:	IP40	IP40	IP40

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBML 50 MC	1130	900	540	68
TBML 50 ME	1130	900	540	57
TBML 60 P	1070	800	610	62



Flange dimensions and boiler drilling template.

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 50 MC	770	400	370	485	325	160	160	1020	170 ÷ 340	156	152	260	225 ÷ 300	M12	160	2
TBML 50 ME	640	270	370	485	325	160	160	1020	170 ÷ 340	156	152	260	225 ÷ 300	M12	160	2
TBML 60 P	680	400	280	485	325	160	160	980	140 ÷ 350	150	152	260	225 ÷ 300	M12	160	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	see page 188	100(200)* ÷ 500	<b>TBML 50 MC</b>	<b>56450010</b>	1,5	3N AC 50Hz 400V	0,65	4)
	see page 188	100(200)* ÷ 500	<b>TBML 50 ME</b>	<b>56460010</b>	1,5	3N AC 50Hz 400V	0,65	4)
	class 2	200÷600	<b>TBML 60 P</b>	<b>56470010</b>	1,5	3N AC 50Hz 400V	0,65+0,10	4)
Frequency 60 Hz								
	see page 188	100(200)* ÷ 500	<b>TBML 50 MC</b>	<b>56455410</b>	1,5	3N AC 60Hz 380V	0,65	4)
	see page 188	100(200)* ÷ 500	<b>TBML 50 ME</b>	<b>56465410</b>	1,5	3N AC 60Hz 380V	0,65	4)
	class 2	200÷600	<b>TBML 60 P</b>	<b>56475410</b>	1,5	3N AC 60Hz 380V	0,65+0,10	4)

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 50 ME: modulating probe for LCM 100 (see page 324)	

## MODULATING MODE

DESCRIPTION	PART NO.
TBML 50 MC: modulation kit (see page 324)	98000057
TBML 50 MC: modulating probe (see page 324)	

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBML 60 P: line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980053

## DUAL FUEL BURNERS ACCESSORIES

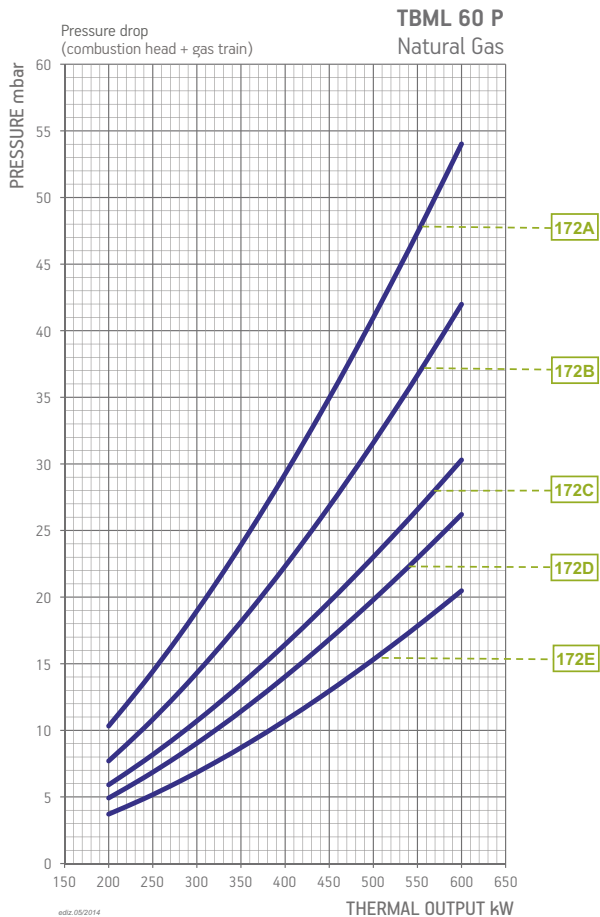
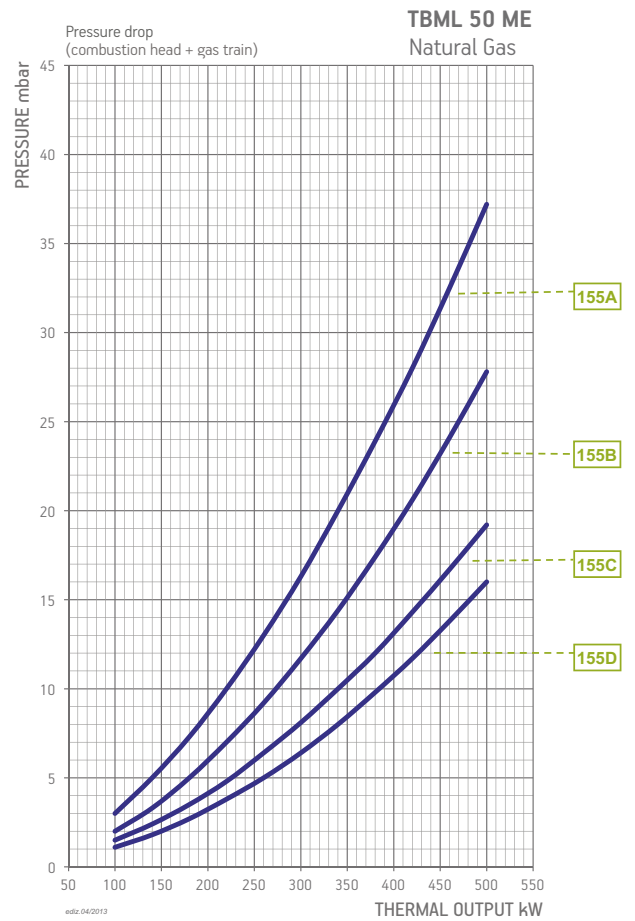
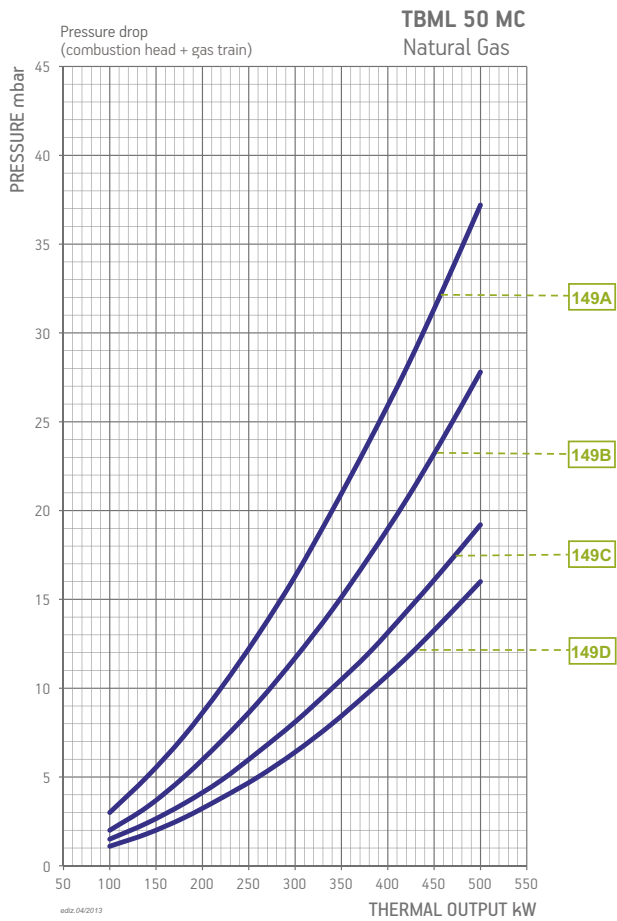
TBML 50 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 50 ME: line filter, flex hoses, nozzles, boiler couplin kit.
TBML 60 P: flex hoses, nozzles, boiler coupling kit, plug for wiring.

## NOTE

4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 50 MC	Metano	149A	CE/EXP	360	CTV	19990580	Included	96000004	Included	D7	
		149B	CE/EXP	360	CTV	19990581	Included	96000004	Included	D7	
		149C	CE/EXP	360	CTV	19990582	Included	-	Included	D7	
		149D	CE/EXP	360	CTV	19990583	Included	96000013	Included	D7	
TBML 50 ME	Metano	155A	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	
		155B	CE/EXP	360	CTV	19990557	Included	96000004	Included	D2	
		155C	CE/EXP	360	CTV	19990558	Included	-	Included	D2	
			CE/EXP	360	CTV	19990559	Included	96000013	Included	D2	
TBML 60 P	Metano	172A	CE/EXP	360	CTV	19990546	Included	96000004	-	B7	
						19990546	Included	96000004	98000101	B7	12)
		172B	CE/EXP	360	CTV	19990547	Included	96000004	-	B7	
						19990547	Included	96000004	98000101	B7	12)
		172C	CE/EXP	360	CTV	19990548	Included	-	-	B7	
						19990548	Included	-	98000101	B7	12)
		172D	CE/EXP	360	CTV	19990549	Included	96000013	-	B7	
						19990549	Included	96000013	98000101	B7	12)
172E	CE/EXP	500	CTV	19990550	Included	96000013	-	B7			
				19990550	Included	96000013	98000102	B7	12)		
172E	CE/EXP	500	CTV	19990720	Included	96000013	-	D5			
				19990720	Included	96000013	98000102	D5	12)		

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBML 50 MC	GPL	CE/EXP	360	CTV	19990580	Included	96000004	Included	D7	
TBML 50 ME	GPL	CE/EXP	360	CTV	19990556	Included	96000004	Included	D2	
TBML 60 P	GPL	CE/EXP	360	CTV	19990547	Included	96000004	-	B7	
					19990547	Included	96000004	98000101	B7	12)

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.





TBML 80 MC



TBML 80 ME



TBML 90 P

TBML 80 MC

TBML 80 ME

TBML 90 P

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:

two-stage

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil

mechanical two-stage progressive/two-stage

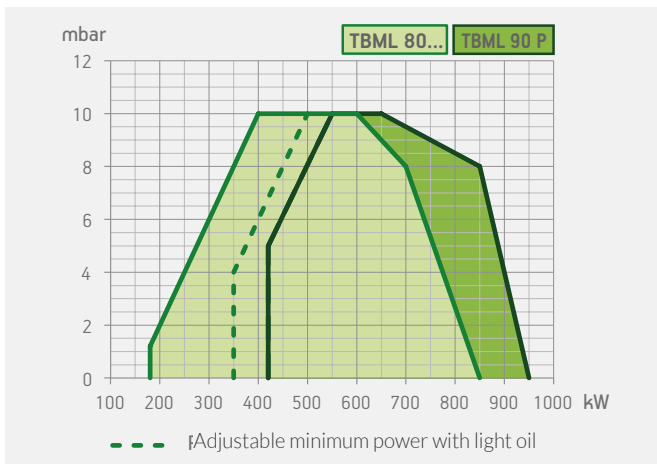
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil

electronic modulation/two-stage

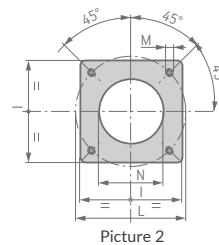
	TBML 80 MC	TBML 80 ME	TBML 90 P
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●	
Modulation ratio:	1:4	1:4	
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up	up
Pump connected to fan motor through electromagnetic clutch	●	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●	●
Fuel switch device:	manual	manual	manual
Flame detection by UV photocell	●	●	●
Control panel with display diagram for working mode with indication lights	●		●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●	
Electric protection rating:	IP40	IP40	IP40

### LEGEND:

○ Optional; ● As standard

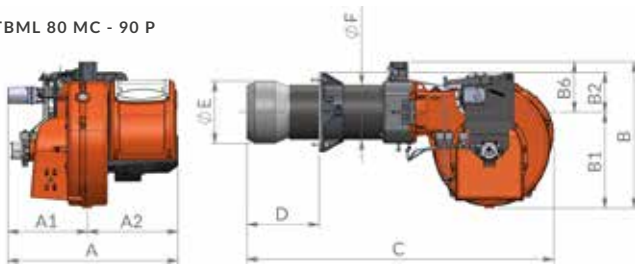


Model	Size of packaging			Weight kg
	L	P	H	
TBML 80 MC	1070	800	700	88
TBML 80 ME	1070	800	700	88
TBML 90 P	1070	800	700	87

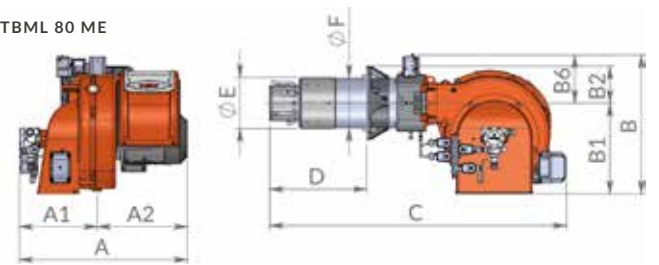


Flange dimensions and boiler drilling template.

TBML 80 MC - 90 P



TBML 80 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 80 MC	700	330	370	380	380	200	200	1230	270 ÷ 440	180	178	280	250 ÷ 325	M12	190	2
TBML 80 ME	700	330	370	380	380	200	200	1250	270 ÷ 440	180	178	280	250 ÷ 325	M12	190	2
TBML 90 P	700	330	370	380	380	200	200	1250	175 ÷ 400	180	178	280	250 ÷ 325	M12	190	2

Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
see page 192	180(350)* ÷ 850	<b>TBML 80 MC</b>	<b>56490010</b>	1,5	3N AC 50Hz 400V	1,1	4)
see page 192	180(350)* ÷ 850	<b>TBML 80 ME</b>	<b>56500010</b>	1,5	3N AC 50Hz 400V	1,1	4)
class 2	420÷950	<b>TBML 90 P</b>	<b>56510010</b>	1,5	3N AC 50Hz 400V	1,1	4)
Frequency 60 Hz							
see page 192	180(350)* ÷ 850	<b>TBML 80 MC</b>	<b>56495410</b>	1,5	3N AC 60Hz 380V	1,1	4)
see page 192	180(350)* ÷ 850	<b>TBML 80 ME</b>	<b>56505410</b>	1,5	3N AC 60Hz 380V	1,1	4)
class 2	420÷950	<b>TBML 90 P</b>	<b>56515410</b>	1,5	3N AC 60Hz 380V	1,1	4)

## TO COMPLETE THE BURNER

DESCRIPTION
TBML 80 ME: modulating probe for LCM 100 (see page 324)

## MODULATING MODE

DESCRIPTION	PART NO.
TBML 80 MC: modulation kit (see page 324)	98000057
TBML 80 MC: modulating probe (see page 324)	

## NOTE

4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

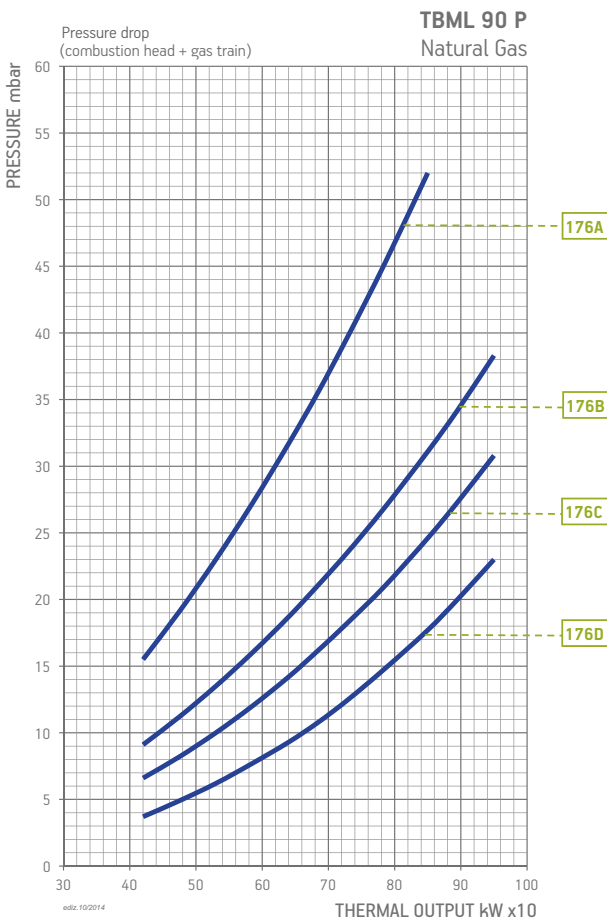
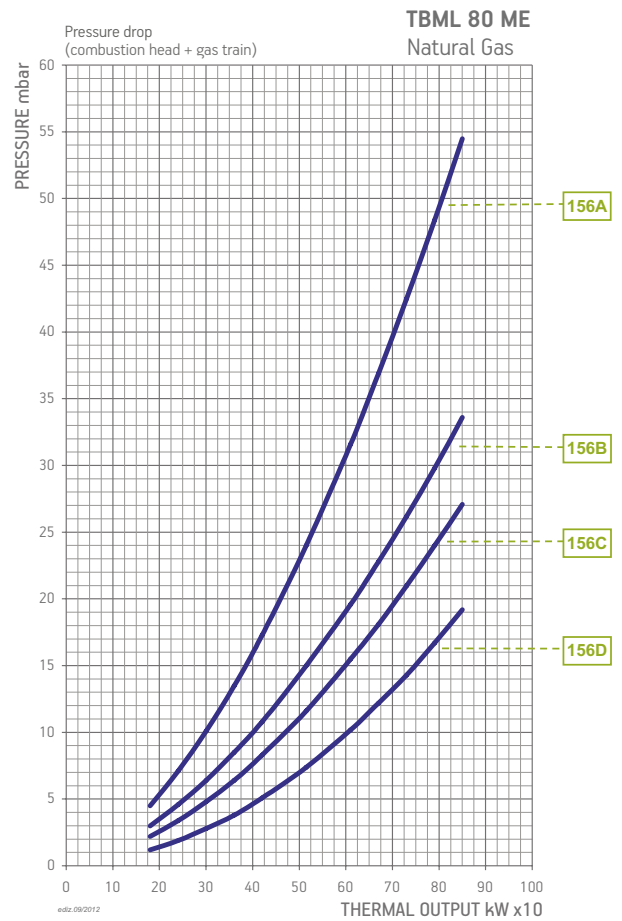
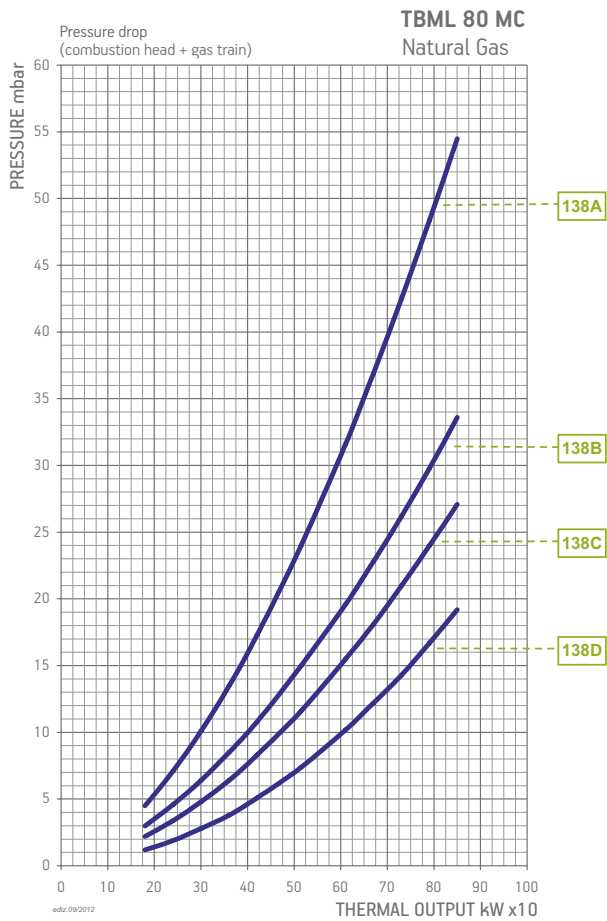
DESCRIPTION	PART NO.
TBML 90 P: line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980053

## DUAL FUEL BURNERS ACCESSORIES

TBML 80 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 80 ME: line filter, flex hoses, nozzles, boiler coupling kit.
TBML 90 P: flex hoses, nozzles, boiler coupling kit, plug for wiring.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 80 MC	Metano	138A	CE/EXP	360	CTV	19990581	Included	96000032	Included	D7	
		138B	CE/EXP	360	CTV	19990582	Included	96000007	Included	D7	
		138C	CE/EXP	360	CTV	19990583	Included	-	Included	D7	
		138D	CE/EXP	360	CTV	19990584	Included	-	Included	D7	
TBML 80 ME	Metano	156A	CE/EXP	360	CTV	19990557	Included	96000032	Included	D2	
		156B	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		156C	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		156D	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
CE/EXP	500		CTV	19990725	Included	-	Included	D4			
TBML 90 P	Metano	176A	CE/EXP	360	CTV	19990547	Included	96000032	-	B7	
						19990547	Included	96000032	98000101	B7	12)
		176B	CE/EXP	360	CTV	19990548	Included	96000007	-	B7	
						19990548	Included	96000007	98000101	B7	12)
		176C	CE/EXP	360	CTV	19990549	Included	-	-	B7	
						19990549	Included	-	98000101	B7	12)
		176D	CE/EXP	500	CTV	19990550	Included	-	-	B7	
						19990550	Included	-	98000102	B7	12)
19990720	Included					-	-	D5			
19990720	Included					-	98000102	D5	12)		

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBML 80 MC	GPL	CE/EXP	360	CTV	19990581	Included	96000032	Included	D7	
TBML 80 ME	GPL	CE/EXP	360	CTV	19990557	Included	96000032	Included	D2	
TBML 90 P	GPL	CE/EXP	360	CTV	19990547	Included	96000032	-	B7	
					19990547	Included	96000032	98000101	B7	12)

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.



TBML 120 MC

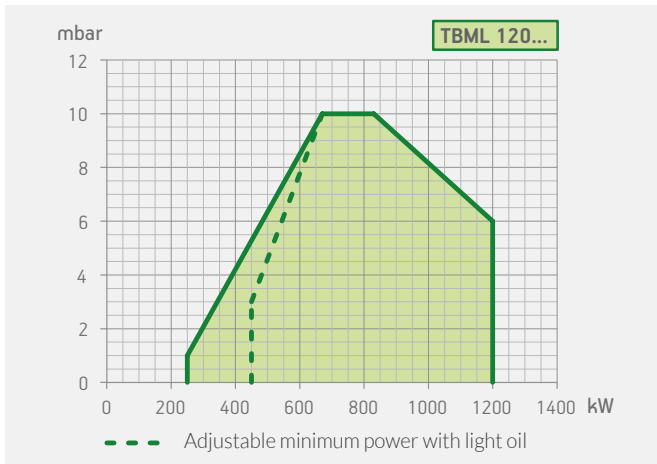


TBML 120 ME

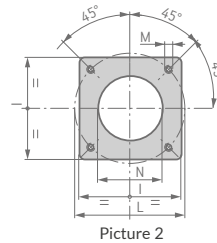
	TBML 120 MC	TBML 120 ME
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil</b>	<b>Mechanical two-stage progressive/two-stage</b>	
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil</b>	<b>Modulating electronic/two-stage</b>	
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:4	1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
High ventilation efficiency, low electrical input, low noise	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

### LEGEND:

○ Optional; ● As standard

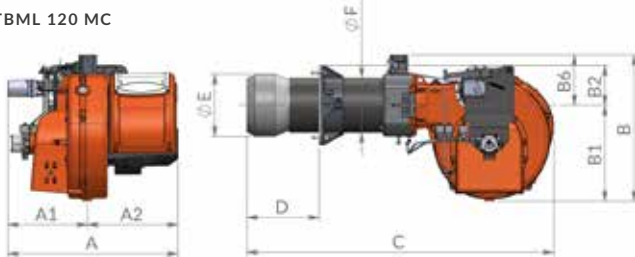


Model	Size of packaging			Weight kg
	L	P	H	
TBML 120 MC	1070	800	700	95
TBML 120 ME	1070	800	700	97

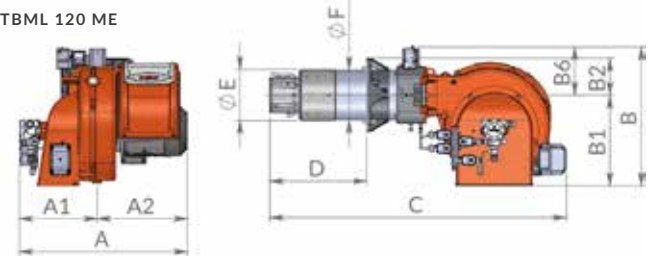


Flange dimensions and boiler drilling template.

TBML 120 MC



TBML 120 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 120 MC	700	330	370	380	380	200	200	1250	285 ÷ 450	224	219	320	280 ÷ 370	M12	235	2
TBML 120 ME	700	330	370	380	380	200	200	1250	285 ÷ 450	224	219	320	280 ÷ 370	M12	235	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	see page 196	250(450)* ÷ 1200	<b>TBML 120 MC</b>	<b>56530010</b>	1,5	3N AC 50Hz 400V	1,5	4)
	see page 196	250(450)* ÷ 1200	<b>TBML 120 ME</b>	<b>56540010</b>	1,5	3N AC 50Hz 400V	1,5	4)
Frequency 60 Hz								
	see page 196	250(450)* ÷ 1200	<b>TBML 120 MC</b>	<b>56535410</b>	1,5	3N AC 60Hz 380V	1,5	4)
	see page 196	250(450)* ÷ 1200	<b>TBML 120 ME</b>	<b>56545410</b>	1,5	3N AC 60Hz 380V	1,5	4)

### TO COMPLETE THE BURNER

#### DESCRIPTION

TBML 120 ME: modulating probe for LCM 100 (see page 324)

### MODULATING MODE

#### DESCRIPTION

#### PART NO.

TBML 120 MC: modulation kit (see page 324)

98000057

TBML 120 MC: modulating probe (see page 324)

### ACCESSORIES AVAILABLE ON REQUEST

#### DESCRIPTION

#### PART NO.

Soundproof burner cover (see page 329)

97980053

### DUAL FUEL BURNERS ACCESSORIES

TBML 120 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.

TBML 120 ME: line filter, flex hoses, nozzles, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.

\*) Min thermal capacity with light oil operation.

Net calorific value:

Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.

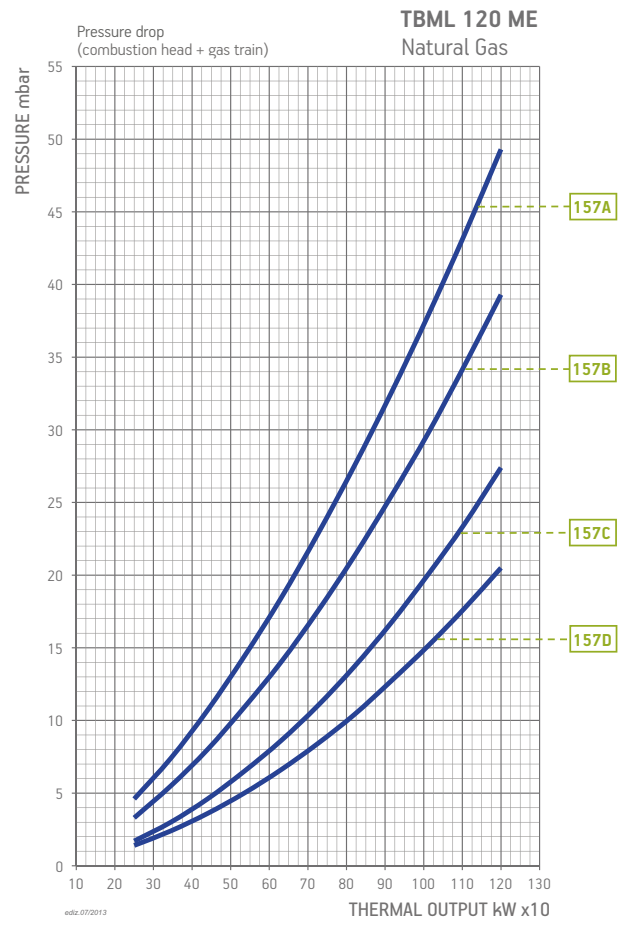
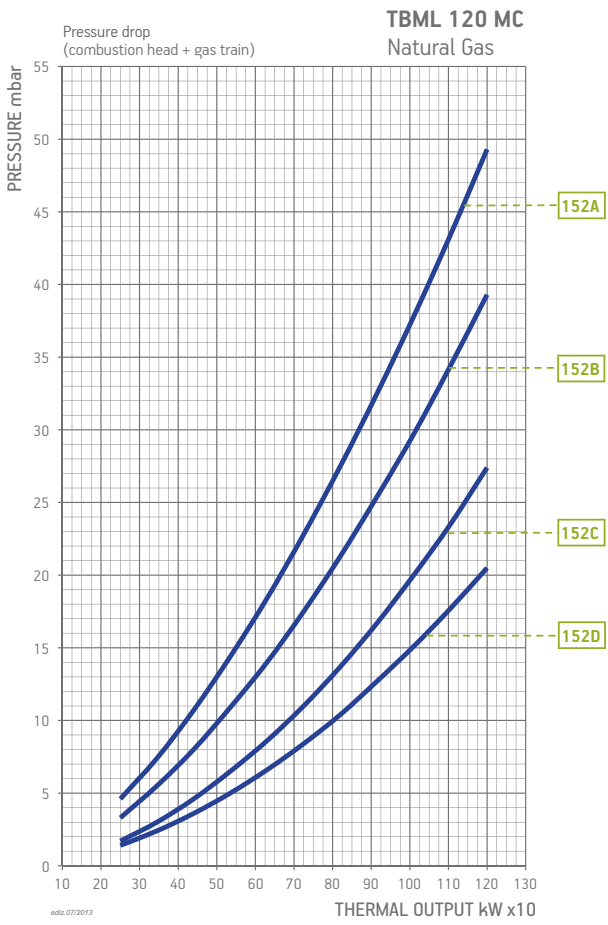
LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.

Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 120 MC	Metano	152A	CE/EXP	360	CTV	19990582	Included	96000007	Included	D7	
		152B	CE/EXP	360	CTV	19990583	Included	-	Included	D7	
		152C	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		152D	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
TBML 120 ME	Metano	157A	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		157B	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		157C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D5	
		157D	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBML 120 MC	GPL	CE/EXP	360	CTV	19990582	Included	96000007	Included	D7	
TBML 120 ME	GPL	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.





TBML 150 P



TBML 160 MC



TBML 160 ME

TBML 150 P

TBML 160 MC

TBML 160 ME

two-stage

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil

mechanical  
two-stage progres-  
sive/two-stage

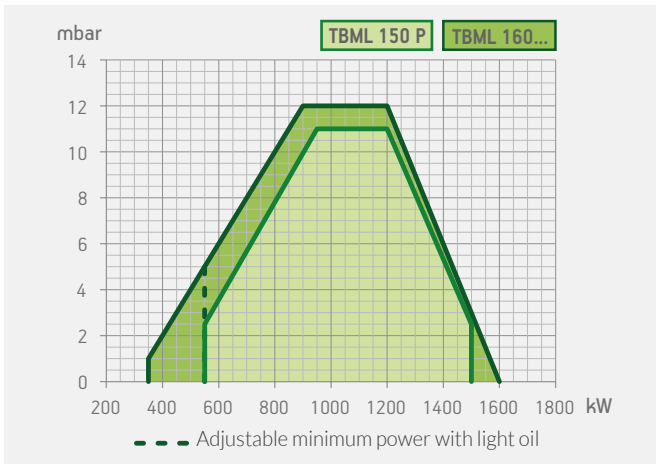
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil

electronic  
modulation/  
two-stage

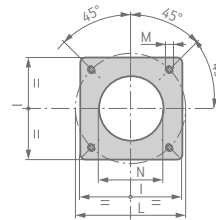
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel		○	●
Modulation ratio:		1:4	1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2	class 2
Adjusting the combustion head	●	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●	●
High ventilation efficiency, low electrical input, low noise	●	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●	●
Fail proof connectors for burner/gas train connection	●	●	●
Gas train outlet:	up	up	up
Pump connected to fan motor through electromagnetic clutch	●	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●	●
Fuel switch device:	manual	manual	manual
Flame detection by UV photocell	●	●	●
Control panel with display diagram for working mode with indication lights	●	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment			●
Electric protection rating:	IP40	IP40	IP40

### LEGEND:

○ Optional; ● As standard



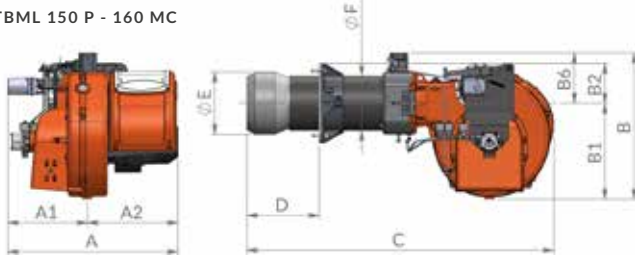
Model	Size of packaging			Weight kg
	L	P	H	
TBML 150 P	1070	800	700	90
TBML 160 MC	1070	800	700	105
TBML 160 ME	1070	800	700	105



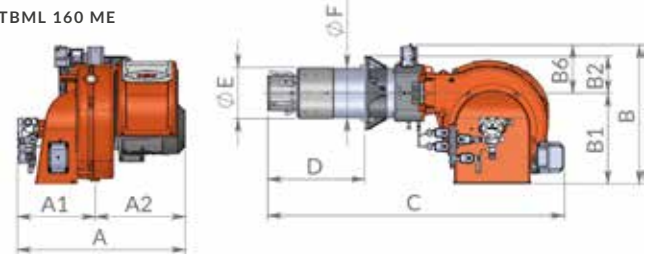
Flange dimensions and boiler drilling template.

Picture 2

TBML 150 P - 160 MC



TBML 160 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 150 P	700	330	370	580	380	200	200	1280	200 ÷ 450	224	219	320	280 ÷ 370	M12	235	2
TBML 160 MC	700	330	370	580	380	200	200	1250	285 ÷ 450	224	219	320	280 ÷ 370	M12	235	2
TBML 160 ME	700	330	370	580	380	200	200	1250	285 ÷ 450	224	219	320	280 ÷ 370	M12	235	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	550 ÷ 1500	<b>TBML 150 P</b>	<b>56550010</b>	1,5	3N AC 50Hz 400V	2,2	4)
	see page 200	350(550)* ÷ 1600	<b>TBML 160 MC</b>	<b>56570010</b>	1,5	3N AC 50Hz 400V	3,0	4)
	see page 200	350(550)* ÷ 1600	<b>TBML 160 ME</b>	<b>56580010</b>	1,5	3N AC 50Hz 400V	3,0	4)
Frequency 60 Hz								
	class 2	550 ÷ 1500	<b>TBML 150 P</b>	<b>56555410</b>	1,5	3N AC 60Hz 380V	2,6	4)
	see page 200	350(550)* ÷ 1600	<b>TBML 160 MC</b>	<b>56575410</b>	1,5	3N AC 60Hz 380V	3,5	4)
	see page 200	350(550)* ÷ 1600	<b>TBML 160 ME</b>	<b>56585410</b>	1,5	3N AC 60Hz 380V	3,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 160 ME: modulating probe for LCM 100 (see page 324)	

### MODULATING MODE

DESCRIPTION	PART NO.
TBML 160 MC: modulation kit (see page 324)	98000057
TBML 160 MC: modulating probe (see page 324)	

### NOTE

4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

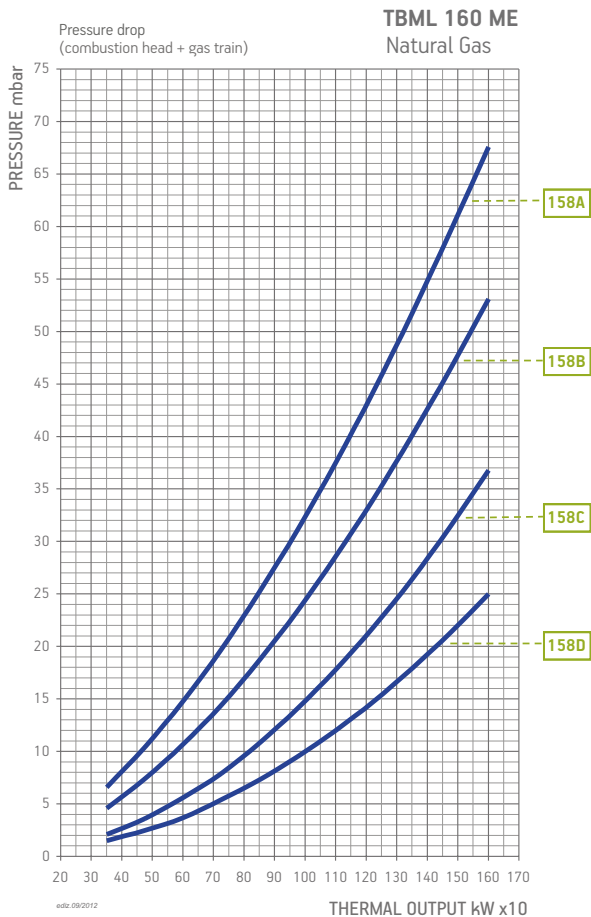
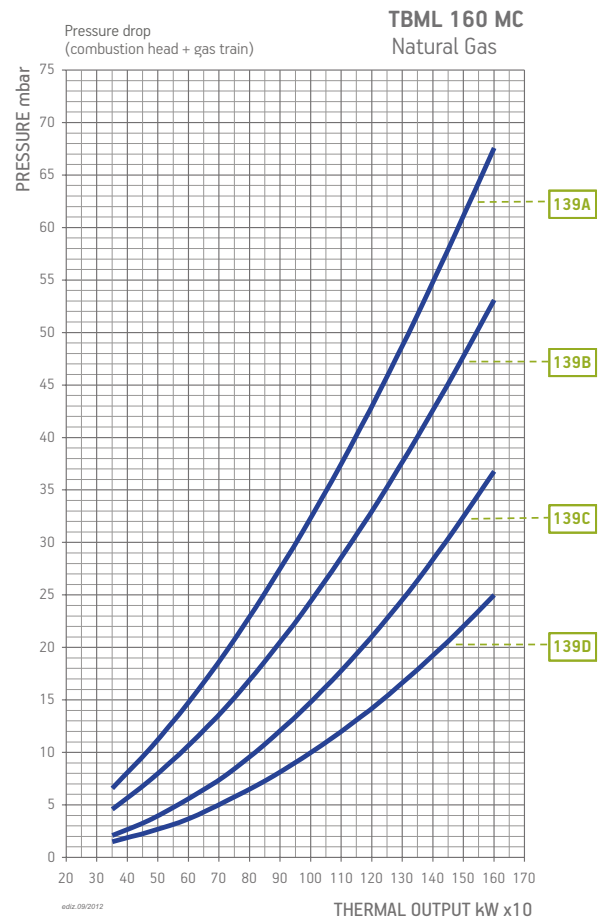
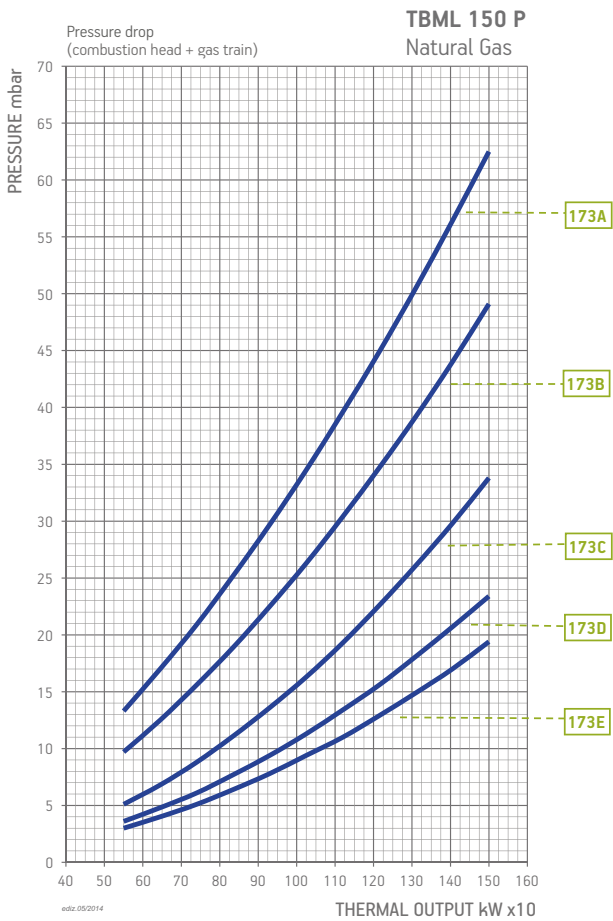
DESCRIPTION	PART NO.
TBML 150 P: line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980053

### DUAL FUEL BURNERS ACCESSORIES

TBML 150 P: flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 160 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 160 ME: line filter, flex hoses, nozzles, boiler coupling kit.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 150 P	Metano	173A	CE	360	CTV	19990548	Included	96000007	98000101	BE7	11)
			EXP	360	CTV	19990548	Included	96000007	-	BE7	
			CE	360	CTV	19990549	Included	-	98000101	BE7	11)
			EXP	360	CTV	19990549	Included	-	98000101	BE7	
		173B	CE	500	CTV	19990550	Included	-	98000102	B7	11)
			CE	500	CTV	19990720	Included	-	98000102	D5	11)
			EXP	500	CTV	19990550	Included	-	-	BE7	
			EXP	500	CTV	19990720	Included	-	-	D5	
		173D	CE	500	CTV	19990563	Included	-	98000101	BE7	11)
			CE	500	CTV	19990721	Included	-	98000101	D5	11)
			EXP	500	CTV	19990563	Included	-	-	BE7	
			EXP	500	CTV	19990721	Included	-	-	D5	
			EXP	500	CTV	19990721	Included	-	98000101	D5	
			EXP	500	CTV	19990721	Included	-	98000101	D5	
			EXP	500	CTV	19990564	Included	-	98000101	BE7	11)
			EXP	500	CTV	19990722	Included	-	98000101	D5	11)
		173E	EXP	500	CTV	19990564	Included	-	-	BE7	
			EXP	500	CTV	19990564	Included	-	98000101	BE7	
			EXP	500	CTV	19990722	Included	-	-	D5	
			EXP	500	CTV	19990722	Included	-	98000101	D5	
TBML 160 MC	Metano	139A	CE/EXP	360	CTV	19990582	Included	96000007	Included	D7	
		139B	CE/EXP	360	CTV	19990583	Included	-	Included	D7	
		139C	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		139D	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
TBML 160 ME	Metano	158A	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	
		158B	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		158C	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D2	
		158D	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBML 150 P	GPL	CE	360	CTV	19990548	Included	96000007	98000101	BE7	11)
		EXP	360	CTV	19990548	Included	96000007	-	BE7	
TBML 160 MC	GPL	CE/EXP	360	CTV	19990582	Included	96000007	Included	D7	
TBML 160 ME	GPL	CE/EXP	360	CTV	19990558	Included	96000007	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

11 The gas train must be always completed with the valve tightness control kit to comply with the EN676 regulations.

CTV Gas train with Valve Tightness Control.

\*\* Maximum gas inlet pressure at pressure regulator.



TBML 200 MC

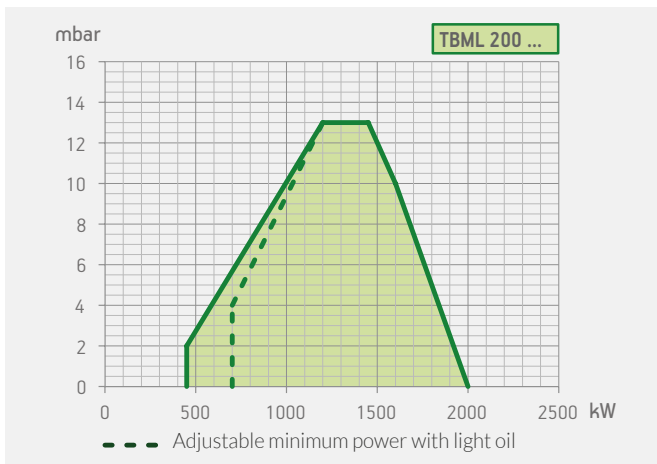


TBML 200 ME

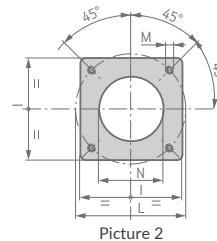
	TBML 200 MC	TBML 200 ME
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil</b>	mechanical two-stage progressive/two-stage	
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil</b>		modulating electronic/two-stage
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:4	1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
High ventilation efficiency, low electrical input, low noise	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Combustion air intake designed to achieve optimum linearity of the air gate opening	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

### LEGEND:

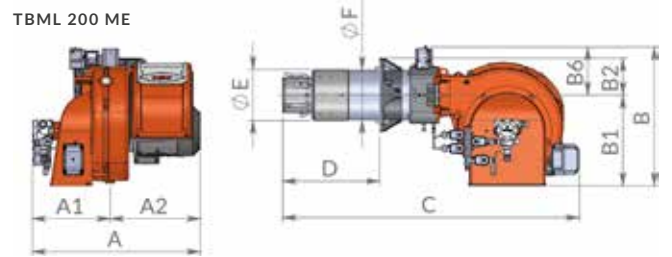
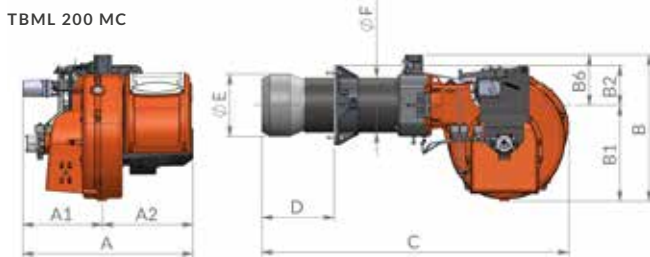
○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBML 200 MC	1070	800	700	103
TBML 200 ME	1070	800	700	108



Flange dimensions and boiler drilling template.



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 200 MC	700	330	370	580	380	200	200	1270	300 ÷ 470	250	219	320	300 ÷ 370	M12	255	2
TBML 200 ME	700	330	370	580	380	200	200	1270	300 ÷ 470	250	219	320	300 ÷ 370	M12	255	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	450(700)* ÷ 2000	<b>TBML 200 MC</b>	<b>56610010</b>	1,5	3N AC 50Hz 400V	3,0	4)
	class 2	450(700)* ÷ 2000	<b>TBML 200 ME</b>	<b>56620010</b>	1,5	3N AC 50Hz 400V	3,0	4)
Frequency 60 Hz								
	class 2	450(700)* ÷ 2000	<b>TBML 200 MC</b>	<b>56615410</b>	1,5	3N AC 60Hz 380V	3,5	4)
	class 2	450(700)* ÷ 2000	<b>TBML 200 ME</b>	<b>56625410</b>	1,5	3N AC 60Hz 380V	3,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 200 ME: modulating probe for LCM 100 (see page 324)	

### MODULATING MODE

DESCRIPTION	PART NO.
TBML 200 MC: modulation kit (see page 324)	98000057
TBML 200 MC: modulating probe (see page 324)	

### NOTE

4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

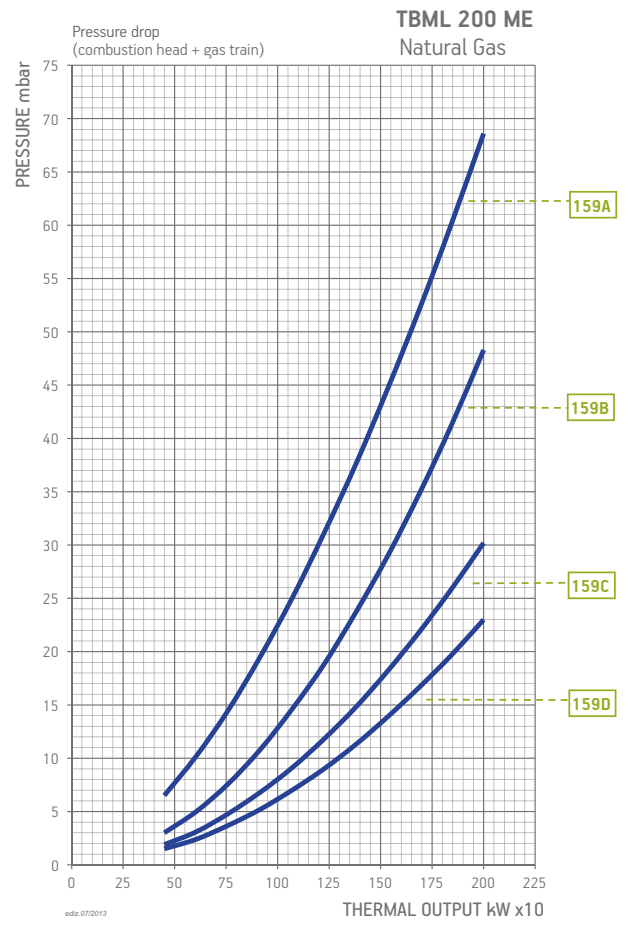
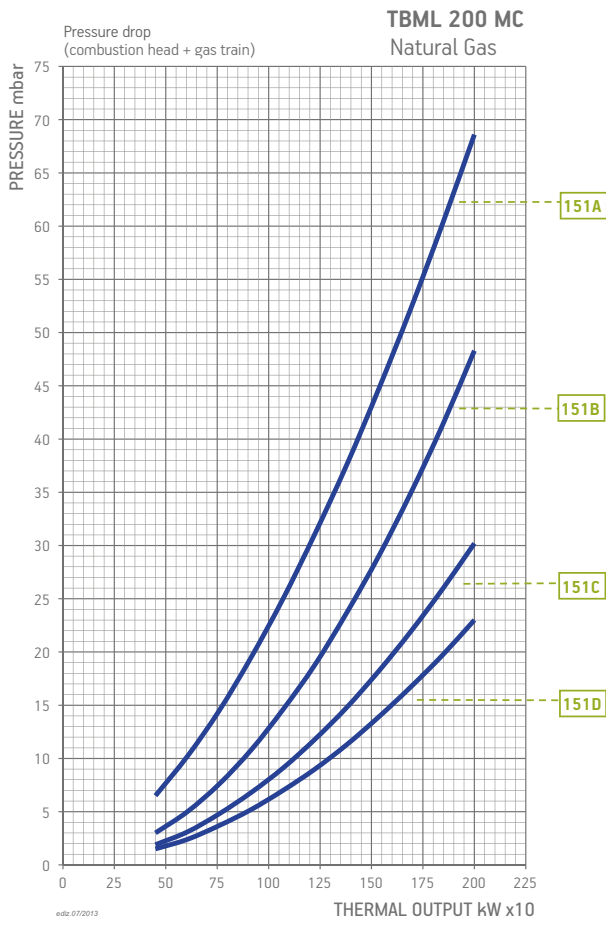
DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980053

### DUAL FUEL GAS BURNERS ACCESSORIES

TBML 200 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 200 ME: line filter, flex hoses, nozzles, boiler coupling kit.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 200 MC	Metano	151A	CE/EXP	360	CTV	19990583	Included	-	Included	D7	
		151B	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		151C	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
		151D	CE/EXP	500	CTV	19990586	Included	-	Included	D7	
TBML 200 ME	Metano	159A	CE/EXP	360	CTV	19990559	Included	-	Included	D2	
		159B	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		159C	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	
		159D	CE/EXP	500	CTV	19990526	Included	-	Included	D2	
		CE/EXP	500	CTV	19990727	Included	-	Included	D4		

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
					Part no.	Part no.	Part no.	Part no.		
TBML 200 MC	GPL	CE/EXP	360	CTV	19990583	Included	-	Included	D7	
TBML 200 ME	GPL	CE/EXP	360	CTV	19990559	Included	-	Included	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.





TBML 210 LX MC



TBML 210 LX ME

DUAL FUEL  
GAS/LIGHT OIL BURNERS

### TBML 210 LX MC

### TBML 210 LX ME

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil

mechanical two-stage progressive/two-stage

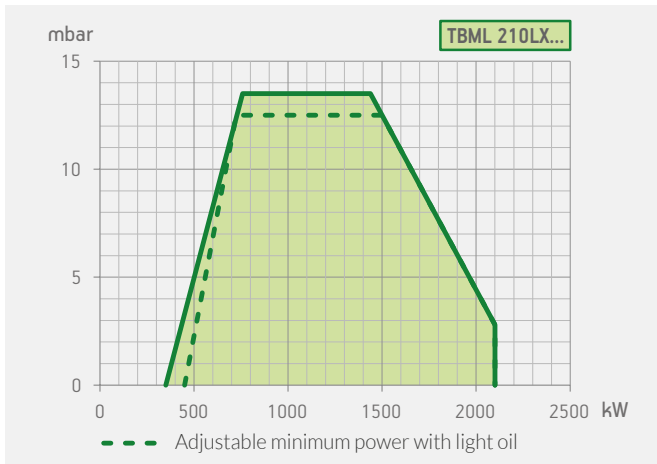
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil

modulating electronic/two-stage

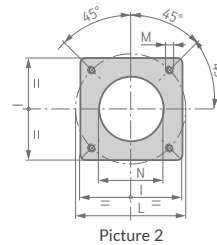
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:4	1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

#### LEGEND:

○ Optional; ● As standard

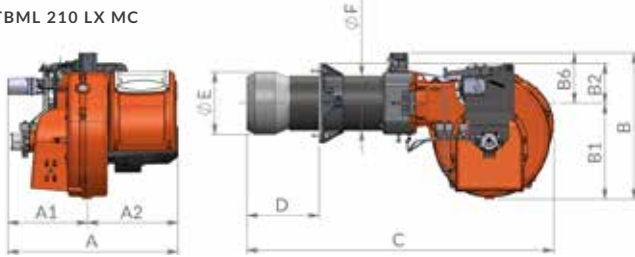


Model	Size of packaging			Weight kg
	L	P	H	
TBML 210 LX MC	1070	870	720	130
TBML 210 LX ME	1070	870	720	129

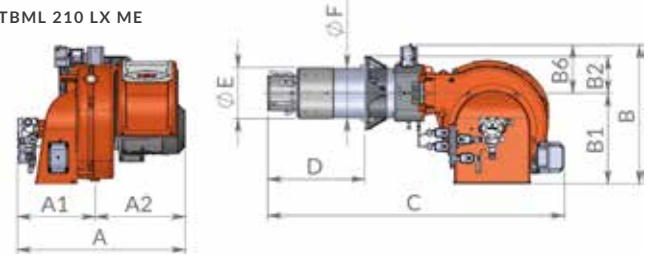


Flange dimensions and boiler drilling template.

TBML 210 LX MC



TBML 210 LX ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 210 LX MC	770	350	420	600	400	200	200	1300	280 - 450	224	219	320	280	M12	239	2
TBML 210 LX ME	770	350	420	600	400	200	200	1300	280 - 450	224	219	320	280	M12	239	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	see page 208	450(550)* ÷ 2100	<b>TBML 210 LX MC</b>	<b>56730010</b>	1,5	3N AC 50Hz 400V	5,5	4)
	see page 214	450(550)* ÷ 2100	<b>TBML 210 LX ME</b>	<b>56740010</b>	1,5	3N AC 50Hz 400V	5,5	4)
Frequency 60 Hz								
	see page 214	450(550)* ÷ 2100	<b>TBML 210 LX MC</b>	<b>56735410</b>	1,5	3N AC 60Hz 380V	7,5	4)
	see page 214	450(550)* ÷ 2100	<b>TBML 210 LX ME</b>	<b>56745410</b>	1,5	3N AC 60Hz 380V	7,5	4)

## TO COMPLETE THE BURNER

### DESCRIPTION

TBML 200 ME: modulating probe for LCM 100 (see page 324)

## MODULATING MODE

### DESCRIPTION

### PART NO.

TBML 200 MC: modulation kit (see page 324)

98000057

TBML 200 MC: modulating probe (see page 324)

## ACCESSORIES AVAILABLE ON REQUEST

### DESCRIPTION

### PART NO.

Soundproof burner cover (see page 329)

97980053

## DUAL FUEL GAS BURNERS ACCESSORIES

TBML 200 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.

TBML 200 ME: line filter, flex hoses, nozzles, boiler coupling kit.

## NOTE

4 Equipped with air closure device.

\*) Min thermal capacity with light oil operation.

Net calorific value:

Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.

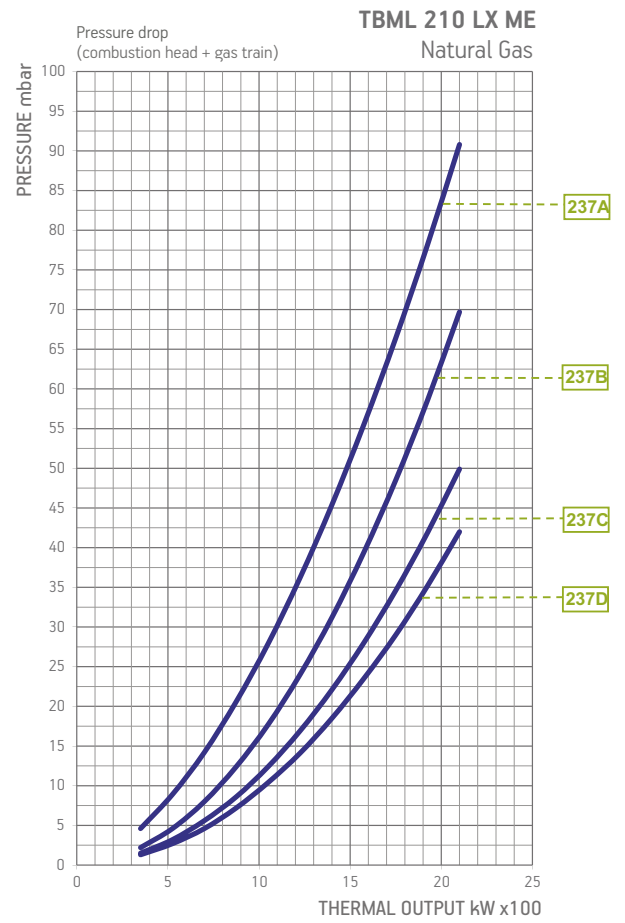
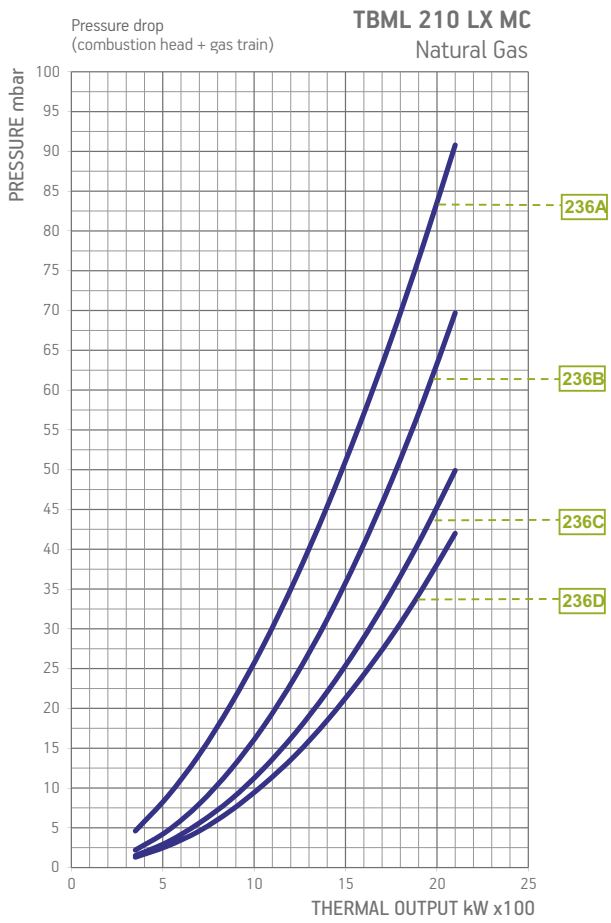
LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.

Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max **	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 210 LX MC	Metano	236A	CE/EXP	360	CTV	19990624	Included	-	Included	D7	
		236B	CE/EXP	500	CTV	19990584	2"	-	Included	D7	
		236C	CE/EXP	500	CTV	19990585	DN65	-	Included	D7	
		236D	CE/EXP	500	CTV	19990586	DN80	-	Included	D7	
TBML 210 LX ME	Metano	237A	CE/EXP	360	CTV	19990562	Included	-	Included	D2	
		237B	CE/EXP	500	CTV	19990524	2"	-	Included	D2	
			CE/EXP	500	CTV	19990725	2"	-	Included	D4	
		237C	CE/EXP	500	CTV	19990525	DN65	-	Included	D2	
			CE/EXP	500	CTV	19990726	DN65	-	Included	D4	
		237D	CE/EXP	500	CTV	19990526	DN80	-	Included	D2	
CE/EXP	500		CTV	19990727	DN80	-	Included	D4			

Burner model	Gas type	Version	P.Max **	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit ugelli GPL	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBML 210 LX MC	LPG	CE/EXP	360	CTV	19990624	Included	-	Included	98000397	D7	
TBML 210 LX ME	LPG	CE/EXP	360	CTV	19990562	Included	-	Included	98000397	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

## NOTE

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.



TBML 260 MC



TBML 260 ME

### TBML 260 MC

### TBML 260 ME

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil.

mechanical  
two-stage progressive/  
two-stage

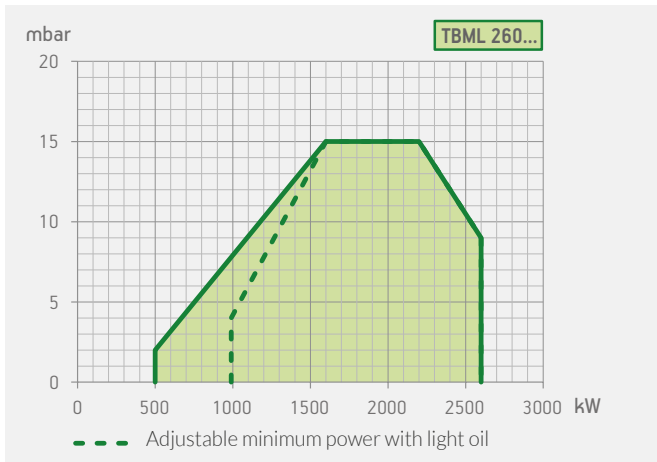
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil.

electronic  
modulation/two-stage

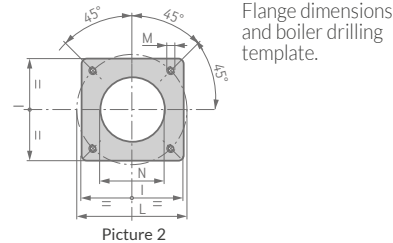
	TBML 260 MC	TBML 260 ME
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:5	1:5
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
High ventilation efficiency, low electrical input, low noise	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

#### LEGEND:

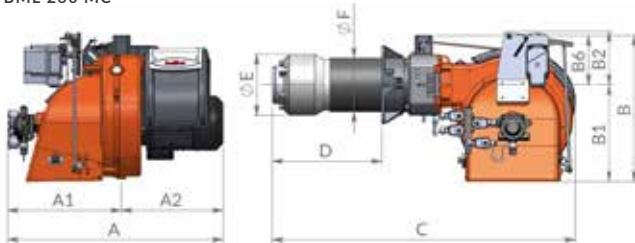
○ Optional; ● As standard



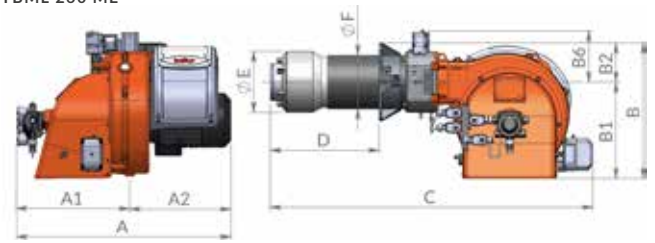
Model	Size of packaging			Weight kg
	L	P	H	
TBML 260 MC	1070	870	720	132
TBML 260 ME	1070	870	720	127



TBML 260 MC



TBML 260 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 260 MC	765	345	420	600	400	200	200	1280	300 ÷ 470	270	219	320	310 ÷ 370	M12	275	2
TBML 260 ME	765	345	420	600	400	200	200	1280	300 ÷ 470	270	219	320	310 ÷ 370	M12	275	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	500(900)* ÷ 2600	<b>TBML 260 MC</b>	<b>56640010</b>	1,5	3N AC 50Hz 400V	5,5	4)
	class 2	500(900)* ÷ 2600	<b>TBML 260 ME</b>	<b>56650010</b>	1,5	3N AC 50Hz 400V	5,5	4)
Frequency 60 Hz								
	class 2	500(900)* ÷ 2600	<b>TBML 260 MC</b>	<b>56645410</b>	1,5	3N AC 60Hz 380V	7,5	4)
	class 2	500(900)* ÷ 2600	<b>TBML 260 ME</b>	<b>56655410</b>	1,5	3N AC 60Hz 380V	7,5	4)

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 260 ME: modulating probe for LCM 100 (see page 324)	

## MODULATING MODE

DESCRIPTION	PART NO.
TBML 260 MC: modulation kit (see page 324)	98000057
TBML 260 MC: modulating probe (see page 324)	

## NOTE

4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural Gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBML 260 MC/260 ME: Soundproof burner cover (see page 329)	97980053

## DUAL FUEL BURNERS ACCESSORIES

TBML 260 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 260 ME: line filter, flex hoses, nozzles, boiler coupling kit.



TBML 310 LX MC



TBML 310 LX ME

### TBML 310 LX MC

### TBML 310 LX ME

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil.

mechanical  
two-stage progressive/  
two-stage

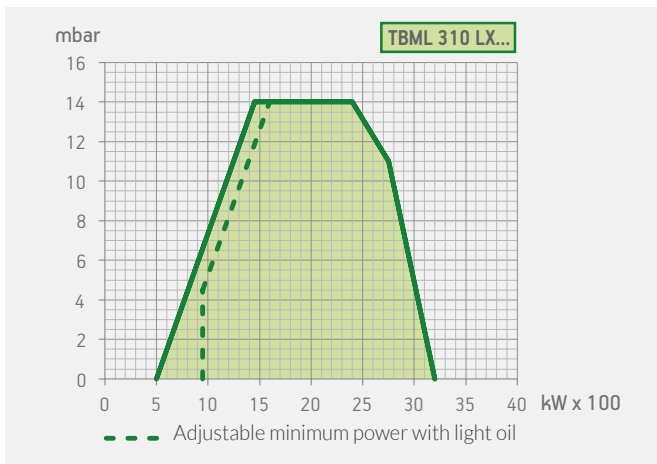
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil.

electronic modulation/  
two-stage

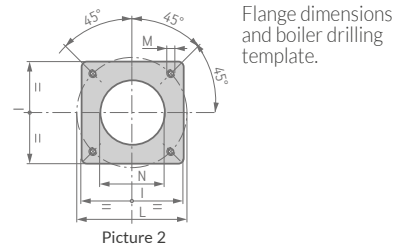
	TBML 310 LX MC	TBML 310 LX ME
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:6	1:6
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
High ventilation efficiency, low electrical input, low noise	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

#### LEGEND:

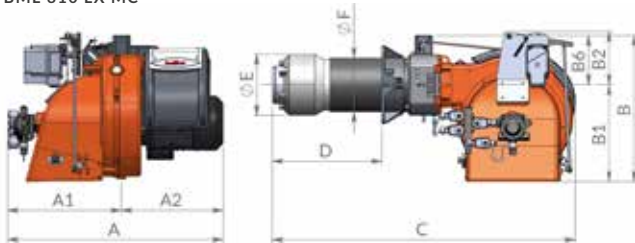
○ Optional; ● As standard



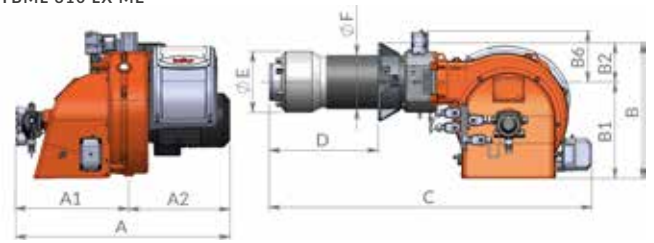
Model	Size of packaging			Weight kg
	L	P	H	
TBML 310 LX MC	1070	1070	810	168
TBML 310 LX ME	1070	1070	810	164



TBML 310 LX MC



TBML 310 LX ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M mm	N mm	Pic.
TBML 310 LX MC	880	465	415	620	400	220	200	1240	230 ÷ 440	250	219	320	310 ÷ 370	M12	255	2
TBML 310 LX ME	880	465	415	600	400	200	200	1330	230 ÷ 440	250	219	320	310 ÷ 370	M12	255	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	see page 214	500(950)* ÷ 3200	<b>TBML 310 LX MC</b>	<b>56880010</b>	1,5	3N AC 50Hz 400V	7,5	3) 4)
	see page 214	500(950)* ÷ 3200	<b>TBML 310 LX ME</b>	<b>56890010</b>	1,5	3N AC 50Hz 400V	7,5	3) 4)
Frequency 60 Hz								
	see page 214	500(950)* ÷ 3200	<b>TBML 310 LX MC</b>	<b>56885410</b>	1,5	3N AC 60Hz 380V	9,0	3) 4)
	see page 214	500(950)* ÷ 3200	<b>TBML 310 LX ME</b>	<b>56895410</b>	1,5	3N AC 60Hz 380V	9,0	3) 4)

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 310 LX ME: modulating probe for LCM 100 (see page 324)	

## MODULATING MODE

DESCRIPTION	PART NO.
TBML 310 LX MC: modulation kit (see page 324)	98000057
TBML 310 LX MC: modulating probe (see page 324)	

## NOTES

- 3 Soundproof lid on burner air intake.
  - 4 Equipped with automatic air closure device.
  - \*) Min thermal capacity with light oil operation.
- Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980057

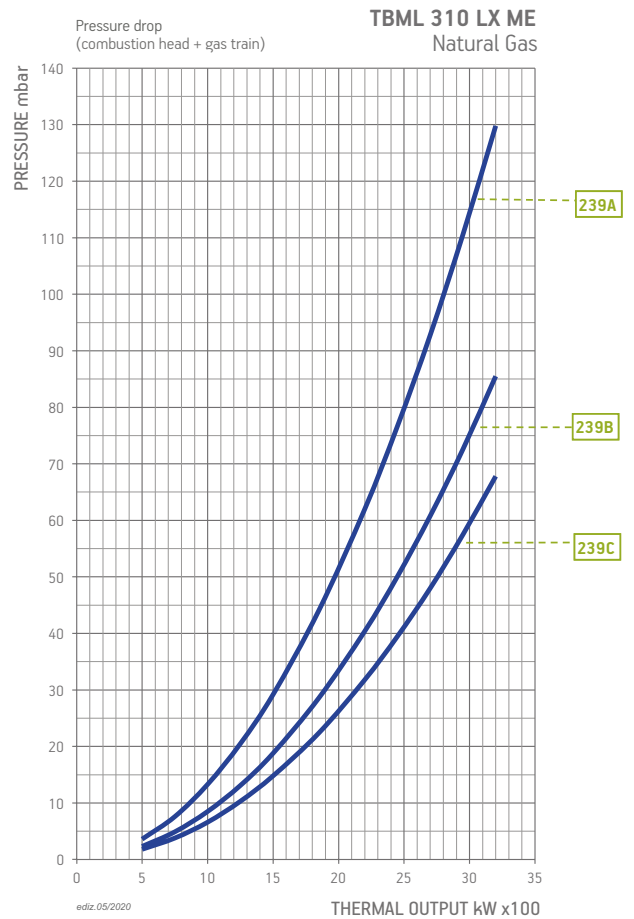
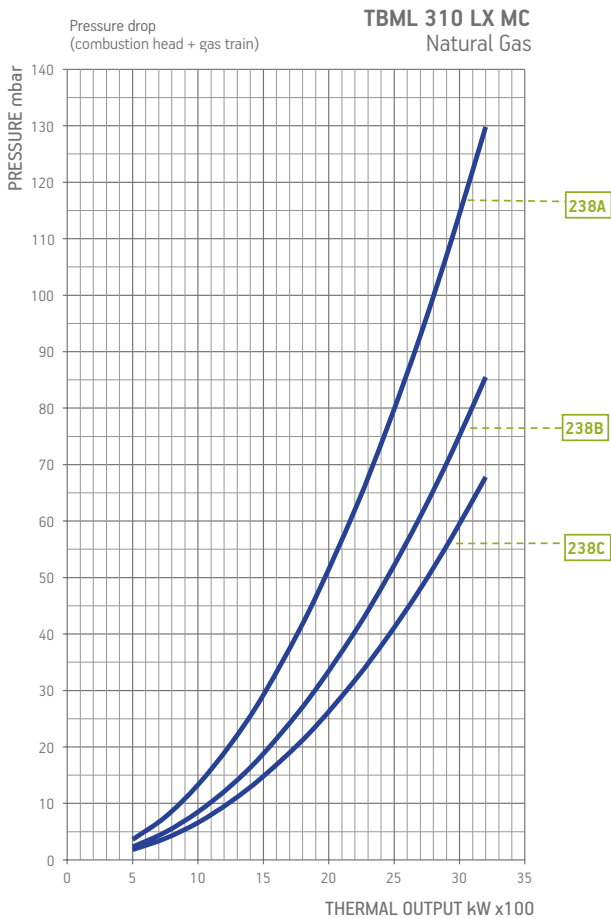
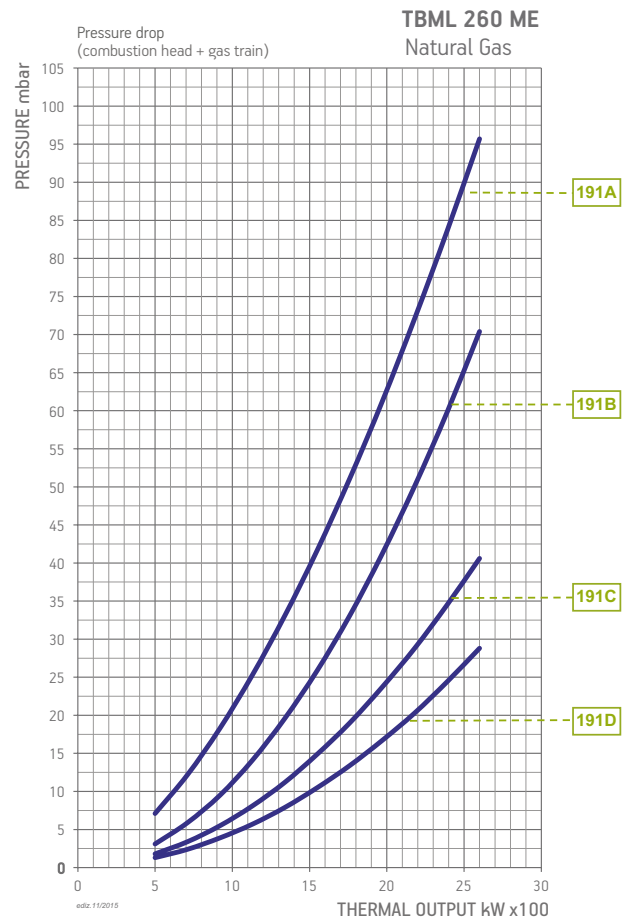
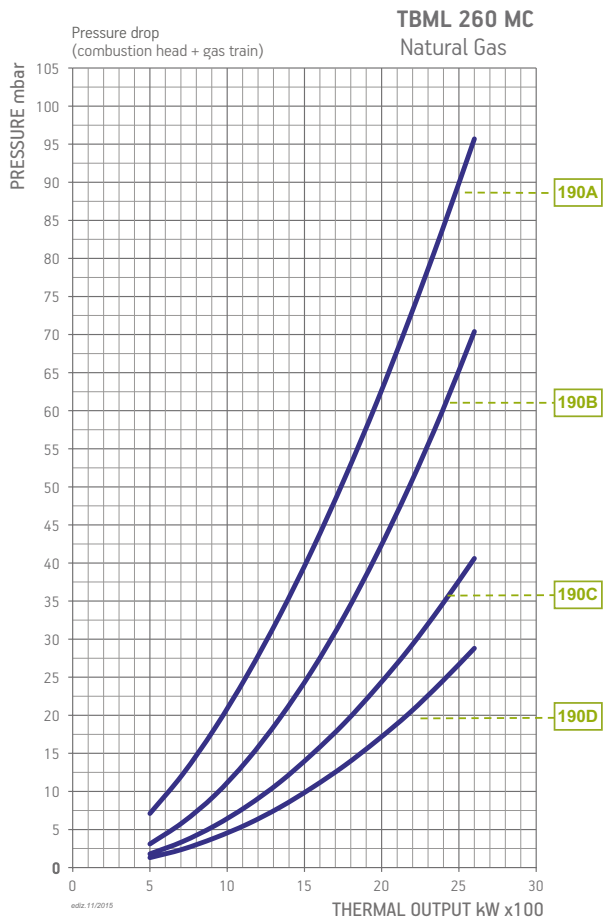
## DUAL FUEL GAS BURNERS ACCESSORIES

- TBML 310 LX MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
- TBML 310 LX ME: line filter, flex hoses, nozzles, boiler coupling kit.



## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max **	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 260 MC	Metano	190A	CE/EXP	360	CTV	19990624	Included	-	Included	D7	
		190B	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		190C	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
		190D	CE/EXP	500	CTV	19990586	Included	-	Included	D7	
TBML 260 ME	Metano	191A	CE/EXP	360	CTV	19990562	Included	-	Included	D2	
		191B	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		191C	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	
		191D	CE/EXP	500	CTV	19990526	Included	-	Included	D2	
TBML 310 LX MC	Metano	238A	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		238B	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
		238C	CE/EXP	500	CTV	19990586	Included	-	Included	D7	
TBML 310 LX ME	Metano	239A	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		239B	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	
		239C	CE/EXP	500	CTV	19990526	Included	-	Included	D2	
			CE/EXP	500	CTV	19990727	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max **	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit GPL	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBML 260 MC	GPL	CE/EXP	360	CTV	19990624	Included	-	Included	98000368	D7	
TBML 260 ME	GPL	CE/EXP	360	CTV	19990562	Included	-	Included	98000368	D2	
TBML 310 LX MC	GPL	CE/EXP	360	CTV	19990584	Included	-	Included		D7	
TBML 310 LX ME	GPL	CE/EXP	360	CTV	19990524	Included	-	Included		D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



TBML 360 MC



TBML 360 ME

### TBML 360 MC

### TBML 360 ME

Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive operation on gas, two-stage on light oil.

mechanical  
two-stage progressive/  
two-stage

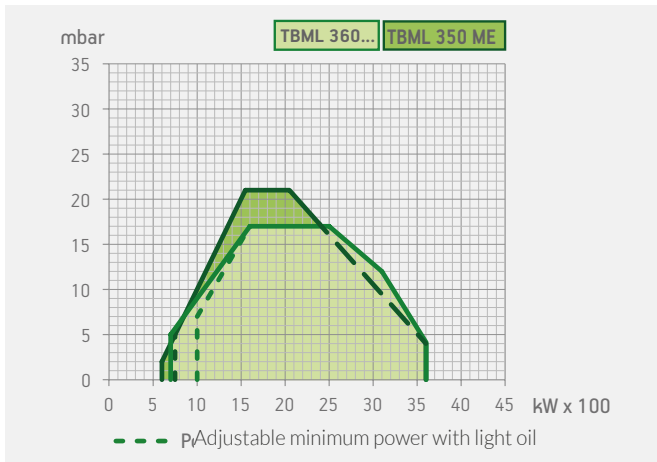
Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Modulating operation on gas, two-stage on light oil.

electronic  
modulation/two-stage

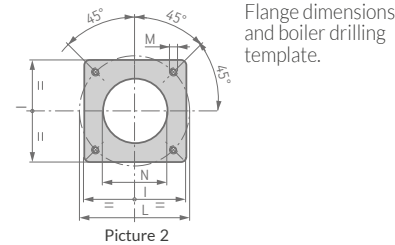
	TBML 360 MC	TBML 360 ME
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	1:5	1:5
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
High ventilation efficiency, low electrical input, low noise	●	●
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	up	up
Pump connected to fan motor through electromagnetic clutch	●	●
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel with display diagram for working mode with indication lights	●	
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment		●
Electric protection rating:	IP40	IP40

#### LEGEND:

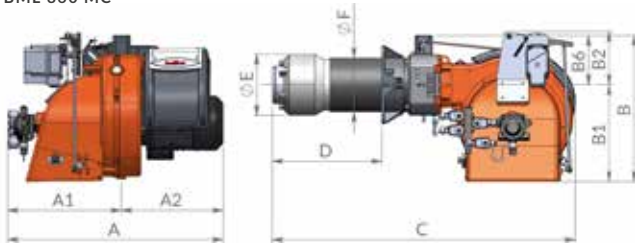
○ Optional; ● As standard



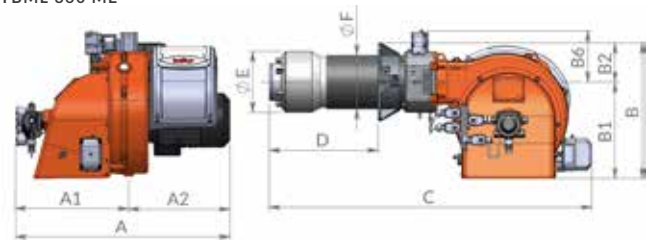
Model	Size of packaging			Weight kg
	L	P	H	
TBML 360 MC	1070	1070	810	168
TBML 360 ME	1070	1070	810	160



TBML 360 MC



TBML 360 ME



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 360 MC	910	490	420	600	400	200	200	1360	300 ÷ 470	270	219	320	310 ÷ 370	M12	275	2
TBML 360 ME	910	490	420	620	400	220	200	1280	300 ÷ 470	270	219	320	310 ÷ 370	M12	275	2

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	700(1000)* ÷ 3600	<b>TBML 360 MC</b>	<b>56670010</b>	1,5	3N AC 50Hz 400V	7,5	3) 4)
	class 2	700(1000)* ÷ 3600	<b>TBML 360 ME</b>	<b>56680010</b>	1,5	3N AC 50Hz 400V	7,5	3) 4)
Frequency 60 Hz								
	class 2	700(1000)* ÷ 3600	<b>TBML 360 MC</b>	<b>56675410</b>	1,5	3N AC 60Hz 380V	9,0	3) 4)
	class 2	700(1000)* ÷ 3600	<b>TBML 360 ME</b>	<b>56685410</b>	1,5	3N AC 60Hz 380V	9,0	3) 4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
TBML 360 ME: modulating probe for LCM 100 (see page 324)	

### MODULATING MODE

DESCRIPTION	PART NO.
TBML 360 MC: modulation kit (see page 324)	98000057
TBML 360 MC: modulating probe (see page 324)	

### NOTE

3 Soundproof lid on burner air intake.  
 4 Equipped with automatic air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural Gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

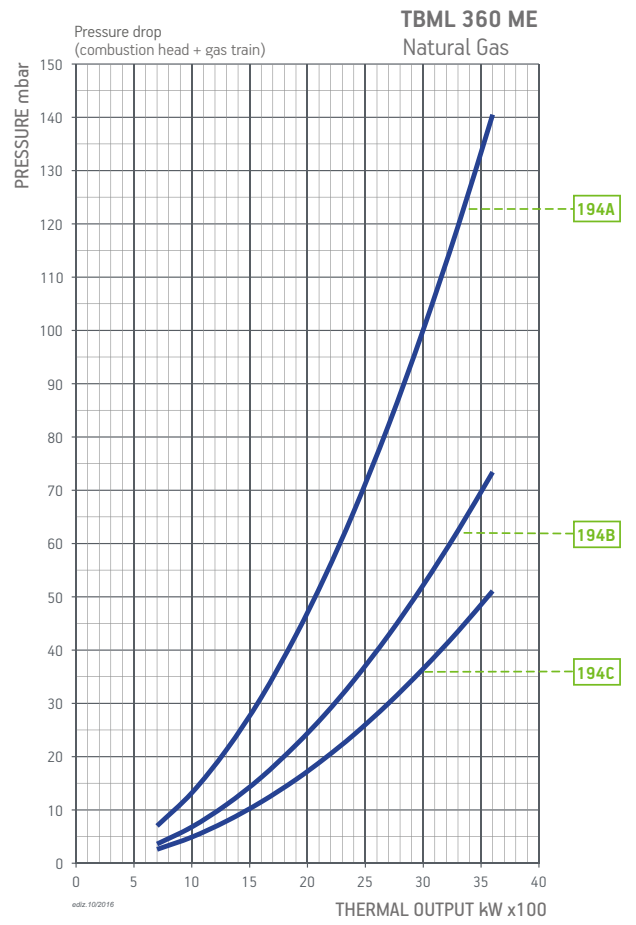
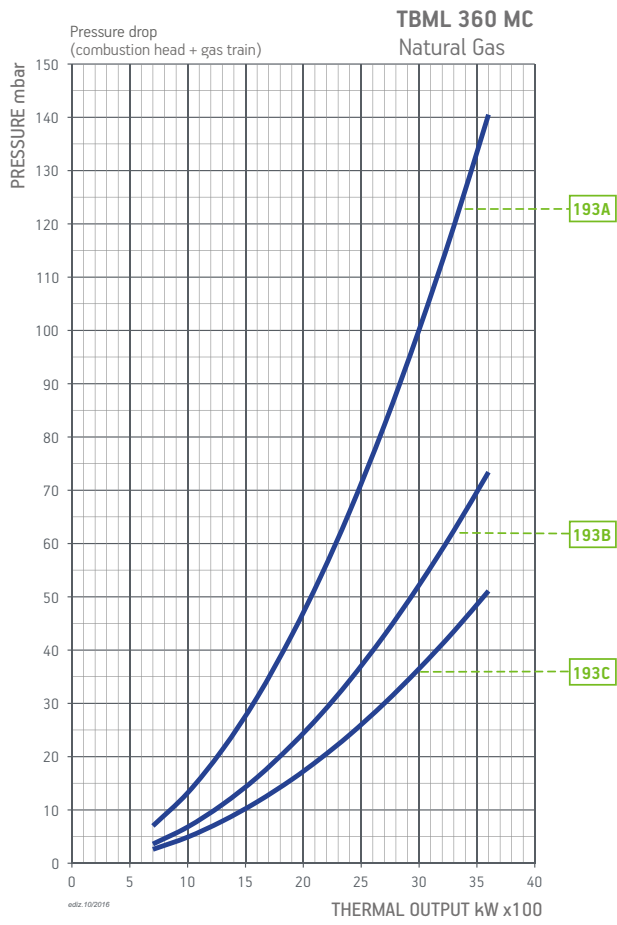
DESCRIPTION	PART NO.
TBML 360 MC/360 ME: Soundproof burner cover (see page 329)	97980057

### DUAL FUEL BURNERS ACCESSORIES

TBML 360 MC: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
TBML 360 ME: line filter, flex hoses, nozzles, boiler coupling kit.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Rif. curva grafico	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 360 MC	Metano	193A	CE/EXP	500	CTV	19990584	Included	-	Included	D7	
		193B	CE/EXP	500	CTV	19990585	Included	-	Included	D7	
		193C	CE/EXP	500	CTV	19990586	Included	-	Included	D7	
TBML 360 ME	Metano	194A	CE/EXP	500	CTV	19990524	Included	-	Included	D2	
			CE/EXP	500	CTV	19990725	Included	-	Included	D4	
		194B	CE/EXP	500	CTV	19990525	Included	-	Included	D2	
			CE/EXP	500	CTV	19990726	Included	-	Included	D4	
		194C	CE/EXP	500	CTV	19990526	Included	-	Included	D2	
			CE/EXP	500	CTV	19990727	Included	-	Included	D4	

Burner model	Gas type	Version	P.Max ** mbar	Esecuzione	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Kit GPL	Pic.	Note
					Part no.	Part no.	Part no.	Part no.	Part no.		
TBML 360 MC	GPL	CE/EXP	500	CTV	19990584	Included	-	Included	98000369	D7	
TBML 360 ME	GPL	CE/EXP	500	CTV	19990524	Included	-	Included	98000369	D2	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.



### TBML 450 LX ME

### TBML 510 LX ME

**Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)**

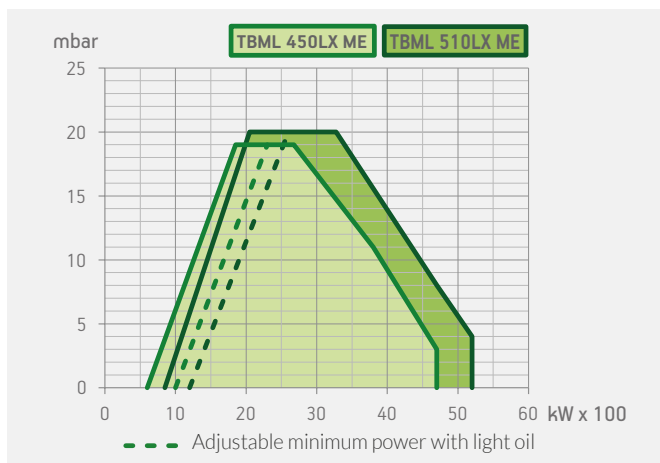
electronic modulation

electronic modulation

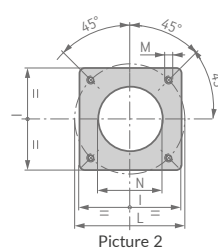
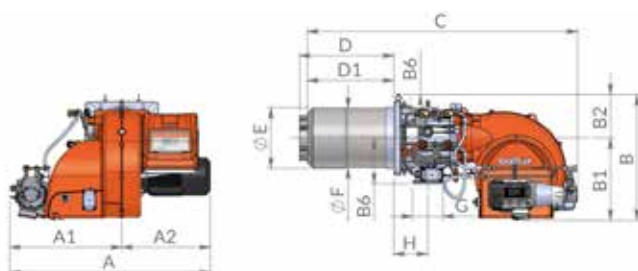
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	natural gas: 1:7 light oil: 1:4	natural gas: 1:6 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

#### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBML 450 LX ME	1520	2000	1160	405
TBML 450 LX ME V	1520	2000	1160	410



Model	A	A1	A2	B	B1	B2	B6	C	H	D	D1		øE	G	øF	R	R1	I	øL		M	øN	Pic.
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Min	Max	mm	mm	mm	mm	mm	mm	Min	Max	mm	mm	
TBML 450 LX ME	1200	530	530	810	525	285	295	1850	223	650	547	597	397	DN80	410	1120	1000	480	520	600	M20	415	2
TBML 450 LX ME V	1200	530	530	810	525	285	295	1850	223	650	547	597	397	DN80	410	1120	1000	480	520	600	M20	415	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
					Frequency 50 Hz					
	•	○	○	see page 222	600(1000)* ÷ 4700	<b>TBML 450 LX ME</b>	<b>56760010</b>	1,5	3N AC 50Hz 400V	9,2+1,5 4) 19)
	•	○	○	see page 222	600(1000)* ÷ 4700	<b>TBML 450 LX ME V</b>	<b>56760015</b>	1,5	3N AC 50Hz 400V	9,2+1,5 4) 19)
					Frequency 60 Hz					
	•	○	○	see page 222	600(1000)* ÷ 4700	<b>TBML 450 LX ME</b>	<b>56765410</b>	1,5	3N AC 60Hz 380V	9,2+1,5 4) 19)
	•	○	○	see page 222	600(1000)* ÷ 4700	<b>TBML 450 LX ME V</b>	<b>on request</b>	1,5	3N AC 60Hz 380V	9,2+1,5 4) 19)

○ Optional, • As standard

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzle (see page 325)	

## NOTE

4 Equipped with automatic air closure device.  
 19 For applications on flame-reversing boilers, please get in contact with our commercial department.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

## DUAL FUEL BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.





### TBML 510 LX ME

### TBML 510 LX ME V

**Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)**

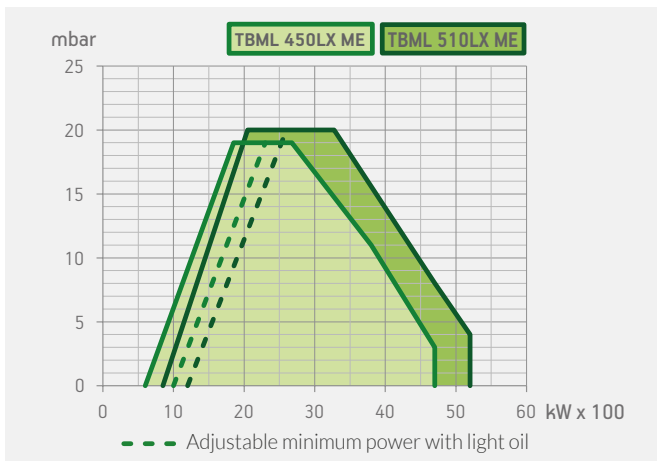
electronic modulation

electronic modulation

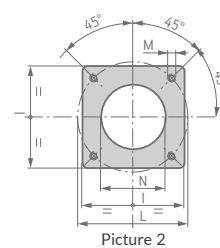
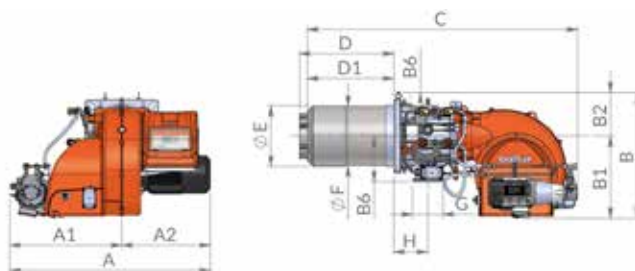
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	natural gas: 1:6 light oil: 1:4	natural gas: 1:6 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

#### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 510 LX ME	1520	2000	1160	409
TBML 510 LX ME V	1520	2000	1160	425



Model	A	A1	A2	B	B1	B2	B6	C	H	D	D1	øE	G	øF	R	R1	I	øL	M	øN	Pic.		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
TBML 510 LX ME	1200	530	530	810	525	285	295	1850	223	650	547	597	397	DN80	410	1120	1000	480	520	600	M20	415	2
TBML 510 LX ME V	1200	530	530	810	525	285	295	1850	223	650	547	597	397	DN80	410	1120	1000	480	520	600	M20	415	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
			see page 224	850(1200)* ÷ 5200	TBML 510 LX ME	56790010	1,5	3N AC 50Hz 400V	11,0+1,5	4) 19)
	•	○	see page 224	850(1200)* ÷ 5200	TBML 510 LX ME V	56790015	1,5	3N AC 50Hz 400V	11,0+1,5	4) 19)
			see page 224	850(1200)* ÷ 5200	TBML 510 LX ME	56795410	1,5	3N AC 60Hz 380V	11,0+1,5	4) 19)
	•	○	see page 224	850(1200)* ÷ 5200	TBML 510 LX ME V	56795415	1,5	3N AC 60Hz 380V	11,0+1,5	4) 19)

○ Optional, • As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzles (see page 325)	

### NOTE

4 Equipped with air closure device.  
 19 For applications on flame-reversing boilers, please get in contact with our commercial department.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

### GAS BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.



### TBML 650 LX ME

### TBML 650 LX ME V

**Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)**

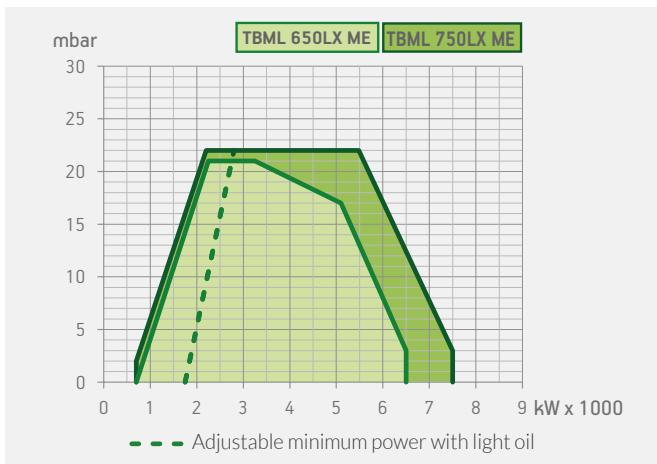
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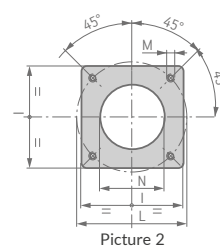
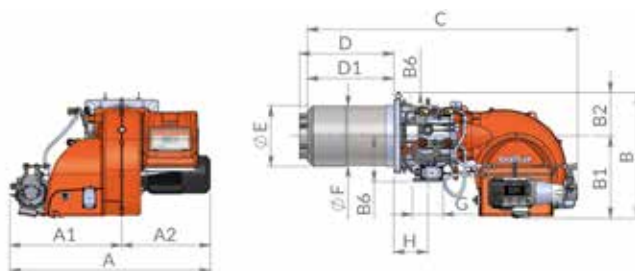
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	gas: 1:9 light oil: 1:4	gas: 1:9 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head.	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

#### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging kg
	L	P	H	
TBML 650 LX ME	1520	2000	1160	466
TBML 650 LX ME V	1520	2000	1160	481



Flange dimensions and boiler drilling template.

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Model	A	A1	A2	B	B1	B2	B6	C	H	D	D1	øE	G	øF	R	R1	I	øL	M	øN	Pic.		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
TBML 650 LX ME	1250	690	560	810	525	285	295	1850	223	650	547	597	397	DN80	410	1240	1000	480	520	600	M20	415	2
TBML 650 LX ME V	1250	690	560	810	525	285	295	1850	223	650	547	597	397	DN80	410	1240	1000	480	520	600	M20	415	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
					Frequency 50 Hz					
			see page 226	700(1750)* ÷ 6500	<b>TBML 650 LX ME</b>	<b>56820010</b>	1,5	3N AC 50Hz 400V	7,5+1,5	4) 19)
	•	○	see page 226	700(1750)* ÷ 6500	<b>TBML 650 LX ME V</b>	<b>56820015</b>	1,5	3N AC 50Hz 400V	7,5+1,5	
					Frequency 60 Hz					
			see page 226	700(1750)* ÷ 6500	<b>TBML 650 LX ME</b>	<b>56825410</b>	1,5	3N AC 60Hz 380V	7,5+1,5	4) 19)
	•	○	see page 226	700(1750)* ÷ 6500	<b>TBML 650 LX ME V</b>	<b>56825415</b>	1,5	3N AC 60Hz 380V	7,5+1,5	

○ Optional, • As standard

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzles (see page 325)	

## NOTE

- 4 Equipped with air closure device.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
  - \*) Min thermal capacity with light oil operation.
- Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

## GAS BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.



DUAL FUEL  
GAS/LIGHT OIL BURNERS

### TBML 750 LX ME

### TBML 750 LX ME V

**Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)**

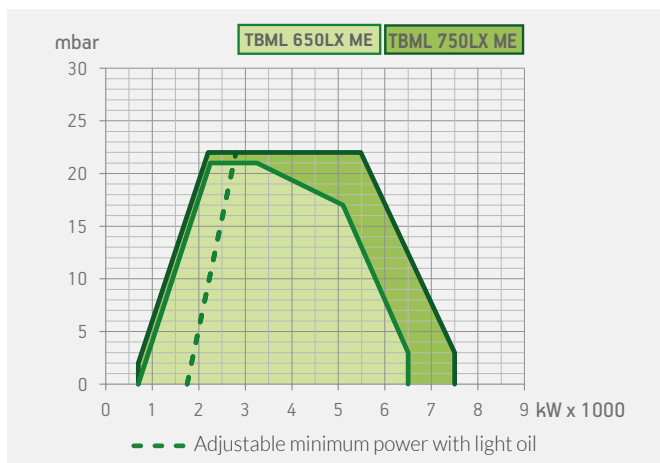
electronic modulation

electronic modulation

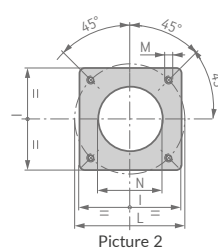
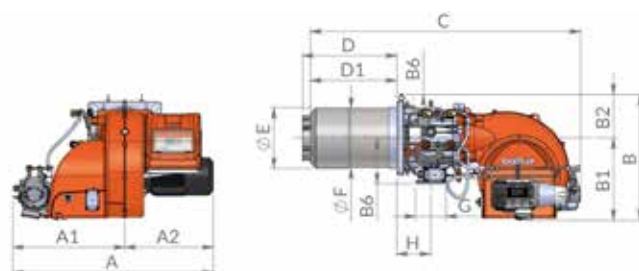
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	gas: 1:10 light oil: 1:4	gas: 1:10 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head.	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

#### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 750 LX ME	1520	2000	1160	506
TBML 750 LX ME V	1520	2000	1160	521



Model	A	A1	A2	B	B1	B2	B6	C	H	D	D1	øE	G	øF	R	R1	I	øL	M	øN	Pic.		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
TBML 750 LX ME	1250	690	560	810	525	285	295	1850	223	650	547	597	397	DN80	410	1240	1000	480	520	600	M20	415	2
TBML 750 LX ME V	1250	690	560	810	525	285	295	1850	223	650	547	597	397	DN80	410	1240	1000	480	520	600	M20	415	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
					Frequency 50 Hz					
			see page 228	700(1750)* ÷ 7500	<b>TBML 750 LX ME</b>	<b>56850010</b>	1,5	3N AC 50Hz 400V	18,5+2,2	4) 19)
•	○	○	see page 228	700(1750)* ÷ 7500	<b>TBML 750 LX ME V</b>	<b>56850015</b>	1,5	3N AC 50Hz 400V	18,5+2,2	4) 19)
					Frequency 60 Hz					
			see page 228	700(1750)* ÷ 7500	<b>TBML 750 LX ME</b>	<b>56855410</b>	1,5	3N AC 60Hz 380V	18,5+2,2	4) 19)
•	○	○	see page 228	700(1750)* ÷ 7500	<b>TBML 750 LX ME V</b>	<b>56855415</b>	1,5	3N AC 60Hz 380V	18,5+2,2	4) 19)

○ Optional, • As standard

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzles (see page 325)	

## NOTE

- 4 Equipped with air closure device.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
  - \*) Min thermal capacity with light oil operation.
- Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

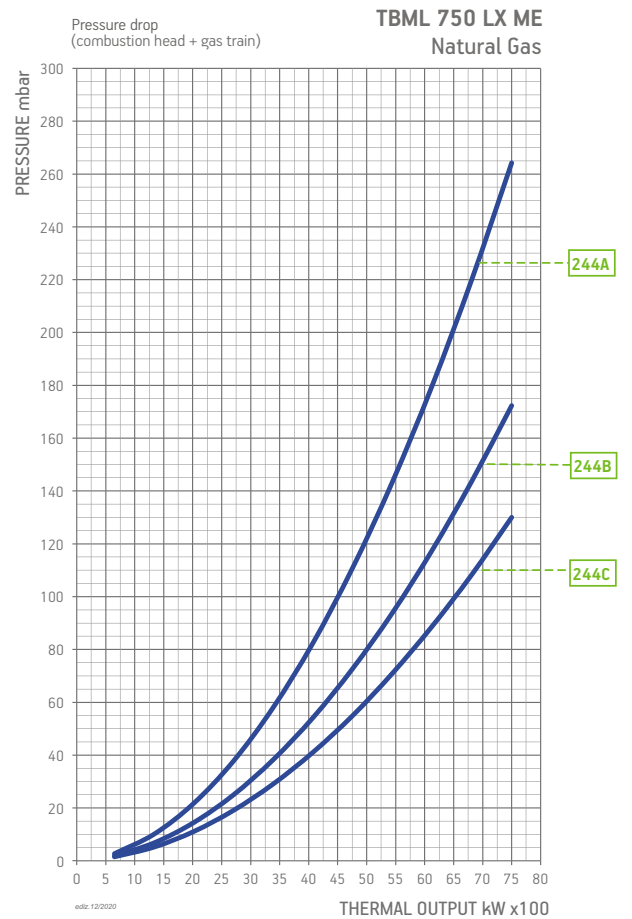
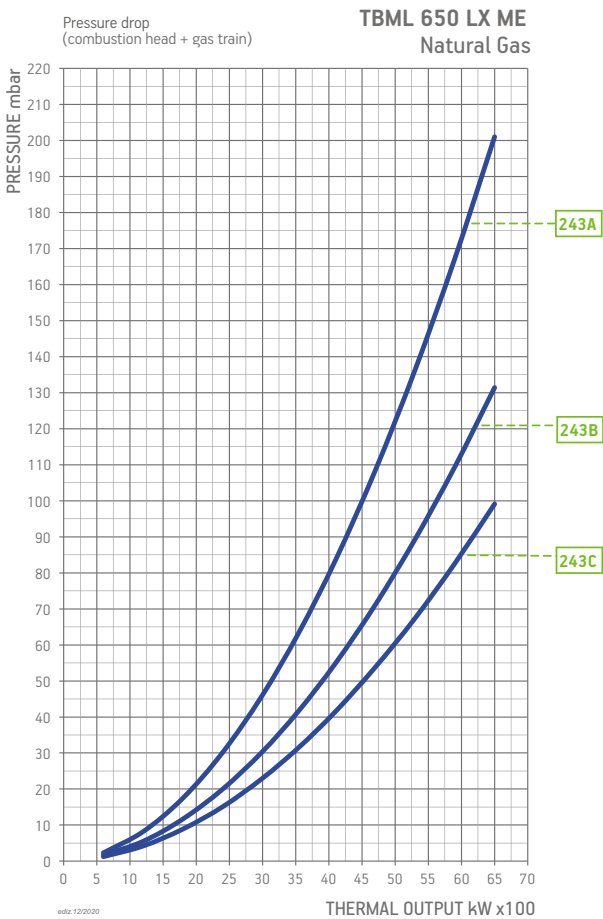
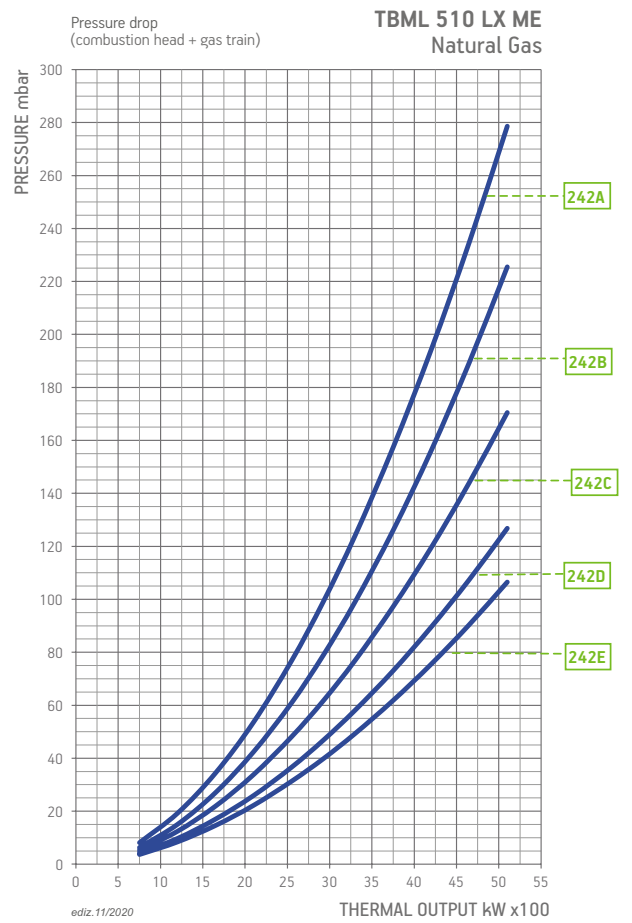
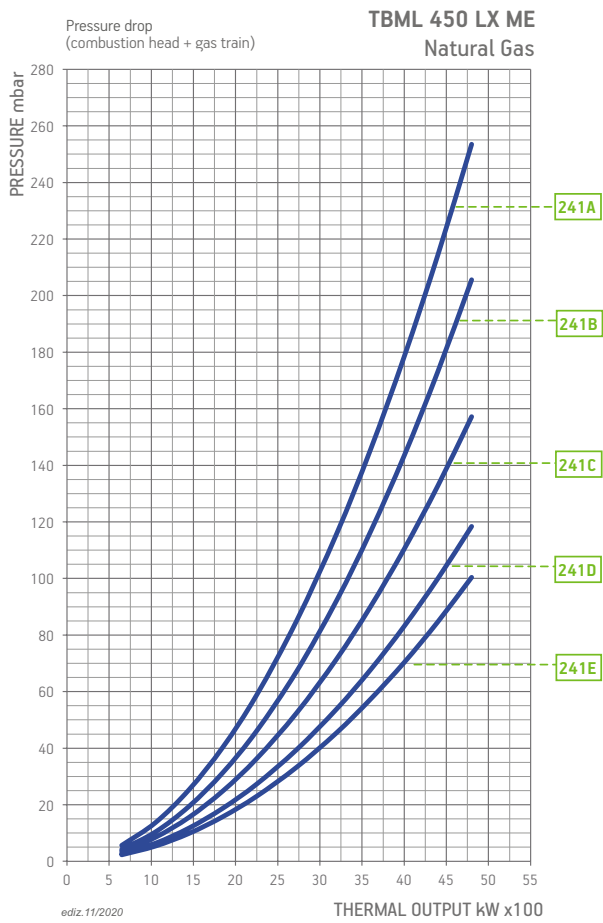
DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

## GAS BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner Model	Gas type	Curve on graph	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.
						Part no.	Part no.	Part no.	Part no.	
TBML 450 LX ME TBML 450 LX ME V	Natural gas	241A	CE/EXP	500	CTV	19990541	Included		Included	D4
			CE/EXP	500	CTV	19990679	Included		Included	D4
		241B	CE/EXP	500	CTV	19990666	Included		Included	D4
		241C	CE/EXP	500	CTV	19990542	Included		Included	D4
			CE/EXP	500	CTV	19990680	Included		Included	D4
		241D	CE/EXP	500	CTV	19990543	Included		Included	D4
			CE/EXP	500	CTV	19990681	Included		Included	D4
		241E	CE/EXP	500	CTV	19990544	Included		Included	D4
			CE/EXP	500	CTV	19990682	Included		Included	D4
		TBML 510 LX ME TBML 510 LX ME V	Natural gas	242A	CE/EXP	500	CTV	19990541	Included	
CE/EXP	500				CTV	19990679	Included		Included	D4
242B	CE/EXP			500	CTV	19990666	Included		Included	D4
242C	CE/EXP			500	CTV	19990542	Included		Included	D4
	CE/EXP			500	CTV	19990680	Included		Included	D4
242D	CE/EXP			500	CTV	19990543	Included		Included	D4
	CE/EXP			500	CTV	19990681	Included		Included	D4
242E	CE/EXP			500	CTV	19990544	Included		Included	D4
	CE/EXP			500	CTV	19990682	Included		Included	D4
TBML 650 LX ME TBML 650 LX ME V	Natural gas			243A	CE/EXP	500	CTV	19990542	Included	
		CE/EXP	500		CTV	19990680	Included		Included	D4
		243B	CE/EXP	500	CTV	19990543	Included		Included	D4
			CE/EXP	500	CTV	19990681	Included		Included	D4
		243C	CE/EXP	500	CTV	19990544	Included		Included	D4
			CE/EXP	500	CTV	19990682	Included		Included	D4
TBML 750 LX ME TBML 750 LX ME V	Natural gas	244A	CE/EXP	500	CTV	19990542	Included		Included	D4
			CE/EXP	500	CTV	19990680	Included		Included	D4
		244B	CE/EXP	500	CTV	19990543	Included		Included	D4
			CE/EXP	500	CTV	19990681	Included		Included	D4
		244C	CE/EXP	500	CTV	19990544	Included		Included	D4
			CE/EXP	500	CTV	19990682	Included		Included	D4

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.

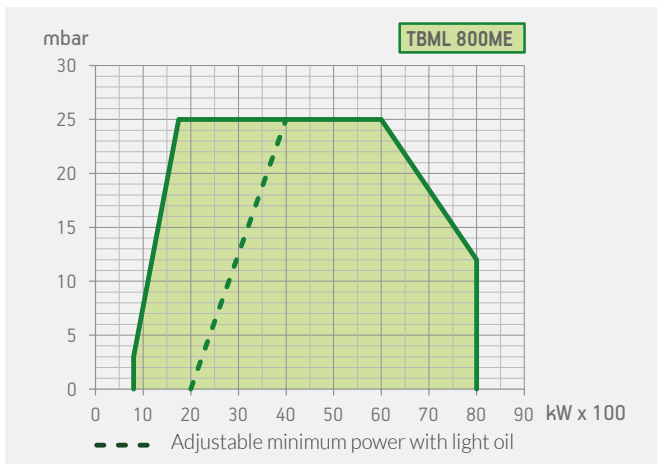




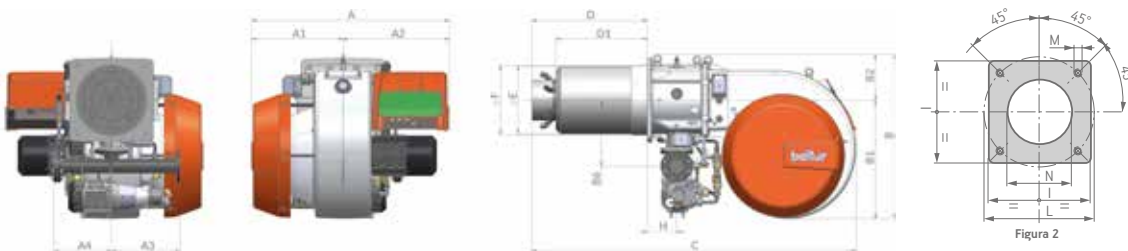
	TBML 800 ME	TBML 800 ME V
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:</b>	electronic modulation	electronic modulation
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)</b>	○	●
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	gas: 1:7 light oil: 1:4	gas: 1:7 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 800 ME	2200	1460	1200	600
TBML 800 ME V	2200	1460	1200	615



Model	A	A1	A2	A3	A4	B	B1	B2	B6	C	D	D1	E	F	H	I	L	M	N	Pic.
TBML 800 ME	1230	570	660	335	425	1000	740	260	410	2020	715	570	418	432	190	520	594	M20	440	2
TBML 800 ME V	1230	570	660	335	425	1000	740	260	410	2020	715	570	418	432	190	520	594	M20	440	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
			see page 232	800(2000)* ÷ 8000	<b>TBML 800 ME</b>	<b>67320010</b>	1,5	3N AC 50Hz 400V	15,0+2,2	4) 19)
	●	○	see page 232	800(2000)* ÷ 8000	<b>TBML 800 ME V</b>	<b>67320015</b>	1,5	3N AC 50Hz 400V	15,0+2,2	4) 19)
			see page 232	800(2000)* ÷ 8000	<b>TBML 800 ME</b>	<b>67325410</b>	1,5	3N AC 60Hz 380V	15,0+2,2	4) 19)
	●	○	see page 232	800(2000)* ÷ 8000	<b>TBML 800 ME V</b>	<b>67325415</b>	1,5	3N AC 60Hz 380V	15,0+2,2	4) 19)

○ Optional ● As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit TBML 800 ME (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzle with 1 ÷ 5 ratio (see page 325)	

### NOTE

4 Equipped with air closure device.  
 19 For applications on flame-reversing boilers, please get in contact with our commercial department.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

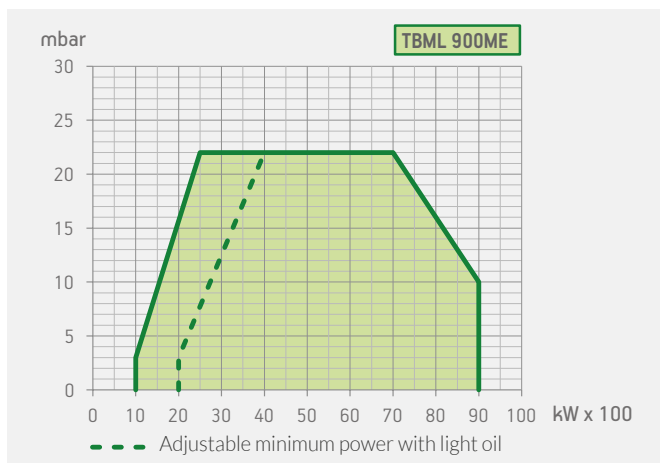
TBML 800 ME: line filter, flex hoses, boiler coupling kit.



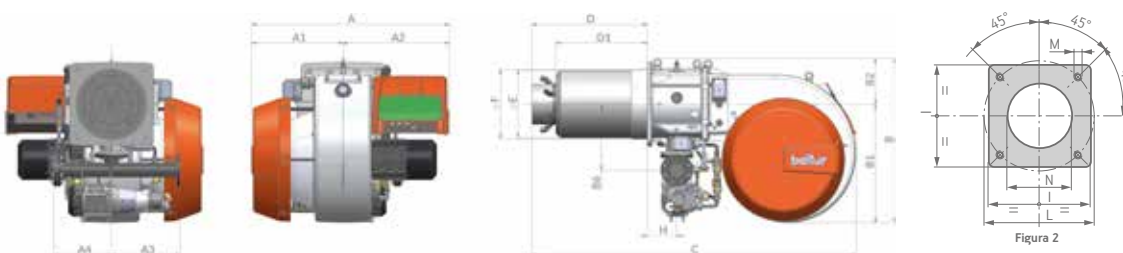
	TBML 900 ME	TBML 900 ME V
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:</b>	electronic modulation	electronic modulation
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)</b>	○	●
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	gas: 1:9 light oil: 1:4	gas: 1:9 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Device made of sound-absorbing material to reduce fan noise	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 900 ME	2200	1460	1240	650
TBML 900 ME V	2200	1460	1240	665



DUAL FUEL  
GAS/LIGHT OIL BURNERS

Model	A mm	A1 mm	A2 mm	A3 mm	A4 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBML 900 ME	1230	570	660	334	375	1000	740	260	407	2000	670-730	426	426	432	480	594	M20	462	2
TBML 900 ME V	1230	570	660	334	375	1000	740	260	407	2000	670-730	426	426	432	480	594	M20	462	2

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz										
	○	○	see page 234	1000(2000)* ÷ 9000	<b>TBML 900 ME</b>	<b>67380010</b>	1,5	3N AC 50Hz 400V	18,5+2,2	4) 19)
	●	○	see page 234	1000(2000)* ÷ 9000	<b>TBML 900 ME V</b>	<b>67380015</b>	1,5	3N AC 50Hz 400V	18,5+2,2	4) 19)
Frequency 60 Hz										
	○	○	see page 234	1000(2000)* ÷ 9000	<b>TBML 900 ME</b>	<b>67385410</b>	1,5	3N AC 60Hz 380V	18,5+2,2	4) 19)
	●	○	see page 234	1000(2000)* ÷ 9000	<b>TBML 900 ME V</b>	<b>67385415</b>	1,5	3N AC 60Hz 380V	18,5+2,2	4) 19)

○ Optional, ● As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit TBML 900 ME (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzle with 1 ÷ 5 ratio (see page 325)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980058

### GAS BURNERS ACCESSORIES

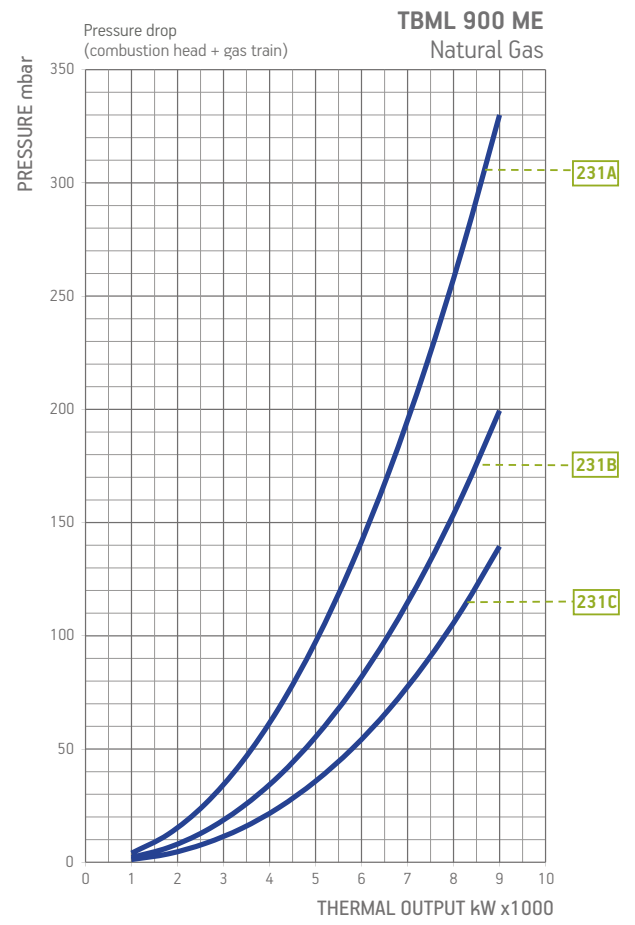
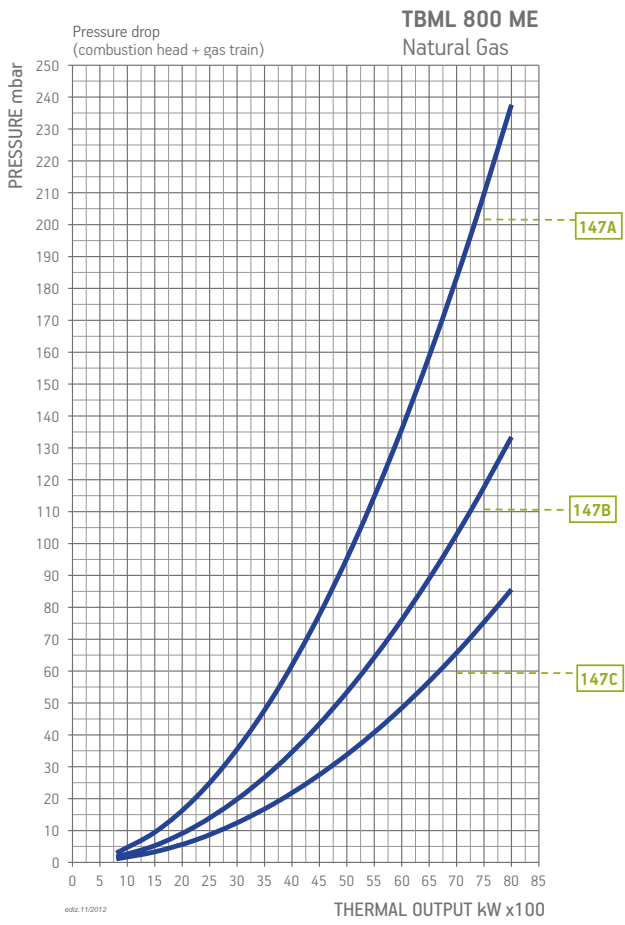
TBML 900 ME: line filter, flex hoses, boiler coupling kit.

### NOTE

- 4 Equipped with air closure device.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
  - \*) Min thermal capacity with light oil operation.
- Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



### BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Curve on graph	Version	P.Max ** mbar	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBML 800 ME TBML 800 ME V	Natural gas	147A	CE/EXP	500	CTV	19990588	Included	96005008	Included	D4	
			CE/EXP	500	CTV	19990743	Included	96005008	Included	D4	
		147B	CE/EXP	500	CTV	19990589	Included	-	Included	D4	
			CE/EXP	500	CTV	19990744	Included	-	Included	D4	
		147C	CE/EXP	500	CTV	19990590	Included	96005009	Included	D4	
			CE/EXP	500	CTV	19990745	Included	96005009	Included	D4	
TBML 900 ME TBML 900 ME V	Natural gas	231A	CE/EXP	500	CTV	19990588	Included	96005008	Included	D4	
			CE/EXP	500	CTV	19990743	Included	96005008	Included	D4	
		231B	CE/EXP	500	CTV	19990589	Included	-	Included	D4	
			CE/EXP	500	CTV	19990744	Included	-	Included	D4	
		231C	CE/EXP	500	CTV	19990590	Included	96005009	Included	D4	
			CE/EXP	500	CTV	19990745	Included	96005009	Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\* ) Maximum gas inlet pressure at pressure regulator.

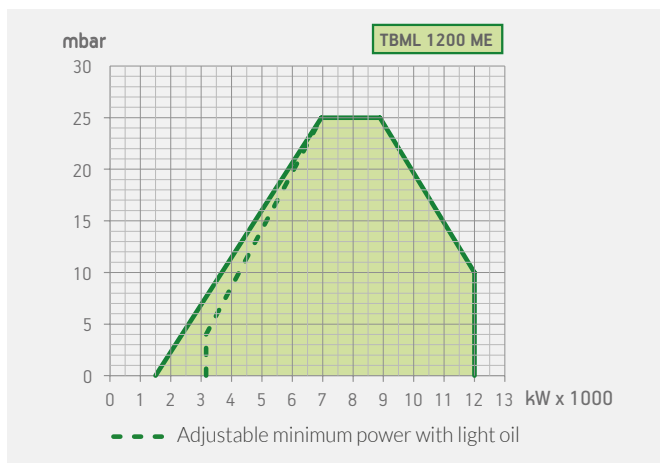


DUAL FUEL  
GAS/LIGHT OIL BURNERS

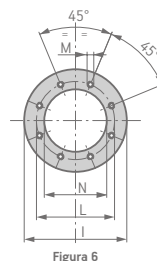
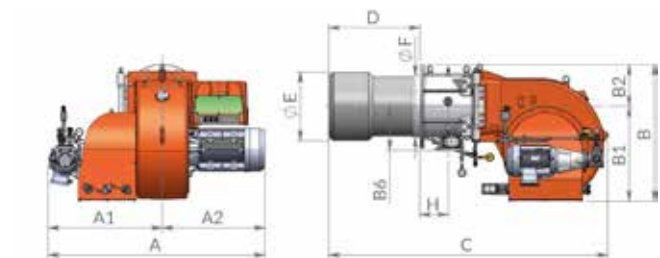
	TBML 1200 ME	TBML 1200 ME V
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	gas: 1:8 light oil: 1:4	gas: 1:8 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	up/down	up/down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Atomisation unit with solenoid valve for to control of the nozzle closing pin	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 1200 ME	2610	1760	1470	850
TBML 1200 ME V	2610	1760	1470	865



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	H mm	I mm	L mm	M mm	N mm	Pic.
TBML 1200 ME	1650	900	750	1130	780	350	360	2285	742	496	503	235	685	630	M20	533	6
TBML 1200 ME V	1650	900	750	1130	780	350	360	2285	742	496	503	235	685	630	M20	533	6

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
			see page 238	1500(3160)* ÷ 12000	<b>TBML 1200 ME</b>	<b>67340010</b>	1,5	3N AC 50Hz 400V	22,0+4,0	4)
	•	○	see page 238	1500(3160)* ÷ 12000	<b>TBML 1200 ME V</b>	<b>67340015</b>	1,5	3N AC 50Hz 400V	22,0+4,0	4)
			see page 238	1500(3160)* ÷ 12000	<b>TBML 1200 ME</b>	<b>67345410</b>	1,5	3N AC 60Hz 380V	22,0+4,0	4)
	•	○	see page 238	1500(3160)* ÷ 12000	<b>TBML 1200 ME V</b>	<b>67345415</b>	1,5	3N AC 60Hz 380V	22,0+4,0	4)

○ Optional, • As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O2 control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461

### GAS BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.

### NOTES

4 Equipped with air closure device.  
 \*) Min thermal capacity with light oil operation.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

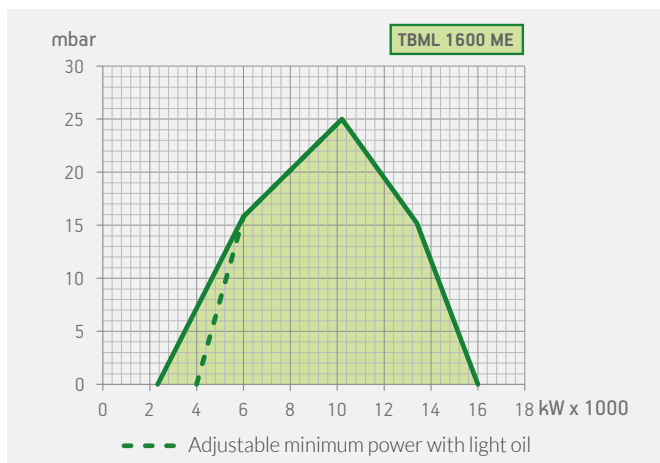




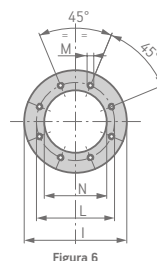
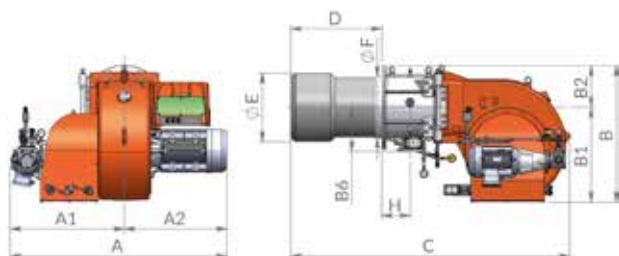
	TBML 1600 ME	TBML 1600 ME V
<b>Alternating natural gas/light oil burner according to european regulation EN676and EN267. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	gas: 1:8 light oil: 1:4	gas: 1:8 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Atomisation unit with solenoid valve for to control of the nozzle closing pin	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 1600 ME	2470	2050	1420	860
TBML 1600 ME V	2470	2050	1420	875



Flange dimensions and boiler drilling template.

Figura 6

Model	A	A1	A2	B	B1	B2	B6	C	D	E	F	H	I	L	M	N	Pic.
TBML 1600 ME	1742	900	842	1130	780	350	360	2295	747	563	503	235	685	630	M20	580	6
TBML 1600 ME V	1742	900	842	1130	780	350	360	2295	747	563	503	235	685	630	M20	580	6

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz										
			see page 240	2340(4000)* ÷ 16000	<b>TBML 1600 ME</b>	<b>67530010</b>	1,5	3N AC 50Hz 400V	30,0+5,5	4) 19)
•	○	○	see page 240	2340(4000)* ÷ 16000	<b>TBML 1600 ME V</b>	<b>67530015</b>	1,5	3N AC 50Hz 400V	30,0+5,5	4) 19)
Frequency 60 Hz										
			see page 240	2340(4000)* ÷ 16000	<b>TBML 1600 ME</b>	<b>on request</b>	1,5	3N AC 60Hz 380V	30,0+5,5	4) 19)
•	○	○	see page 240	2340(4000)* ÷ 16000	<b>TBML 1600 ME V</b>	<b>on request</b>	1,5	3N AC 60Hz 380V	30,0+5,5	4) 19)

○ Optional, • As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980061

### NOTE

- 4 Equipped with air closure device.
  - 19 For applications on flame-reversing boilers, please get in contact with our commercial department.
- Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### GAS BURNERS ACCESSORIES

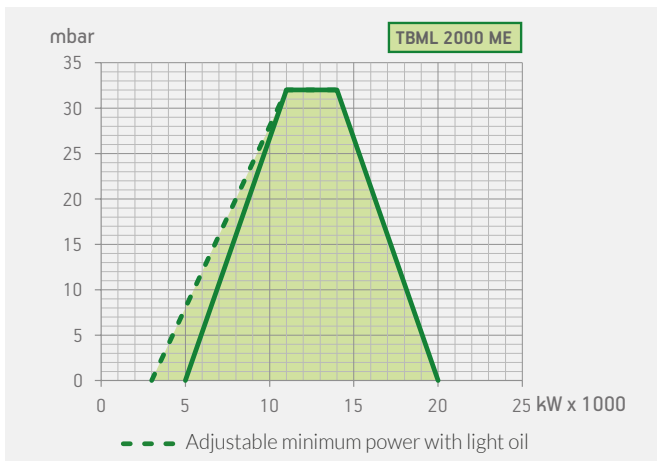
Line filter, flex hoses, boiler coupling kit.



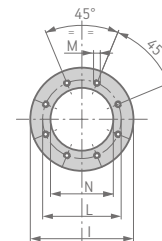
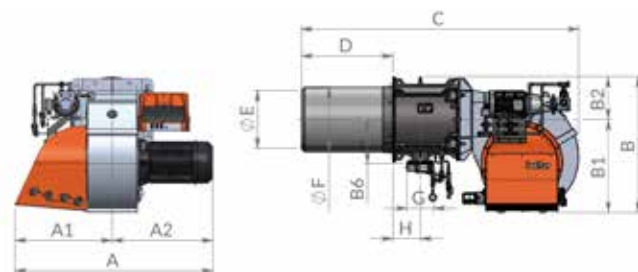
	TBML 2000 ME	TBML 2000 ME V
<b>Alternating natural gas/light oil burner according to european regulation EN676 and EN267. Two-stage progressive control. Modulating mode is available for both fuels by the modulation kit (supplied separately)</b>	electronic modulation	electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	●
Modulation ratio:	gas: 1:6 light oil: 1:4	gas: 1:6 light oil: 1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 2	class 2
Burner with Low NOx and CO emissions on light oil according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange.	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric cam	electric cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum and maximum pressure switch, pressure regulator and gas filter	●	●
Fail proof connectors for burner/gas train connection.	●	●
Gas train outlet:	down	down
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP54	IP54

**LEGEND:**

○ Optional; ● As standard



Model	Size of packaging			Weight with packaging
	L	P	H	
TBML 2000 ME	2750	2050	1520	1380
TBML 2000 ME V	2750	2050	1520	1395



Flange dimensions and boiler drilling template.

DUAL FUEL  
GAS/LIGHT OIL BURNERS

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	E mm	F mm	G	H mm	I mm	L mm	M	N mm	Pic.
TBML 2000 ME	1855	913	942	1265	870	395	482	2595	856	600	612	DN125	258	790	730	M20	640	4
TBML 2000 ME V	1855	913	942	1265	870	395	482	2595	856	600	612	DN125	258	790	730	M20	640	4

	Kit O <sub>2</sub>	Kit CO	Emissions class	Thermal output kW	Model	Part no.	Viscosità °E a 20°C	Electrical supply	Motor kW	Note
			see page 242	3200(5000)* ÷ 20000	<b>TBML 2000 ME</b>	<b>67550010</b>	1,5	3N AC 50Hz 400V	45,0+7,5	4) 19)
	•	○	see page 242	3200(5000)* ÷ 20000	<b>TBML 2000 ME V</b>	<b>67550015</b>	1,5	3N AC 50Hz 400V	45,0+7,5	4) 19)
			see page 242	3200(5000)* ÷ 20000	<b>TBML 2000 ME</b>	<b>67555410</b>	1,5	3N AC 60Hz 380V	45,0+7,5	4) 19)
	•	○	see page 242	3200(5000)* ÷ 20000	<b>TBML 2000 ME V</b>	<b>67555415</b>	1,5	3N AC 60Hz 380V	45,0+7,5	4) 19)

○ Optional, • As standard

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324) (included in ME V version)	98000059
Modulating probe for LCM 100 (see page 324)	

### NOTE

4 Equipped with air closure device.  
 19 For applications on flame-reversing boilers, please get in contact with our commercial department.  
 Net calorific value:  
 Natural gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

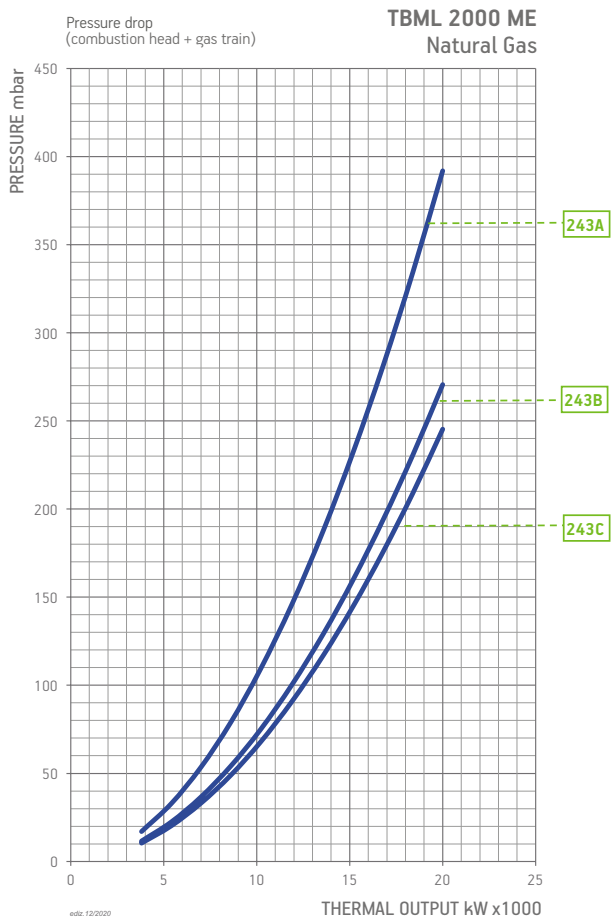
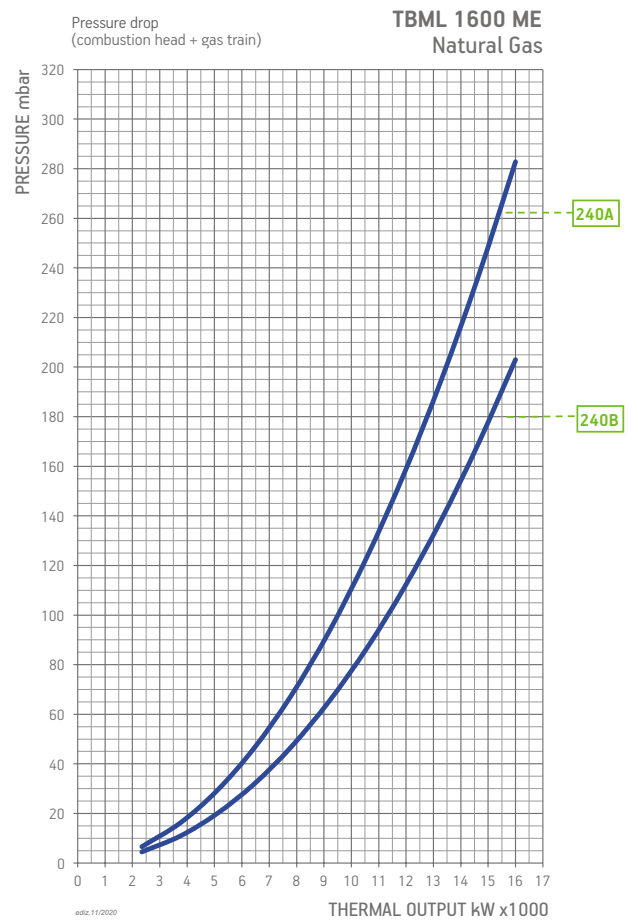
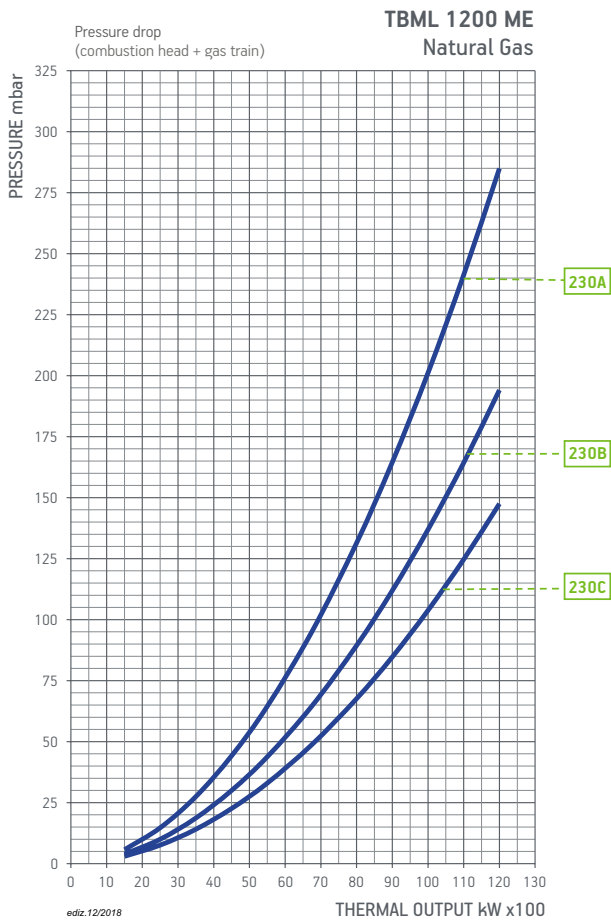
DESCRIPTION	PART NO.
O <sub>2</sub> control kit <b>NEW</b>	98000460
CO control kit <b>NEW</b>	98000461
Soundproof burner cover (see page 329)	97980061

### GAS BURNERS ACCESSORIES

Line filter, flex hoses, boiler coupling kit.

## BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/LIGHT OIL BURNERS



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Curve on graph	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Notes
						Part no.	Part no.	Part no.	Part no.		
TBML 1200 ME TBML 1200 ME V	Natural gas	230A	CE/EXP	500	CTV	19990606	Included		Included	D4	
			CE/EXP	500	CTV	19990686	Included		Included	D4	
		230B	CE/EXP	500	CTV	19990607	Included		Included	D4	
			CE/EXP	500	CTV	19990687	Included		Included	D4	
		230C	CE/EXP	500	CTV	19990608	Included		Included	D4	
			CE/EXP	500	CTV	19990688	Included		Included	D4	
TBML 1200 ME TBML 1200 ME V	Natural gas	240A	CE/EXP	500	CTV	19990640	Included		Included	D4	
			CE/EXP	500	CTV	19990687	Included		Included	D4	
		240B	CE/EXP	500	CTV	19990641	Included		Included	D4	
			CE/EXP	500	CTV	19990688	Included		Included	D4	
TBML 2000 ME TBML 2000 ME V	Natural gas	243A	CE/EXP	500	CTV	19990648	Included		Included	D4	
			CE/EXP	500	CTV	19990689	Included		Included	D4	
		243B	CE/EXP	500	CTV	19990649	Included		Included	D4	
			CE/EXP	500	CTV	19990690	Included		Included	D4	
		243C	CE/EXP	500	CTV	19990650	Included		Included	D4	
			CE/EXP	500	CTV	19990691	Included		Included	D4	

To choose the correct gas train please refer to the information on page 17.

For information on the structure, composition, and size of the gas train please refer to the diagrams on page 330.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*) Maximum gas inlet pressure at pressure regulator.



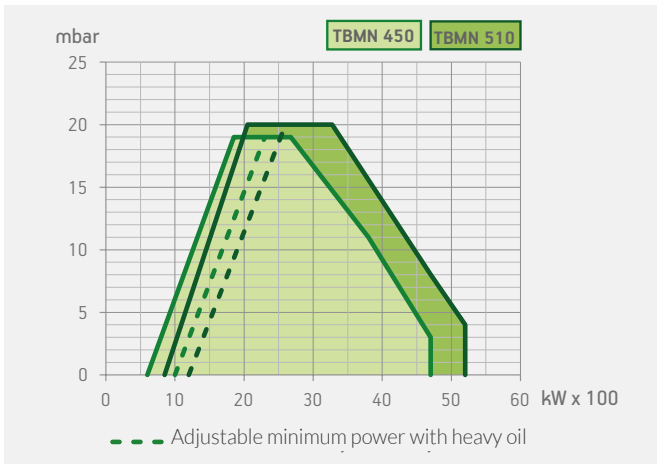
Suitable for fuel oil with a maximum viscosity of 50°E at 50°C

DUAL FUEL  
GAS/HEAVY OIL BURNERS

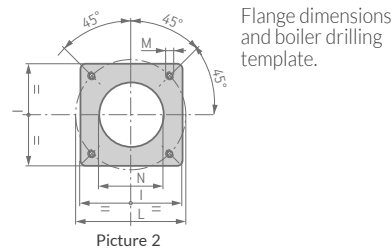
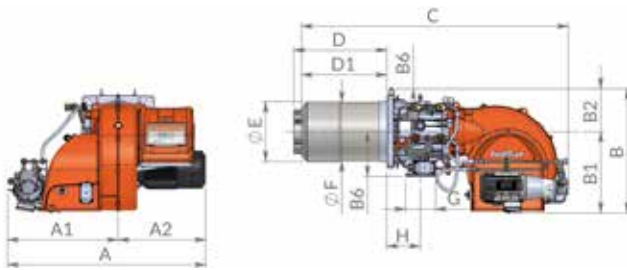
	TBMN 450 ME	TBMN 510 ME
<b>Alternating natural gas/heavy oil. Operation:</b>	<b>Electronic modulation</b>	<b>Electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:8/1:4	1:6/1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	•	•
Fixed boiler coupling flange	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	electronic cam	electronic cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, maximum and minimum pressure switch, pressure regulator and gas filter	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Electronic motor for pump drive	•	•
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	•	•
Electric fuel preheater with 50L volume with safety valve, self-cleaning filter, thermometer, pressure gauge, minimum and safety thermostats, electronic temperature regulator with digital interface and light signals	to be ordered separately	
Heating elements for pump, valves and atomisation unit		•
Atomisation unit with nozzle-closing pin	•	•
Fuel switch device:	manual	manual
Flame detection by UV photocell	•	•
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	•	•
Electric protection rating:	IP54	IP54

**LEGEND:**

○ Optional; • As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBMN 450 ME	2065	1525	1200	440
TBMN 510 ME	2065	1525	1200	440



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	G	H mm	I mm	L mm	M	N mm
TBMN 450 ME	1265	735	530	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	520÷600	M20	430
TBMN 510 ME	1265	735	530	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	520÷600	M20	430

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 50°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 3	600 ÷ 4700	<b>TBMN 450 ME</b>	<b>56910010</b>	50	3N AC 50Hz 400V	9,2+2,2	4)
	class 3	850 ÷ 5200	<b>TBMN 510 ME</b>	<b>56930010</b>	50	3N AC 50Hz 400V	11,0+2,2	4)
Frequency 60 Hz								
	class 3	600 ÷ 4700	<b>TBMN 450 ME</b>	<b>56915410</b>	50	3N AC 60Hz 380V	9,2+2,2	4)
	class 3	850 ÷ 5200	<b>TBMN 510 ME</b>	<b>56935410</b>	50	3N AC 60Hz 380V	13,0+2,2	4)

## TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	9800059
Nozzle (see page 325)	

## NOTE

4 Equipped with automatic air closure device.  
 Net calorific value:  
 Natural Gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Heavy oil: Hi = 40,19 MJ/kg = 9600 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

## ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover -20 dB(A) (see page 329)	97980059

## DUAL FUEL BURNERS ACCESSORIES

Flex hoses, dense naphtha filter, boiler coupling kit.





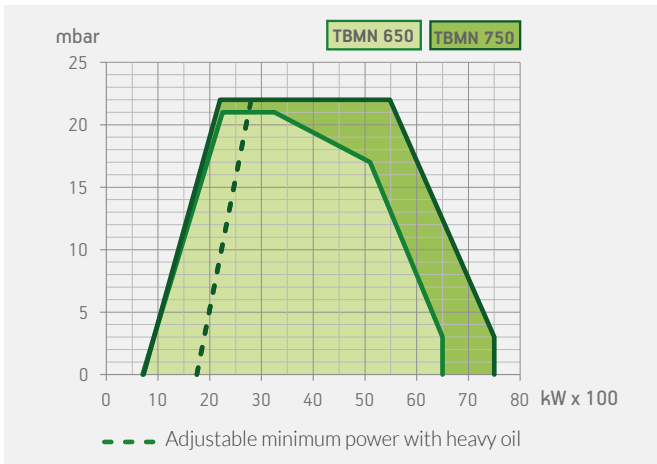
Suitable for fuel oil with a maximum viscosity of 50°E at 50°C

DUAL FUEL  
GAS/HEAVY OIL BURNERS

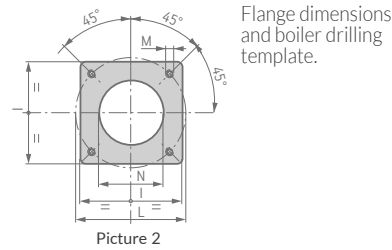
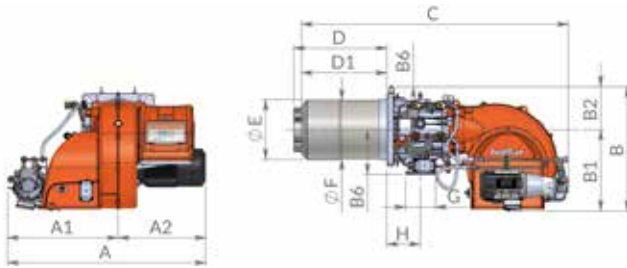
	TBMN 650 ME	TBMN 750 ME
<b>Alternating natural gas/heavy. Operation:</b>	<b>Electronic modulation</b>	<b>Electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:9/1:4	1:10/1:4
Burner with Low NOx and CO emissions on gas according to European standard EN676:	class 3	class 3
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	•	•
Fixed boiler coupling flange	•	•
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	electronic cam	electronic cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, maximum and minimum pressure switch, pressure regulator and gas filter	•	•
Fail proof connectors for burner/gas train connection	•	•
Gas train outlet:	down	down
Electronic motor for pump drive	•	•
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	•	•
Electric fuel preheater with 50L volume with safety valve, self-cleaning filter, thermometer, pressure gauge, minimum and safety thermostats, electronic temperature regulator with digital interface and light signals	to be ordered separately	
Heating elements for pump, valves and atomisation unit	•	•
Atomisation unit with nozzle-closing pin	•	•
Fuel switch device:	manual	manual
Flame detection by UV photocell	•	•
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	•	•
Electric protection rating:	IP54	IP54

**LEGEND:**

○ Optional; • As standard



Model	Size of packaging			Weight kg
	L	P mm	H	
TBMN 650 ME	2065	1525	1200	470
TBMN 750 ME	2065	1525	1200	510



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	G	H mm	I mm	L mm	M	N mm
TBMN 650 ME	1385	735	650	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	600	M20	430
TBMN 750 ME	1385	735	650	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	600	M20	430

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 50°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 3	700 ÷ 6500	<b>TBMN 650 ME</b>	<b>56950010</b>	50	3N AC 50Hz 400V	15,0+3,0	4)
	class 3	720 ÷ 7500	<b>TBMN 750 ME</b>	<b>56970010</b>	50	3N AC 50Hz 400V	18,5+3,0	4)
Frequency 60 Hz								
	class 3	700 ÷ 6500	<b>TBMN 650 ME</b>	<b>56955410</b>	50	3N AC 60Hz 380V	15,0+3,5	4)
	class 3	720 ÷ 7500	<b>TBMN 750 ME</b>	<b>56975410</b>	50	3N AC 60Hz 380V	18,5+3,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	9800059
Nozzle (see page 325)	

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value:  
 Natural Gas: Hi = 35,80 MJ/m<sup>3</sup> = 8550 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 LPG: Hi = 92 MJ/m<sup>3</sup> = 22000 kcal/m<sup>3</sup>, at reference conditions of 0°C, 1013mbar.  
 Heavy oil: Hi = 40,19 MJ/kg = 9600 kcal/kg.  
 For different type of gas and pressure values, please get in contact with our commercial department.

### ACCESSORIES AVAILABLE ON REQUEST

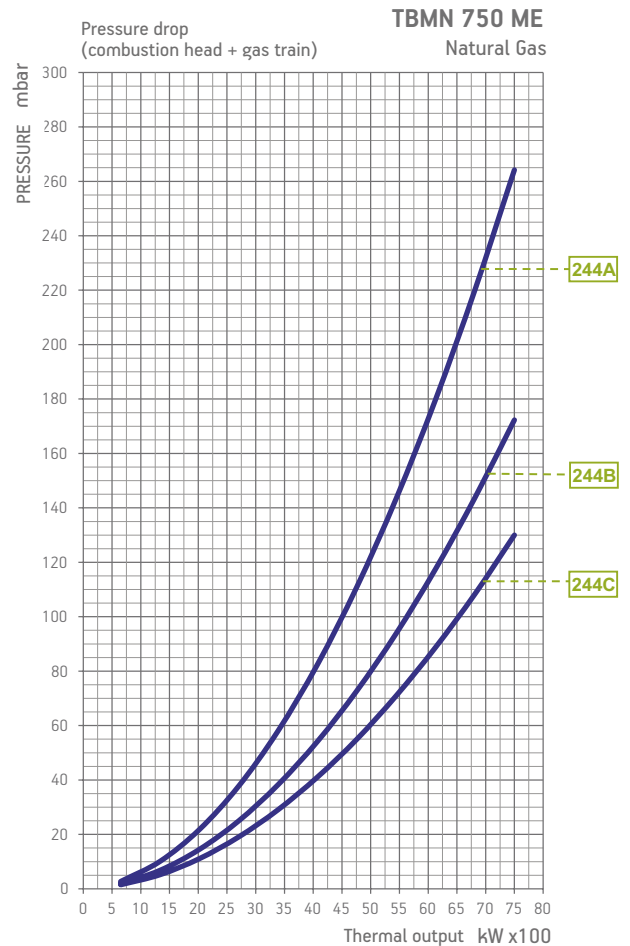
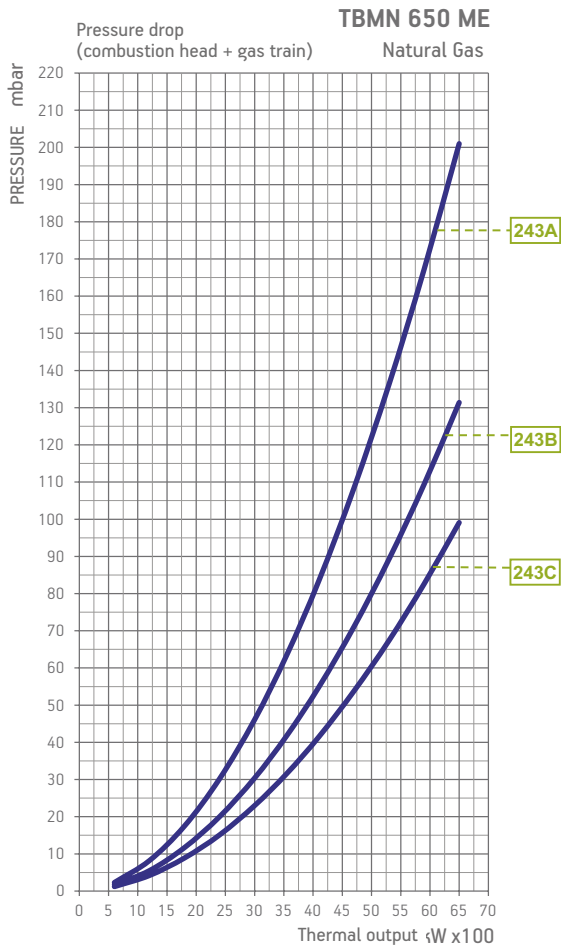
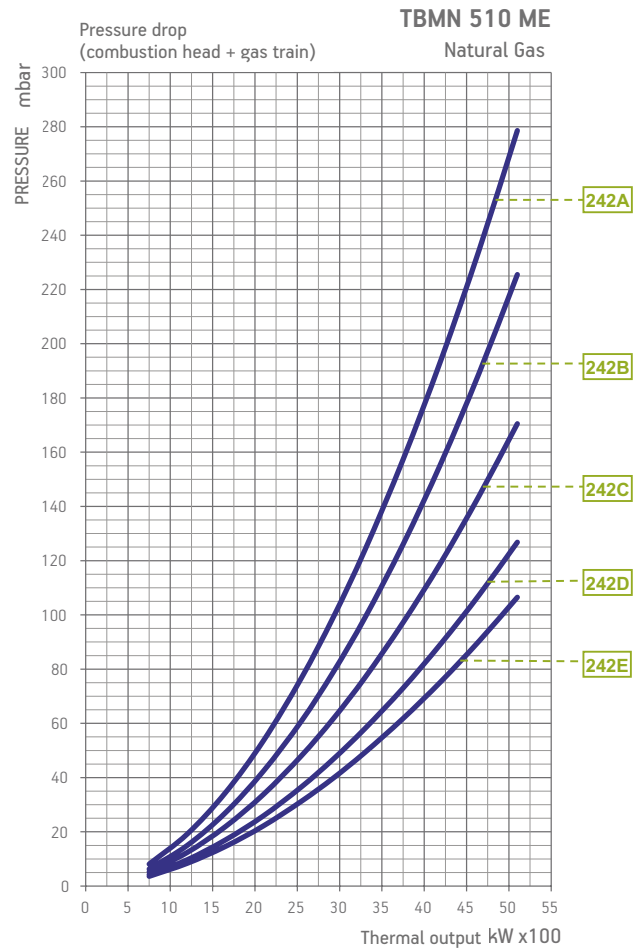
DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover -20 dB(A) (see page 329)	97980059

### DUAL FUEL BURNERS ACCESSORIES

Flex hoses, dense naphtha filter, boiler coupling kit.

### BURNER/GAS TRAIN MATCH

DUAL FUEL  
GAS/HEAVY OIL BURNERS



## BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets.

Burner model	Gas type	Curve on graph	Version	P.Max **	Execution	Gas train	Regulator with incorporated filter	Burner/gas train adapter	Valve tightness control kit	Pic.	Note
						Part no.	Part no.	Part no.	Part no.		
TBMN 450 ME	Natural gas	241A	CE/EXP	500	CTV	19990541	Included	-	Included	D4	
		241B	CE/EXP	500	CTV	19990666	Included	-	Included	D4	
		241C	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
		241D	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
		241E	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
TBMN 510 ME	Natural gas	242A	CE/EXP	500	CTV	19990541	Included	-	Included	D4	
		242B	CE/EXP	500	CTV	19990666	Included	-	Included	D4	
		242C	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
		242D	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
		242E	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
TBMN 650 ME	Natural gas	243A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
		243B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
		243C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	
TBMN 750 ME	Natural gas	244A	CE/EXP	500	CTV	19990542	Included	-	Included	D4	
		244B	CE/EXP	500	CTV	19990543	Included	-	Included	D4	
		244C	CE/EXP	500	CTV	19990544	Included	-	Included	D4	

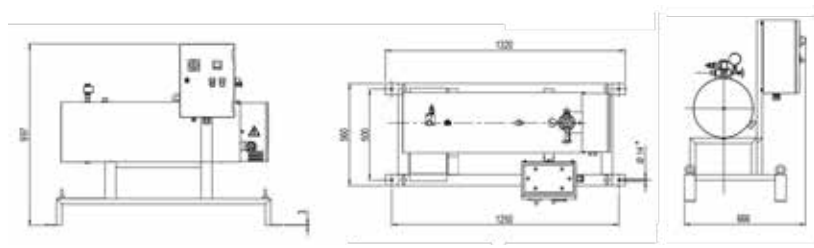
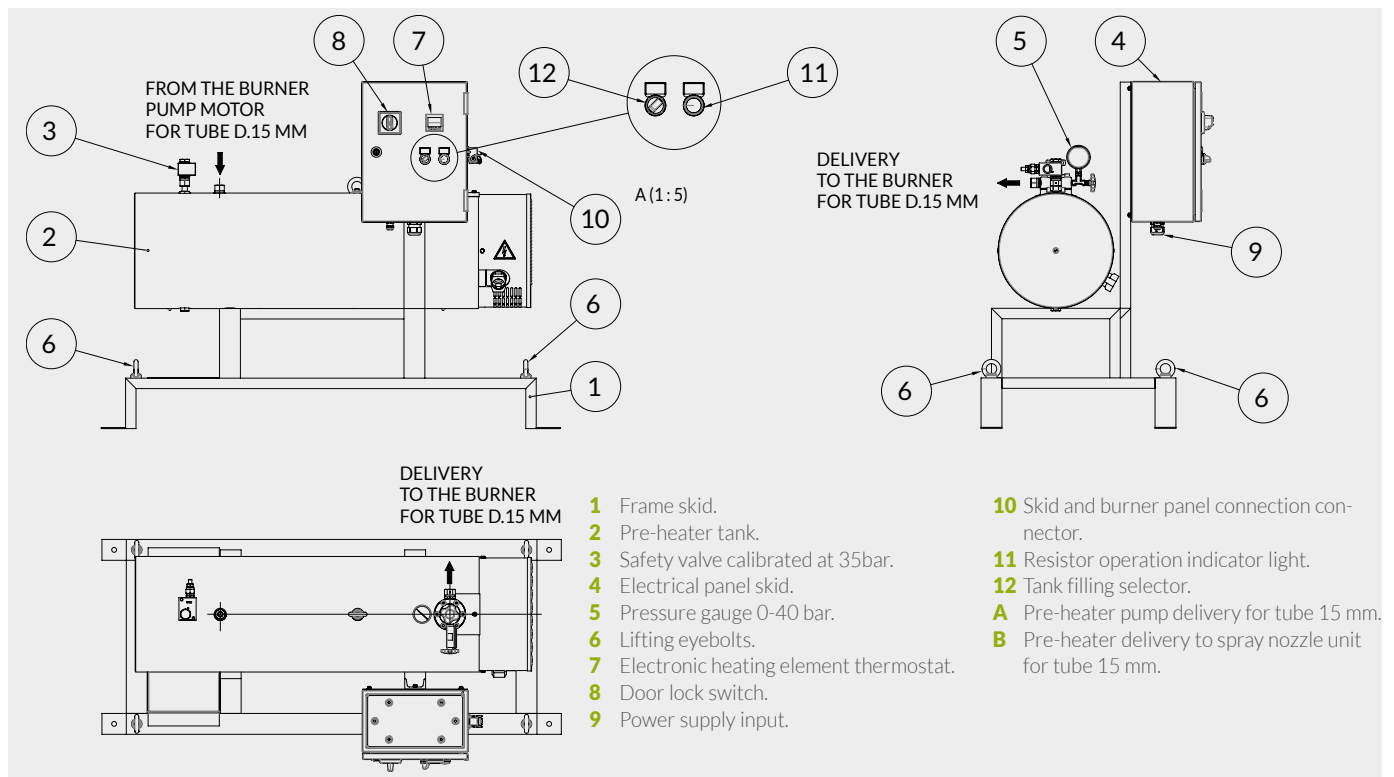
To choose the correct gas train please refer to the information on page 17 Burners Cat.

### NOTE

CTV Gas train with Valve Tightness Control.

\*\*\*) Maximum gas inlet pressure at pressure regulator.

## PUMPING UNIT



### SKID PRER 28,5 kW TBN 450-750

Part no.	Size of packaging			Weight
	L	P	H	
69840040	1470	970	1210	152


**BTL...**  
**TBL...**  
Single-stage  
light oil burners.

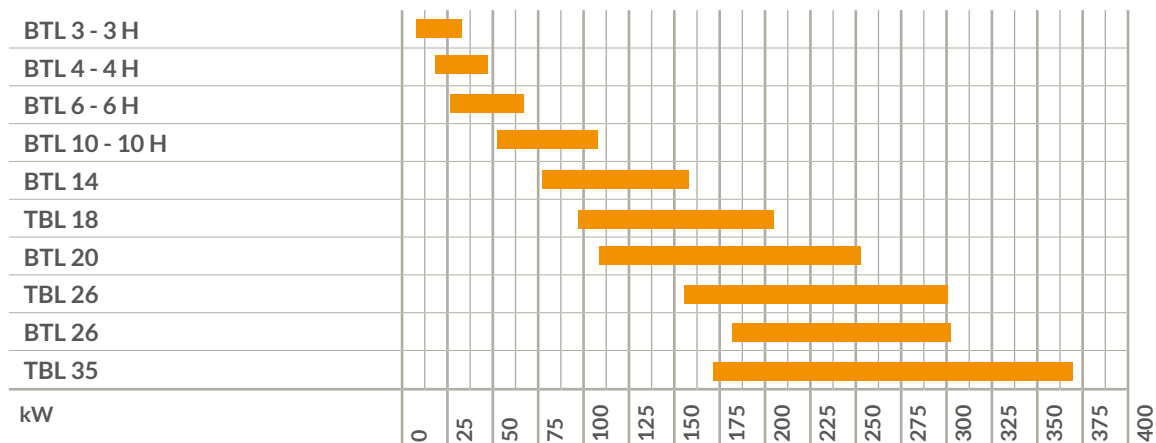
**BTL...P**  
**TBL... P**  
**TBL...LX**  
**BT 300 DSG 4T**  
**BT 350 DSG**  
Two-stage light  
oil burners.

**BT... DSPG**  
Two-stage  
progressive/  
modulating light  
oil burners with  
mechanical cam.

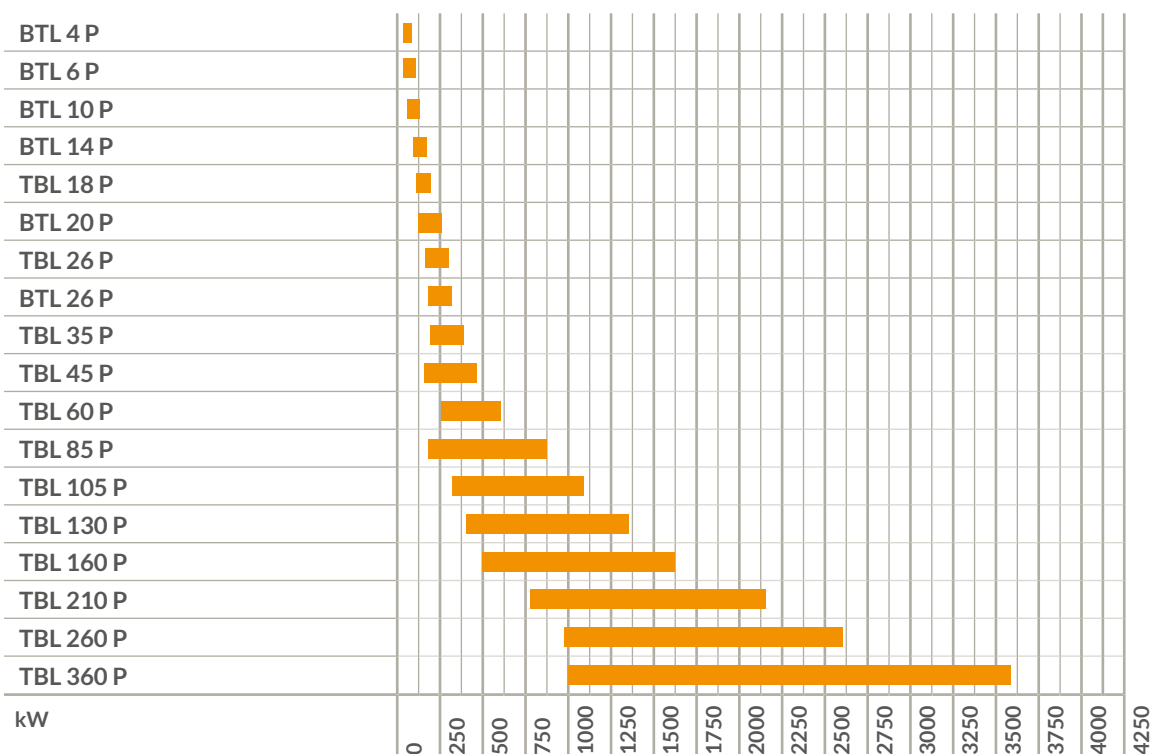
**TBL... ME**  
Two-stage  
progressive/  
modulating gas  
burners with  
electronic cam.

## SINGLE-STAGE LIGHT OIL BURNERS

 Low NOx  
Class 3 according  
to EN267

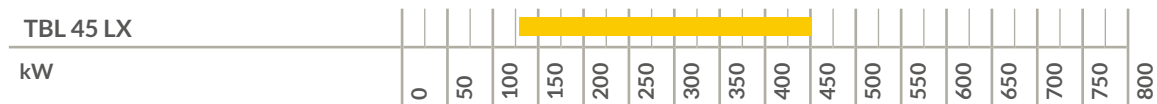


## TWO-STAGE LIGHT OIL BURNERS

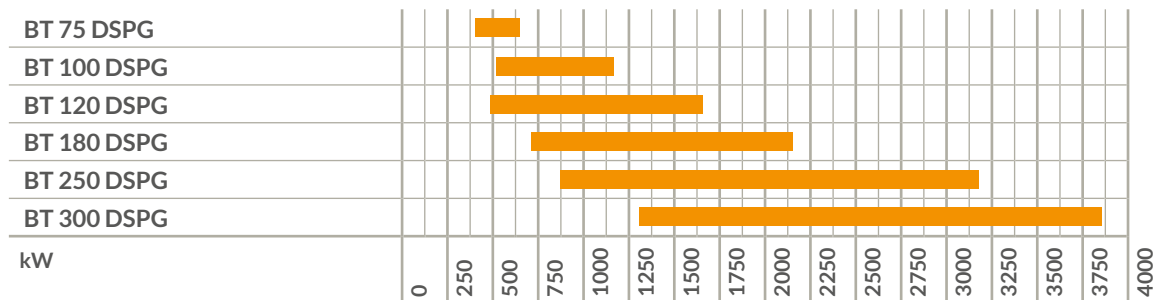




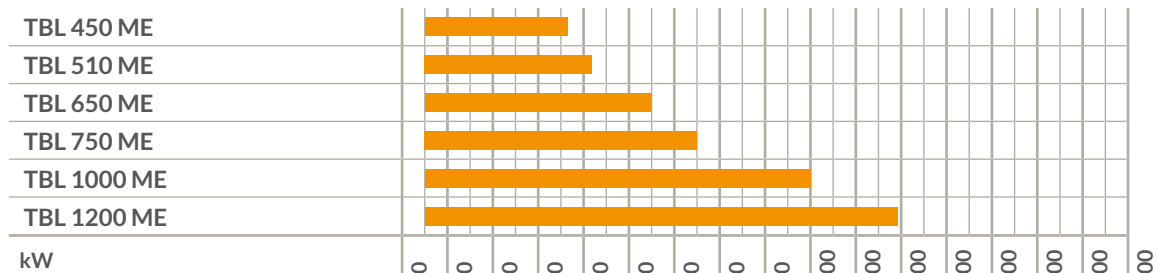
## LOW NOX LIGHT OIL BURNERS



## TWO-STAGE PROGRESSIVE LIGHT OIL BURNERS



## TWO - STAGE PROGRESSIVE LIGHT OIL BURNERS





	BTL 3	BTL 3 H
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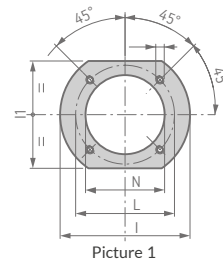
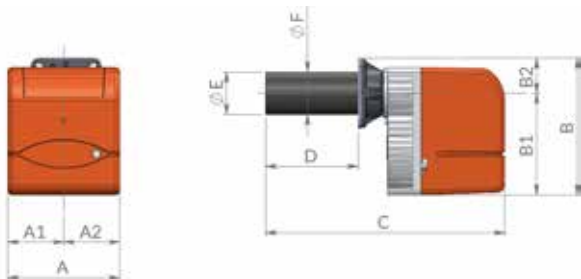
**Light oil burner. Operation:**

	single-stage	single-stage
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Fixed boiler coupling flange	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	manual
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•
Light oil preheater with variable capacity		•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

**LEGEND:**

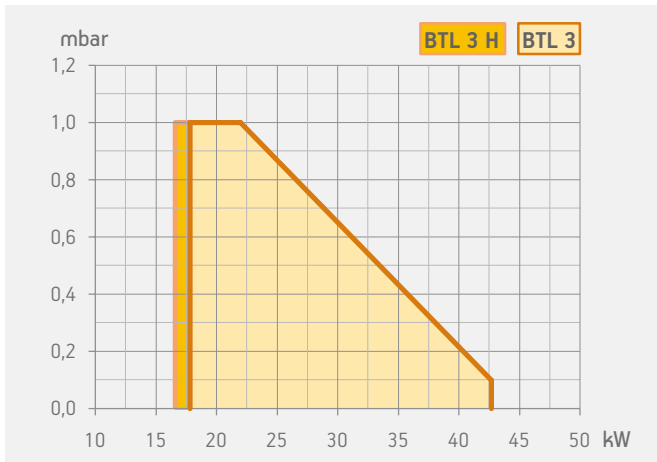
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTL 3	250	120	130	242	170	72	330	90	80	80	170	144	135 ÷ 161	M8	85	1
BTL 3 L200	250	120	130	240	170	70	430	50 ÷ 200	80	80	170	140	130 ÷ 155	M8	85	1
BTL 3 H	250	120	130	242	170	72	330	90	80	80	170	144	135 ÷ 161	M8	85	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 3	400	300	280	10
BTL 3 L200	560	310	350	10
BTL 3 H	400	300	280	9

	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	17,8 ÷ 42,7	<b>BTL 3</b>	<b>35450010</b>	1,5	1N AC 50Hz 230V	0,09	1)
	17,8 ÷ 42,7	<b>BTL 3 L200</b>	<b>35450020</b>	1,5	1N AC 50Hz 230V	0,09	1)
	16,6 ÷ 42,7	<b>BTL 3 H</b>	<b>35450011</b>	1,5	1N AC 50Hz 230V	0,09	1) 2)
Frequency 60 Hz							
	17,8 ÷ 42,7	<b>BTL 3</b>	<b>35450010</b>	1,5	1N AC 60Hz 220V	0,09	1)
	17,8 ÷ 42,7	<b>BTL 3 L200</b>	<b>35450020</b>	1,5	1N AC 60Hz 220V	0,09	1)
	16,6 ÷ 42,7	<b>BTL 3 H</b>	<b>35450011</b>	1,5	1N AC 60Hz 220V	0,09	1) 2)

### OPTIONALS

#### DESCRIPTION

BTL 3 H: 200 mm long combustion head

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 2 Equipped with light oil pre-heater with drop-stop device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.





	BTL 4	BTL 4 H	BTL 4 P
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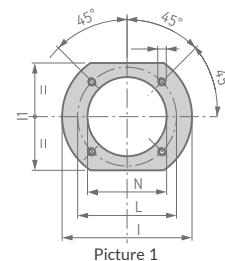
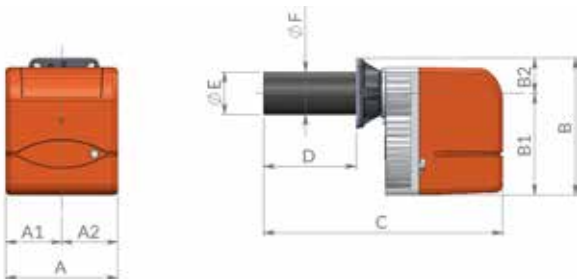
**Light oil burner. Operation:**

	single-stage	single-stage	two-stage
Adjusting the combustion head	•	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•	•
Light oil preheater with variable capacity		•	
Flame detection by phototransistor	•	•	•
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	•	•	•

LIGHT OIL BURNERS

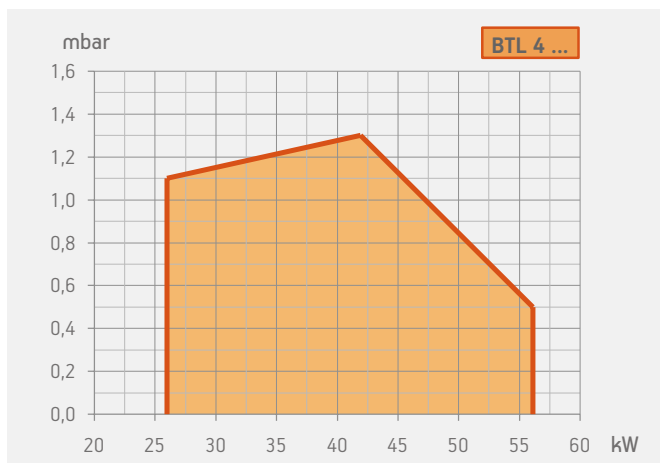
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTL 4	246	123	123	289	219	70	410	50 ÷ 105	80	80	170	140	130 ÷ 155	M8	85	1
BTL 4 L212	246	123	123	289	219	70	520	50 ÷ 212	80	80	170	140	130 ÷ 155	M8	85	1
BTL 4 H	246	123	123	289	219	70	410	50 ÷ 105	80	80	170	140	130 ÷ 155	M8	85	1
BTL 4 P	246	123	123	289	219	70	410	50 ÷ 105	80	80	170	140	130 ÷ 155	M8	85	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 4	560	310	350	12
BTL 4 L212	760	310	350	12
BTL 4 H	560	310	350	12
BTL 4 P	560	310	350	12

Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz						
26,0 ÷ 56,1	<b>BTL 4</b>	<b>35490010</b>	1,5	1N AC 50Hz 230V	0,1	1)
26,0 ÷ 56,1	<b>BTL 4 L212</b>	<b>35490022</b>	1,5	1N AC 50Hz 230V	0,1	1)
26,0 ÷ 56,1	<b>BTL 4 H</b>	<b>35490011</b>	1,5	1N AC 50Hz 230V	0,1	1) 2)
26,0 ÷ 56,1	<b>BTL 4 P</b>	<b>35500010</b>	1,5	1N AC 50Hz 230V	0,1	1)
Frequency 60 Hz						
26,0 ÷ 56,1	<b>BTL 4</b>	<b>35490010</b>	1,5	1N AC 60Hz 220V	0,1	1)
26,0 ÷ 56,1	<b>BTL 4 L212</b>	<b>35490022</b>	1,5	1N AC 60Hz 220V	0,1	1)
26,0 ÷ 56,1	<b>BTL 4 H</b>	<b>35490011</b>	1,5	1N AC 60Hz 220V	0,1	1) 2)
26,0 ÷ 56,1	<b>BTL 4 P</b>	<b>35500010</b>	1,5	1N AC 60Hz 220V	0,1	1)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 2 Equipped with light oil pre-heater with drop-stop device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	BTL 6	BTL 6 H	BTL 6 P
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	single-stage	single-stage	two-stage
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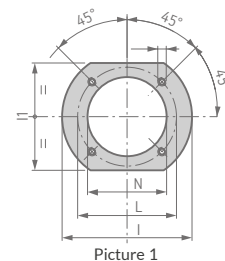
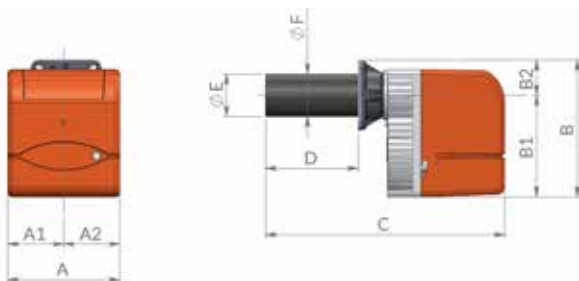
**Light oil burner. Operation:**

Adjusting the combustion head	•	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•	•
Light oil preheater with variable capacity		•	
Flame detection by phototransistor	•	•	•
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	•	•	•

**LEGEND:**

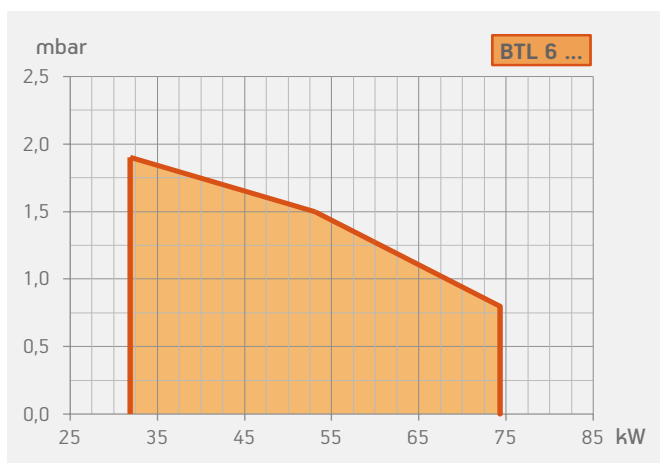
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTL 6	246	123	123	289	219	70	455	50 ÷ 150	90	90	170	140	130 ÷ 155	M8	95	1
BTL 6 L275	246	123	123	289	219	70	580	50 ÷ 275	90	90	170	140	130 ÷ 155	M8	95	1
BTL 6 H	246	123	123	289	219	70	455	50 ÷ 150	90	90	170	140	130 ÷ 155	M8	95	1
BTL 6 P	246	123	123	289	219	70	455	50 ÷ 150	90	90	170	140	130 ÷ 155	M8	95	1
BTL 6 P L275	246	123	123	289	219	70	580	50 ÷ 275	90	90	170	140	130 ÷ 155	M8	95	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 6	560	310	350	12
BTL 6 L275	760	310	350	13
BTL 6 H	560	310	350	12
BTL 6 P	560	310	350	12
BTL 6 PL275	760	310	350	12

Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz						
31,9 ÷ 74,3	<b>BTL 6</b>	<b>35510010</b>	1,5	1N AC 50Hz 230V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 L275</b>	<b>35510020</b>	1,5	1N AC 50Hz 230V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 H</b>	<b>35510011</b>	1,5	1N AC 50Hz 230V	0,1	1) 2)
31,9 ÷ 74,3	<b>BTL 6 P</b>	<b>35520010</b>	1,5	1N AC 50Hz 230V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 P L275</b>	<b>35520020</b>	1,5	1N AC 50Hz 230V	0,1	1)
Frequency 60 Hz						
31,9 ÷ 74,3	<b>BTL 6</b>	<b>35510010</b>	1,5	1N AC 60Hz 220V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 L275</b>	<b>35510020</b>	1,5	1N AC 60Hz 220V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 H</b>	<b>35510011</b>	1,5	1N AC 60Hz 220V	0,1	1) 2)
31,9 ÷ 74,3	<b>BTL 6 P</b>	<b>35520010</b>	1,5	1N AC 60Hz 220V	0,1	1)
31,9 ÷ 74,3	<b>BTL 6 P L275</b>	<b>35520020</b>	1,5	1N AC 60Hz 220V	0,1	1)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 2 Equipped with light oil pre-heater with drop-stop device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	BTL 10	BTL 10 H	BTL 10 P
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	single-stage	single-stage	two-stage
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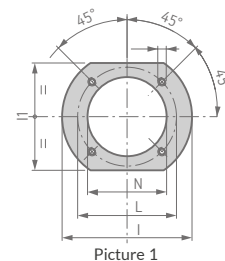
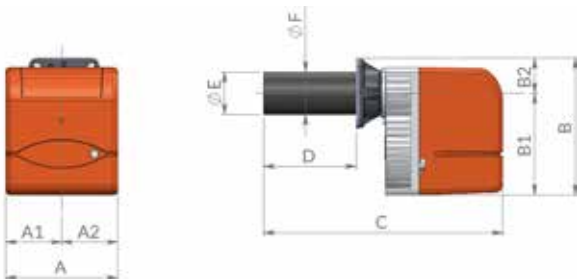
**Light oil burner. Operation:**

Adjusting the combustion head	•	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	manual	electric servomotr
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•	•
Light oil preheater with variable capacity		•	
Flame detection by phototransistor	•	•	•
Electric protection rating:	IP40	IP40	IP40
Sound-proof plastic protective cover	•	•	•

**LEGEND:**

- As standard

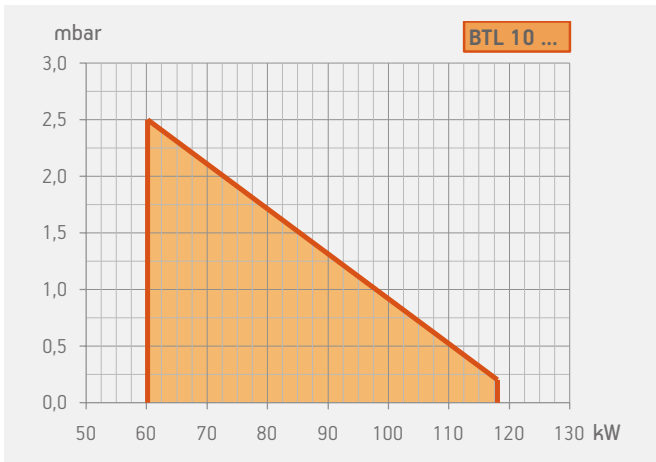
LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Picture 1

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	I1 mm	L mm	M	N mm	Pic.
BTL 10	246	123	123	289	219	70	480	50 ÷ 158	90	90	170	140	130 ÷ 155	M8	95	1
BTL 10 L250	246	123	123	289	219	70	580	50 ÷ 250	90	90	170	140	130 ÷ 155	M8	95	1
BTL 10 H	246	123	123	289	219	70	480	50 ÷ 158	90	90	170	140	130 ÷ 155	M8	95	1
BTL 10 P	246	123	123	289	219	70	480	50 ÷ 158	90	90	170	140	130 ÷ 155	M8	95	1
BTL 10 P L250	246	123	123	289	219	70	580	50 ÷ 250	90	90	170	140	130 ÷ 155	M8	95	1



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 10	560	310	350	12
BTL 10 L250	760	310	350	12
BTL 10 H	560	310	350	12
BTL 10 P	560	310	350	12
BTL 10 P L250	760	310	350	12

	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	60,2 ÷ 118,0	<b>BTL 10</b>	<b>35530010</b>	1,5	1N AC 50Hz 230V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 L250</b>	<b>35530020</b>	1,5	1N AC 50Hz 230V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 H</b>	<b>35530011</b>	1,5	1N AC 50Hz 230V	0,1	1) 2)
	60,2 ÷ 118,0	<b>BTL 10 P</b>	<b>35540010</b>	1,5	1N AC 50Hz 230V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 P L250</b>	<b>35540020</b>	1,5	1N AC 50Hz 230V	0,1	1)
Frequency 60 Hz							
	60,2 ÷ 118,0	<b>BTL 10</b>	<b>35530010</b>	1,5	1N AC 60Hz 220V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 L250</b>	<b>35530020</b>	1,5	1N AC 60Hz 220V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 H</b>	<b>35530011</b>	1,5	1N AC 60Hz 220V	0,1	1) 2)
	60,2 ÷ 118,0	<b>BTL 10 P</b>	<b>35540010</b>	1,5	1N AC 60Hz 220V	0,1	1)
	60,2 ÷ 118,0	<b>BTL 10 P L250</b>	<b>35540020</b>	1,5	1N AC 60Hz 220V	0,1	1)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 2 Equipped with light oil pre-heater with drop-stop device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	BTL 14	BTL 14 P
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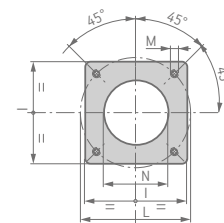
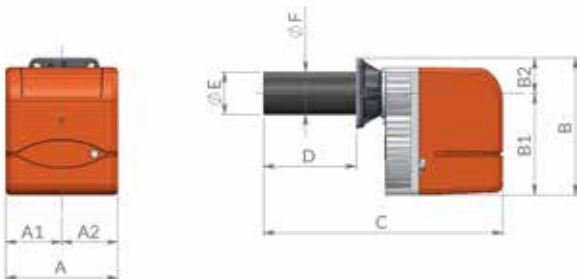
### Light oil burner. Operation:

	single-stage	two-stage
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

### LEGEND:

- As standard

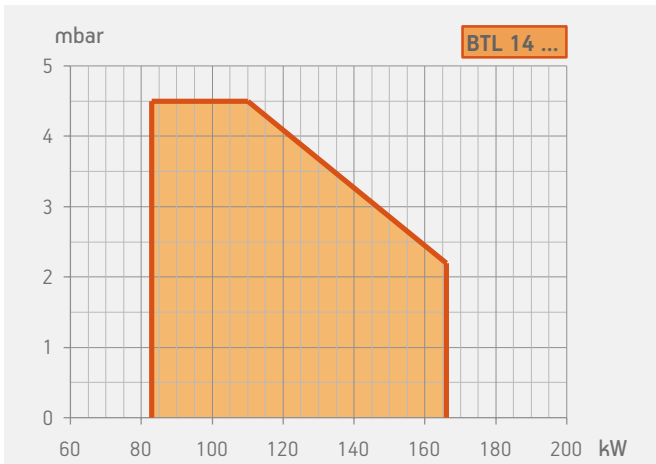
LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTL 14	303	158	145	358	275	83	620	100 ÷ 250	100	100	166	150 ÷ 200	M10	110	2
BTL 14 L500	303	158	145	358	275	83	870	100 ÷ 500	100	100	166	150 ÷ 200	M10	110	2
BTL 14 P	303	158	145	358	275	83	620	100 ÷ 250	100	100	166	150 ÷ 200	M10	110	2
BTL 14 P L500	303	158	145	358	275	83	870	100 ÷ 500	100	100	166	150 ÷ 200	M10	110	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 14	780	370	410	18
BTL 14 L500	980	370	410	19
BTL 14 P	780	370	410	18
BTL 14 P L500	980	370	410	18

	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	83 ÷ 166	<b>BTL 14</b>	<b>35610010</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
	83 ÷ 166	<b>BTL 14 L500</b>	<b>35610030</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
	83 ÷ 166	<b>BTL 14 P</b>	<b>35620010</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
	83 ÷ 166	<b>BTL 14 P L500</b>	<b>35620030</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
Frequency 60 Hz							
	83 ÷ 166	<b>BTL 14</b>	<b>35615410</b>	1,5	1N AC 60Hz 220V	0,25	1) 3)
	83 ÷ 166	<b>BTL 14 L500</b>	<b>35610030</b>	1,5	1N AC 60Hz 220V	0,18	1) 3)
	83 ÷ 166	<b>BTL 14 P</b>	<b>35625410</b>	1,5	1N AC 60Hz 220V	0,25	1) 3)
	83 ÷ 166	<b>BTL 14 P L500</b>	<b>35620030</b>	1,5	1N AC 60Hz 220V	0,18	1) 3)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 3 Soundproof lid on burner air intake.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.





	TBL 18	TBL 18 P
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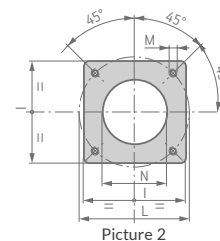
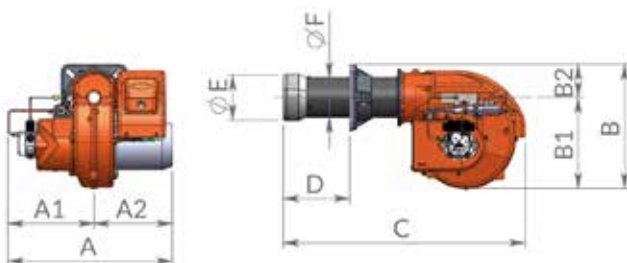
**Light oil burner. Operation:**

	single-stage	two-stage
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	hydraulic jack
Device made of sound-absorbing material to reduce fan noise	•	•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Noise level dB(A)	<73	<73

LIGHT OIL BURNERS

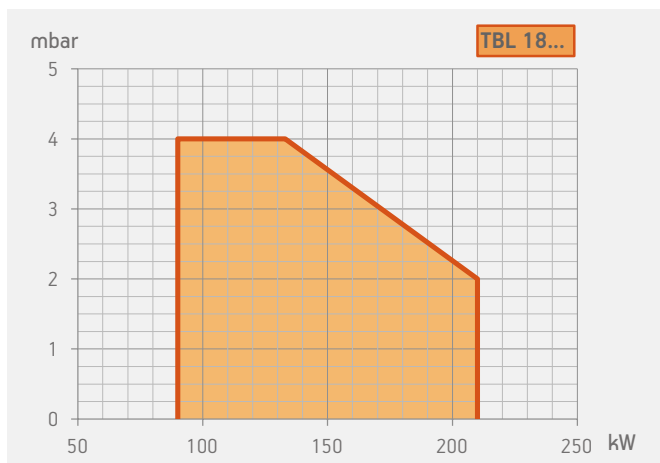
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 18	440	215	225	355	262	93	690	100 - 240	150	114	185	200 - 245	M12	155	2
TBL 18 P	440	215	225	355	262	93	690	100 - 240	150	114	185	200 - 245	M12	155	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 18	1000	600	510	22,5
TBL 18 P	1000	600	510	23,5

Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
class 2	90 ÷ 210	<b>TBL 18</b>	<b>35560010</b>	1,5	1N AC 50Hz 230V	0,25	
class 2	90 ÷ 210	<b>TBL 18 P</b>	<b>35570010</b>	1,5	1N AC 50Hz 230V	0,25	
Frequency 60 Hz							
class 2	90 ÷ 210	<b>TBL 18</b>	<b>35565410</b>	1,5	1N AC 60Hz 220V	0,25	
class 2	90 ÷ 210	<b>TBL 18 P</b>	<b>35575410</b>	1,5	1N AC 60Hz 220V	0,25	

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

#### DESCRIPTION

Soundproof burner cover (see page 329)

#### PART NO.

97980054

### LIGHT OIL BURNER ACCESSORIES

Flex hoses, light oil filter, nozzle.

### NOTE

Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	BTL 20	BTL 20 P
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	single-stage	two-stage
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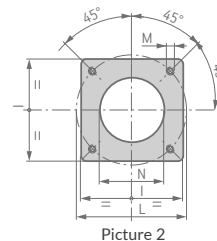
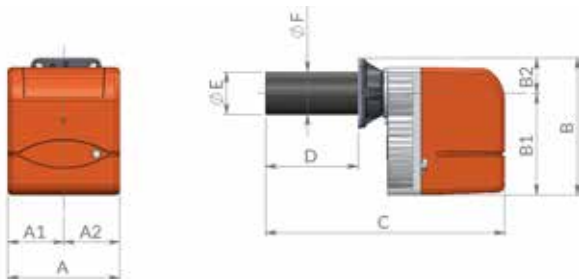
**Light oil burner. Operation:**

Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•	•
Device made of sound-absorbing material to reduce fan noise	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

**LEGEND:**

- As standard

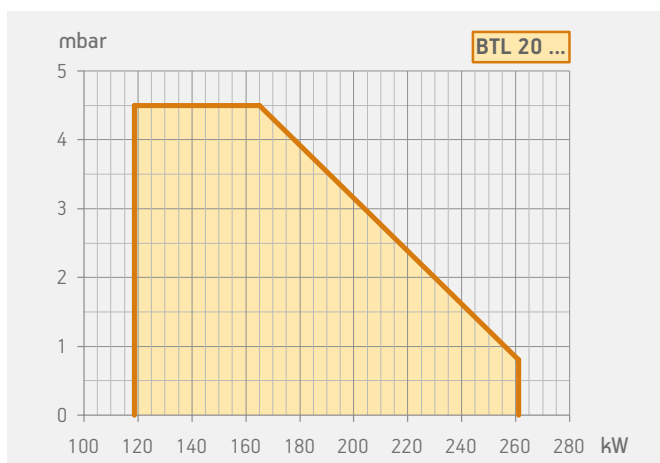
LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTL 20	303	158	145	368	275	93	645	100 ÷ 250	114	114	185	170 ÷ 210	M10	120	2
BTL 20 L500	303	158	145	368	275	93	890	100 ÷ 495	114	114	185	170 ÷ 210	M10	120	2
BTL 20 P	303	158	145	368	275	93	645	100 ÷ 250	114	114	185	170 ÷ 210	M10	120	2
BTL 20 P L500	303	158	145	368	275	93	890	100 ÷ 495	114	114	185	170 ÷ 210	M10	120	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 20	780	370	410	19
BTL 20 L500	980	370	410	19
BTL 20 P	780	370	410	20
BTL 20 P L500	980	370	410	19

Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz						
118,6 ÷ 261,0	<b>BTL 20</b>	<b>35630010</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
118,6 ÷ 261,0	<b>BTL 20 L500</b>	<b>35630030</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
118,6 ÷ 261,0	<b>BTL 20 P</b>	<b>35640010</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
118,6 ÷ 261,0	<b>BTL 20 P L500</b>	<b>35640030</b>	1,5	1N AC 50Hz 230V	0,18	1) 3)
Frequency 60 Hz						
118,6 ÷ 261,0	<b>BTL 20</b>	<b>35635410</b>	1,5	1N AC 60Hz 220V	0,25	1) 3)
118,6 ÷ 261,0	<b>BTL 20 P</b>	<b>35645410</b>	1,5	1N AC 60Hz 220V	0,25	1) 3)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

- 1 Equipped with air closure device.
  - 3 Soundproof lid on burner air intake.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



### TBL 26

### TBL 26 P

#### single-stage

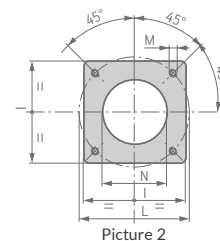
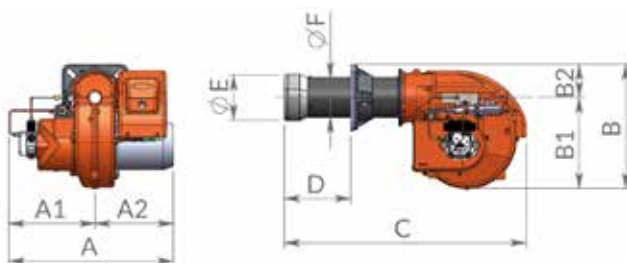
#### two-stage

#### Light oil burner. Operation:

Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	hydraulic jack
Device made of sound-absorbing material to reduce fan noise	•	•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Noise level dB(A)	<76	<76

#### LEGEND:

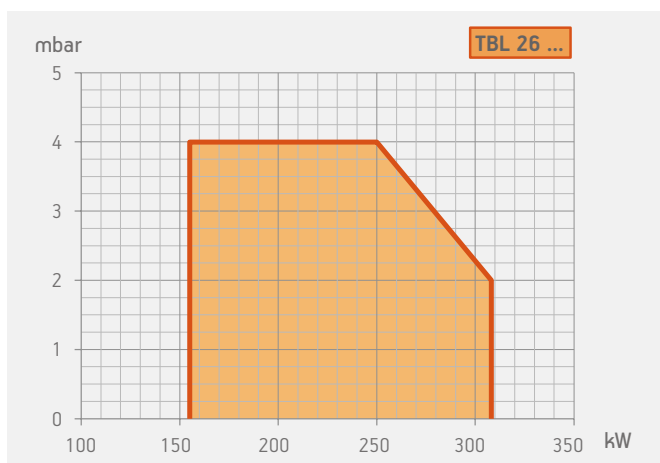
- As standard



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 26	440	215	225	355	262	93	700	100 - 240	150	114	185	200 - 245	M12	155	2
TBL 26 P	440	215	225	355	262	93	700	100 - 240	150	114	185	200 - 245	M12	155	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 26	1000	600	510	23
TBL 26 P	1000	600	510	24

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	155 ÷ 308	<b>TBL 26</b>	<b>35580010</b>	1,5	1N AC 50Hz 230V	0,37	
	class 2	155 ÷ 308	<b>TBL 26 P</b>	<b>35590010</b>	1,5	1N AC 50Hz 230V	0,37	
Frequency 60 Hz								
	class 2	155 ÷ 308	<b>TBL 26</b>	<b>35585410</b>	1,5	1N AC 60Hz 220V	0,37	
	class 2	155 ÷ 308	<b>TBL 26 P</b>	<b>35595410</b>	1,5	1N AC 60Hz 220V	0,37	

### OPTIONALS

DESCRIPTION
Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980054

### LIGHT OIL BURNER ACCESSORIES

Flex hoses, light oil filter, nozzle.

### NOTE

Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	BTL 26	BTL 26 P
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single-stage                      two-stage

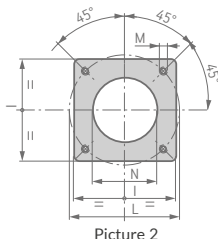
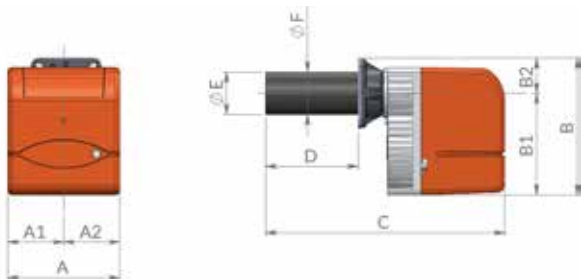
**Light oil burner. Operation:**

Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	electric servomotor
Device made of sound-absorbing material to reduce fan noise	•	•
Fuel supply circuit made of gear pump with pressure adjustment and shut-off valves	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40
Sound-proof plastic protective cover	•	•

**LEGEND:**

- As standard

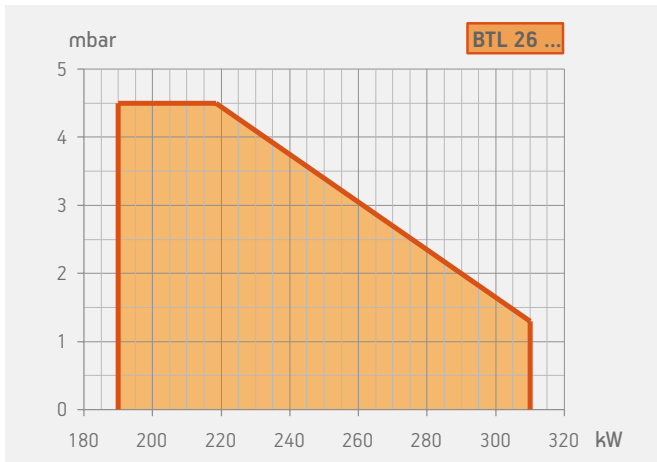
LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BTL 26	303	158	145	368	275	93	650	100 ÷ 255	135	135	185	170 ÷ 210	M10	140	2
BTL 26 L500	303	158	145	368	275	93	890	100 ÷ 490	135	135	185	170 ÷ 210	M10	140	2
BTL 26 P	303	158	145	368	275	93	650	100 ÷ 255	135	135	185	170 ÷ 210	M10	140	2
BTL 26 P L500	303	158	145	368	275	93	890	100 ÷ 490	135	135	185	170 ÷ 210	M10	140	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BTL 26	780	370	410	19
BTL 26 L500	980	370	410	18
BTL 26 P	780	370	410	20
BTL 26 P L500	980	370	410	19

	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	190 ÷ 310	<b>BTL 26</b>	<b>35650010</b>	1,5	1N AC 50Hz 230V	0,25	3)
	190 ÷ 310	<b>BTL 26 L500</b>	<b>35650020</b>	1,5	1N AC 50Hz 230V	0,25	3)
	190 ÷ 310	<b>BTL 26 P</b>	<b>35660010</b>	1,5	1N AC 50Hz 230V	0,25	3)
	190 ÷ 310	<b>BTL 26 P L500</b>	<b>35660020</b>	1,5	1N AC 50Hz 230V	0,25	3)
Frequency 60 Hz							
	190 ÷ 310	<b>BTL 26</b>	<b>35655410</b>	1,5	1N AC 60Hz 220V	0,25	3)
	190 ÷ 310	<b>BTL 26 L500</b>	<b>35655411</b>	1,5	1N AC 60Hz 220V	0,25	3)
	190 ÷ 310	<b>BTL 26 P</b>	<b>35665410</b>	1,5	1N AC 60Hz 220V	0,25	3)
	190 ÷ 310	<b>BTL 26 P L500</b>	<b>35665411</b>	1,5	1N AC 60Hz 220V	0,25	3)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzle, boiler coupling kit, plug for wiring.

### NOTE

3 Soundproof lid on burner air intake.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.





TBL 35	TBL 35 P	TBL 35 P DACA
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**Light oil burner. Operation:**

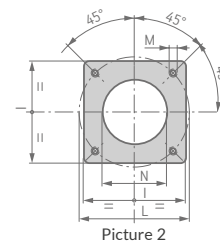
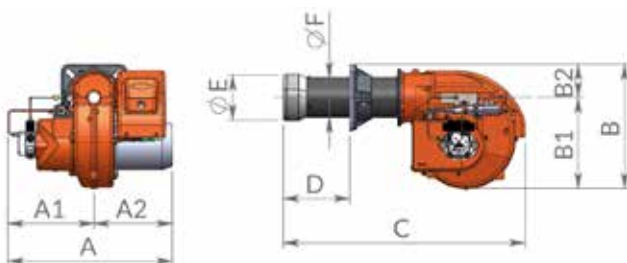
single-stage      two-stage      two-stage

Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2	class 2
Adjusting the combustion head	•	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	manual	hydraulic jack	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney			•
Device made of sound-absorbing material to reduce fan noise	•	•	•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	•	•
Flame detection by phototransistor	•	•	•
Electric protection rating:	IP40	IP40	IP40
Noise level dB(A)	<74	<74	<74

**LEGEND:**

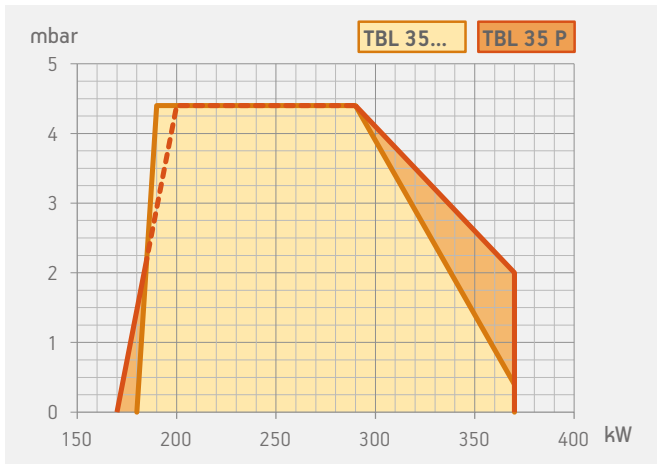
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 35	440	215	225	365	260	105	780	150 - 350	150	135	210	200 - 245	M12	155	2
TBL 35 P	440	215	225	365	260	105	780	150 - 350	150	135	210	200 - 245	M12	155	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 35	1000	600	510	26,0
TBL 35 P	1000	600	510	34,5
TBL 35 P DACA	1000	600	510	33,0

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	170 ÷ 370	<b>TBL 35</b>	<b>35680010</b>	1,5	1N AC 50Hz 230V	0,37	
	class 2	170 ÷ 370	<b>TBL 35 P</b>	<b>35690010</b>	1,5	1N AC 50Hz 230V	0,37	
	class 2	170 ÷ 370	<b>TBL 35 P DACA</b>	<b>35690110</b>	1,5	1N AC 50Hz 230V	0,37	4)
Frequency 60 Hz								
	class 2	170 ÷ 370	<b>TBL 35</b>	<b>35685410</b>	1,5	1N AC 60Hz 220V	0,37	
	class 2	170 ÷ 370	<b>TBL 35 P</b>	<b>35695410</b>	1,5	1N AC 60Hz 220V	0,37	
	class 2	170 ÷ 370	<b>TBL 35 P DACA</b>	<b>35695420</b>	1,5	1N AC 60Hz 220V	0,37	4)

### OPTIONALS

DESCRIPTION
Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 35 P/35 P DACA: line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980054

### LIGHT OIL BURNER ACCESSORIES

TBL 35 P/35 P DACA: flex hoses, nozzles, boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	TBL 45 P	TBL 45 P DACA	TBL 45 LX
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two-stage      two-stage      two-stage

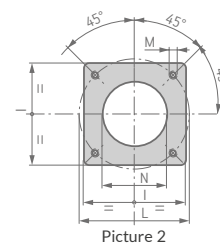
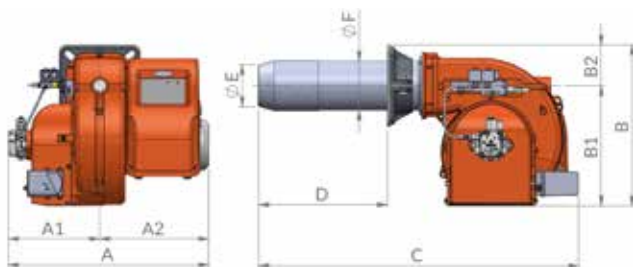
**Light oil burner. Operation:**

Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2	class 3
Adjusting the combustion head	•	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•	•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	•	•
Flame detection by phototransistor	•	•	
Flame detection by IRD photocell			•
Electric protection rating:	IP40	IP40	IP44

**LEGEND:**

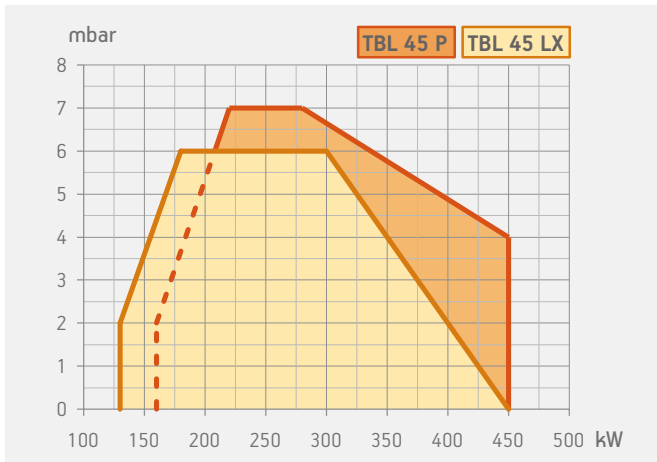
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 45 P	505	260	245	433	325	108	820	120 ÷ 350	135	133	215	200 ÷ 245	M12	150	2
TBL 45 P DACA	535	260	275	433	325	108	860	120 ÷ 350	135	133	215	200 ÷ 245	M12	150	2
TBL 45 LX	535	260	275	433	325	108	860	120 ÷ 350	135	133	215	200 ÷ 245	M12	150	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 45 P	1000	600	510	34
TBL 45 P DACA	1000	600	510	34
TBL 45 LX	1000	600	510	34

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	160 ÷ 450	TBL 45 P	35710010	1,5	1N AC 50Hz 230V	0,50	
	class 2	160 ÷ 450	TBL 45 P	35710015	1,5	3N AC 50Hz 400V	0,65	
	class 2	160 ÷ 450	TBL 45 P DACA	35710110	1,5	1N AC 50Hz 230V	0,50	4)
	class 3	130 ÷ 450	TBL 45 LX	35730010	1,5	1N AC 50Hz 230V	0,50	4)
Frequency 60 Hz								
	class 2	160 ÷ 450	TBL 45 P	35715410	1,5	1N AC 60Hz 220V	0,50	
	class 2	160 ÷ 450	TBL 45 P	35715415	1,5	1N AC 60Hz 380V	0,65	
	class 2	160 ÷ 450	TBL 45 P DACA	35715420	1,5	1N AC 60Hz 220V	0,50	4)

### OPTIONALS

DESCRIPTION
Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 45 P/45 P DACA: line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980054

### LIGHT OIL BURNER ACCESSORIES

TBL 45 P/45 P DACA: flex hoses, nozzles, boiler coupling kit, plug for wiring.  
 TBL 45 LX: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



	TBL 60 P	TBL 60 P DACA
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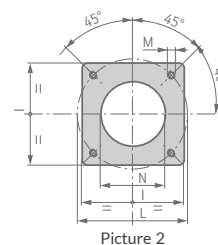
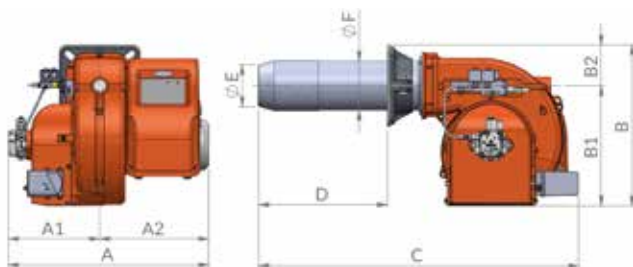
**Light oil burner. Operation:**

	two-stage	two-stage
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	•
Flame detection by phototransistor	•	•
Electric protection rating:	IP40	IP40

**LEGEND:**

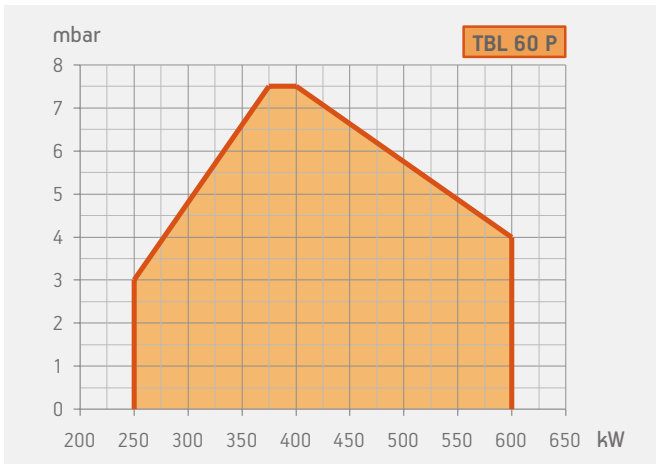
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 60 P	505	260	245	455	325	130	840	140 ÷ 350	150	152	260	225 ÷ 300	M12	167	2
TBL 60 P DACA	535	260	275	455	325	130	880	140 ÷ 350	150	152	260	225 ÷ 300	M12	167	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 60 P	1000	600	510	36
TBL 60 P DACA	1000	600	510	36

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	250 ÷ 600	<b>TBL 60 P</b>	<b>35750010</b>	1,5	3N AC 50Hz 400V	0,65	
	class 2	250 ÷ 600	<b>TBL 60 P DACA</b>	<b>35750110</b>	1,5	3N AC 50Hz 400V	0,65	4)
Frequency 60 Hz								
	class 2	250 ÷ 600	<b>TBL 60 P</b>	<b>35755410</b>	1,5	3N AC 60Hz 380V	0,65	
	class 2	250 ÷ 600	<b>TBL 60 P DACA</b>	<b>35755420</b>	1,5	3N AC 60Hz 380V	0,65	4)

### OPTIONALS

#### DESCRIPTION

Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

#### DESCRIPTION

#### PART NO.

Line filter 3/8"	98000370
Soundproof burner cover (see page 329)	97980054

### LIGHT OIL BURNER ACCESSORIES

Flex hoses, nozzles, boiler coupling kit, plug for wiring.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



TBL 85 P



BT 75 DSPG

LIGHT OIL BURNERS

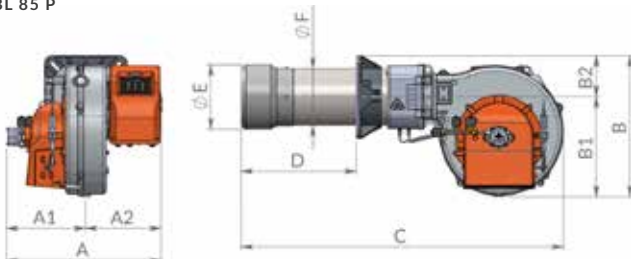
TBL 85 P	BT 75 DSPG
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	two-stage	mechanical two-stage progressive
Modulation ratio:		1:2
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve		•
Atomisation unit with magnet to control the outlet/nozzle return pins		•
Flame detection by photoresistance		•
Flame detection by photodiode	•	
Control panel with display diagram for working mode with indication lights	•	
Electric protection rating:	IP40	IP40

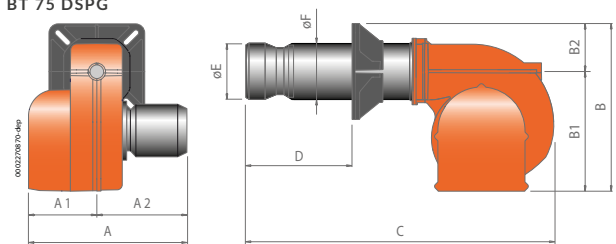
**LEGEND:**

- As standard

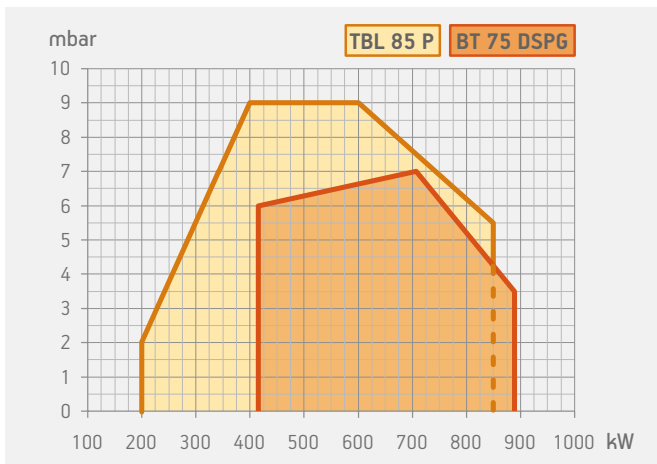
TBL 85 P



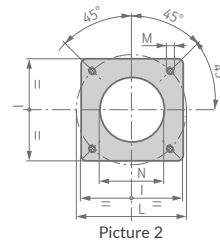
BT 75 DSPG



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 85 P	598	272	326	525	385	140	1200	200-400	180	178	280	250-325	M12	195	2
BT 75 DSPG	595	310	385	510	365	145	1215	130 ÷ 450	205	160	260	255 ÷ 300	M12	220	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 85 P	1070	800	700	79
BT 75 DSPG	1730	1030	880	140



Flange dimensions and boiler drilling template.

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	200 ÷ 850	<b>TBL 85 P</b>	<b>35830010</b>	1,5	3N AC 50Hz 400V	1,10	
		415 ÷ 889	<b>BT 75 DSPG</b>	<b>35100010</b>	1,5	3N AC 50Hz 400V	1,10	4)
Frequency 60 Hz								
	class 2	200 ÷ 850	<b>TBL 85 P</b>	<b>35835410</b>	1,5	3N AC 60Hz 380V	1,10	
		415 ÷ 889	<b>BT 75 DSPG</b>	<b>35105410</b>	1,5	3N AC 60Hz 380V	1,5+0,65	4)

LIGHT OIL BURNERS

### TO COMPLETE THE BURNER

DESCRIPTION
BT 75 DSPG: nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

DESCRIPTION	PART NO.
BT 75 DSPG: modulation kit (see page 324)	98000055
BT 75 DSPG: modulating probe (see page 324)	

### OPTIONALS

DESCRIPTION
TBL 85 P: biodiesel operation (see note 5 page 12)

### NOTE

- 3 Soundproof lid on burner air intake.
- 4 Equipped with automatic air closure device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 85 P: Soundproof burner cover (see page 329)	97980053
BT 75 DSPG: Soundproof burner cover (see page 329)	97980055

### LIGHT OIL BURNER ACCESSORIES

- TBL 85 P: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
- BT 75 DSPG: line filter, flex hoses, boiler coupling kit.





TBL 105 P



BT 100 DSPG

TBL 105 P

BT 100 DSPG

**Light oil burner. Operation:**

two-stage

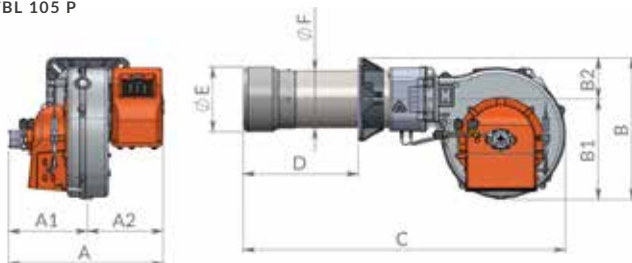
mechanical two-stage progressive

Modulation ratio:		1:2
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve		•
Atomisation unit with magnet to control the outlet/nozzle return pins		•
Flame detection by photoresistance		•
Flame detection by photodiode	•	
Control panel with display diagram for working mode with indication lights	•	
Electric protection rating:	IP40	IP40

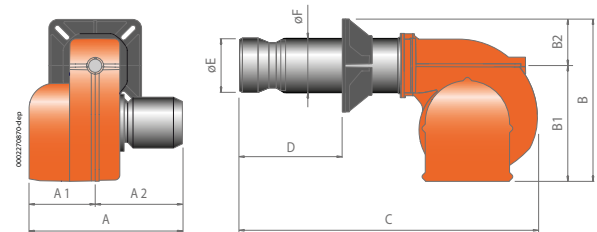
**LEGEND:**

- As standard

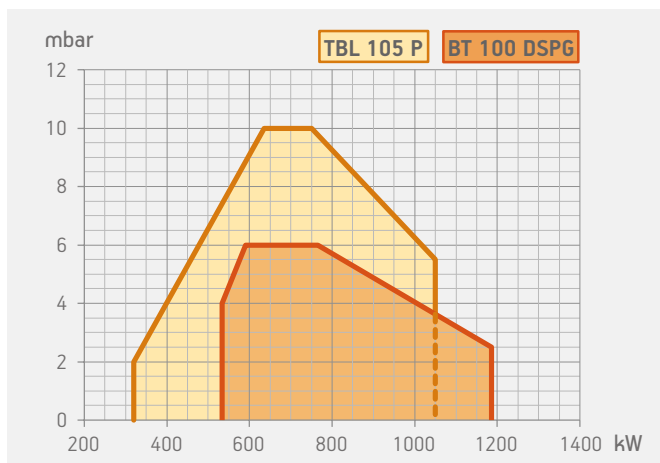
TBL 105 P



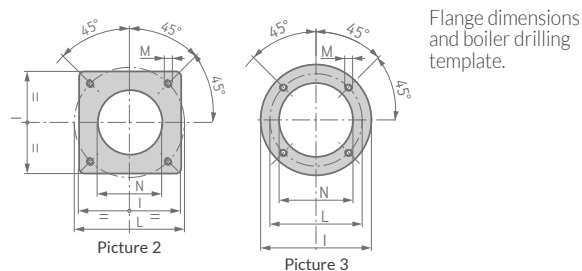
BT 100 DSPG



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 105 P	624	286	338	525	385	140	1200	200-400	180	178	280	250-325	M12	195	2
BT 100 DSPG	670	330	340	525	365	160	1415	210 ÷ 400	230	195	320	276	M16	245	3



Model	Size of packaging			Weight kg
	L	P	H	
TBL 105 P	1070	800	700	80
BT 100 DSPG	1730	1030	880	150



	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	320 ÷ 1050	<b>TBL 105 P</b>	<b>35880010</b>	1,5	3N AC 50Hz 400V	1,50	
		533 ÷ 1186	<b>BT 100 DSPG</b>	<b>3514010</b>	1,5	3N AC 50Hz 400V	1,50	4)
Frequency 60 Hz								
	class 2	320 ÷ 1050	<b>TBL 105 P</b>	<b>35885410</b>	1,5	3N AC 60Hz 380V	1,50	
		553 ÷ 1186	<b>BT 100 DSPG</b>	<b>35145410</b>	1,5	3N AC 60Hz 380V	2,60+0,65	4)

LIGHT OIL BURNERS

### TO COMPLETE THE BURNER

DESCRIPTION
BT 100 DSPG: nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

DESCRIPTION	PART NO.
BT 100 DSPG: modulation kit (see page 324)	98000055
BT 100 DSPG: modulating probe (see page 324)	

### OPTIONALS

DESCRIPTION
Biodiesel operation (see note 5 page 12)

### NOTE

- 3 Soundproof lid on burner air intake.
- 4 Equipped with automatic air closure device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 105 P: soundproof burner cover (see page 329)	97980053
BT 100 DSPG: Soundproof burner cover (see page 329)	97980055

### LIGHT OIL BURNER ACCESSORIES

TBL 105 P: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
BT 100 DSPG: line filter, flex hoses, boiler coupling kit.



TBL 130 P

### TBL 130 P

#### Light oil burner. Operation:

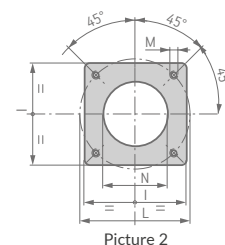
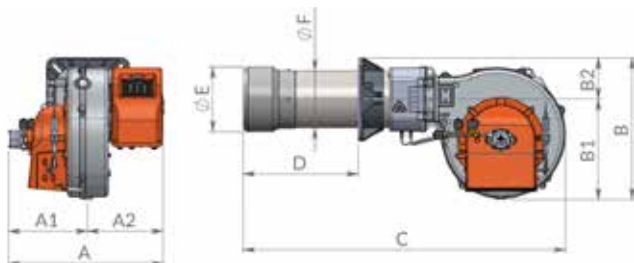
#### two-stage

Low NOx and CO emissions light oil burner according to European standard EN267:	class 2
Adjusting the combustion head	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•
High ventilation efficiency, low electrical input, low noise	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack
Combustion air intake designed to achieve optimum linearity of the air gate opening	•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•
Flame detection by photodiode	•
Control panel with display diagram for working mode with indication lights	•
Electric protection rating:	IP40

#### LEGEND:

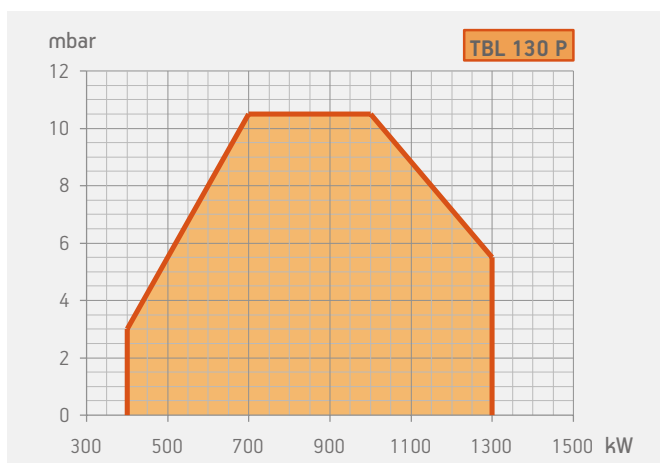
- As standard

LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 130 P	650	286	364	525	385	140	1200	200-400	180	178	280	250-325	M12	190	2
TBL 130 P DACA	680	310	370	520	380	140	1250	175 ÷ 400	180	178	280	250 ÷ 325	M12	195	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 130 P	1070	800	700	85

Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
class 2	400 ÷ 1300	<b>TBL 130 P</b>	<b>35930010</b>	1,5	3N AC 50Hz 400V	2,2	
Frequency 60 Hz							
class 2	400 ÷ 1300	TBL 130 P	<b>35935410</b>	1,5	3N AC 60Hz 380V	2,6	

### OPTIONALS

DESCRIPTION
Biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980053

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.

### NOTE

- 3 Soundproof lid on burner air intake.
- 4 Equipped with automatic air closure device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



TBL 160 P



BT 120 DSPG

TBL 160 P

BT 120 DSPG

**Light oil burner. Operation:**

two-stage

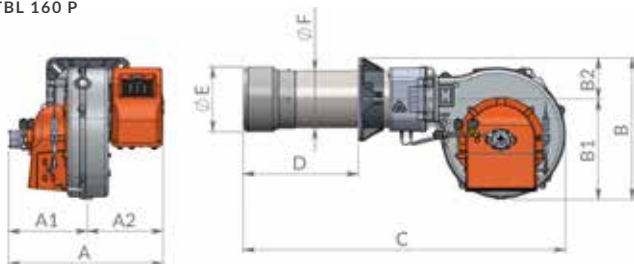
mechanical two-stage progressive

Modulation ratio:		1:3
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve		•
Atomisation unit with magnet to control the outlet/nozzle return pins		•
Flame detection by photoresistance		•
Flame detection by photodiode	•	
Control panel with display diagram for working mode with indication lights	•	
Electric protection rating:	IP40	IP40

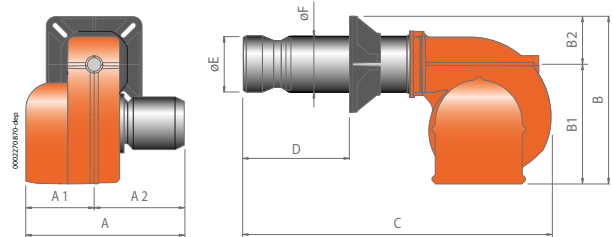
**LEGEND:**

- As standard

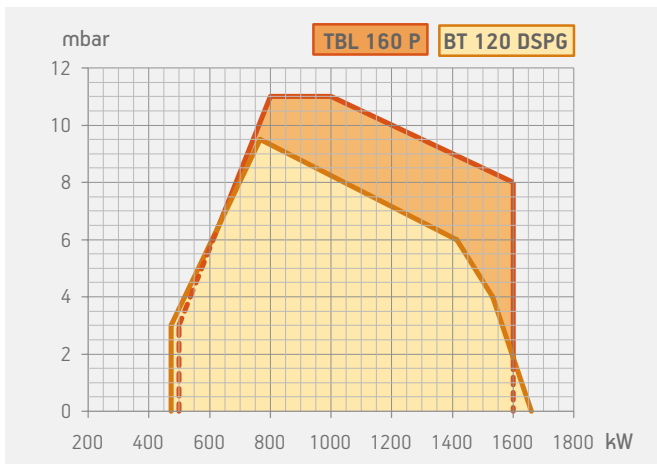
TBL 160 P



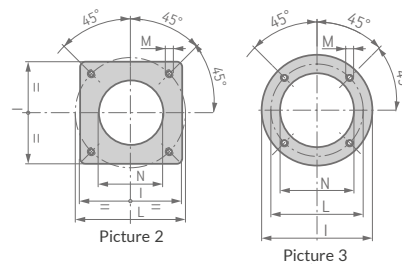
BT 120 DSPG



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 160 P	650	286	365	545	385	160	1250	210-450	224	219	320	280-370	M12	235	2
BT 120 DSPG	770	390	380	610	450	160	1415	155 ÷ 500	230	195	320	276	M16	245	3



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 160 P	1070	800	700	90
BT 120 DSPG	1730	1030	880	175



	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	500 ÷ 1600	<b>TBL 160 P</b>	<b>35980010</b>	1,5	3N AC 50Hz 400V	2,2	
		474 ÷ 1660	<b>BT 120 DSPG</b>	<b>3518010</b>	1,5	3N AC 50Hz 400V	2,2	4)
Frequency 60 Hz								
	class 2	500 ÷ 1600	<b>TBL 160 P</b>	<b>35985410</b>	1,5	3N AC 60Hz 380V	2,6	
		474 ÷ 1660	<b>BT 120 DSPG</b>	<b>35185410</b>	1,5	3N AC 60Hz 380V	3,5+1,3	4)

### TO COMPLETE THE BURNER

DESCRIPTION
BT 120 DSPG: nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

DESCRIPTION	PART NO.
BT 120 DSPG: modulation kit (see page 324)	98000055
BT 120 DSPG: modulating probe (see page 324)	

### OPTIONALS

DESCRIPTION
TBL 160 P: biodiesel operation (see note 5 page 12)

### NOTE

- 3 Soundproof lid on burner air intake.
- 4 Equipped with automatic air closure device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 160 P: soundproof burner cover (see page 329)	97980053
BT 120 DSPG: Soundproof burner cover (see page 329)	97980055

### LIGHT OIL BURNER ACCESSORIES

TBL 160 P: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
BT 120 DSPG: line filter, flex hoses, boiler coupling kit.



TBL 210 P



BT 180 DSPG

TBL 210 P

BT 180 DSPG

**Light oil burner. Operation:**

two-stage

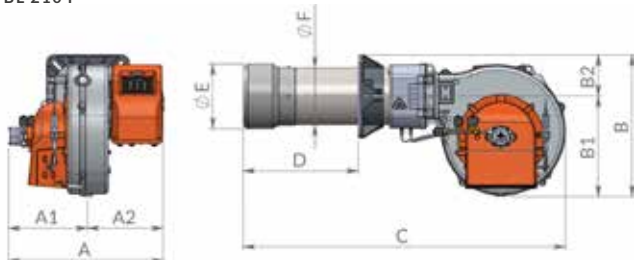
mechanical two-stage progressive

Modulation ratio:		1:3
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Combustion air intake designed to achieve optimum linearity of the air gate opening	•	
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve		•
Atomisation unit with magnet to control the outlet/nozzle return pins		•
Flame detection by photoresistance		•
Flame detection by photodiode	•	

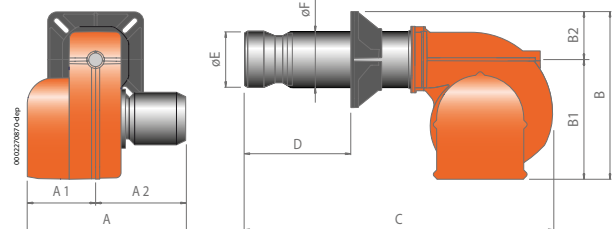
**LEGEND:**

- As standard

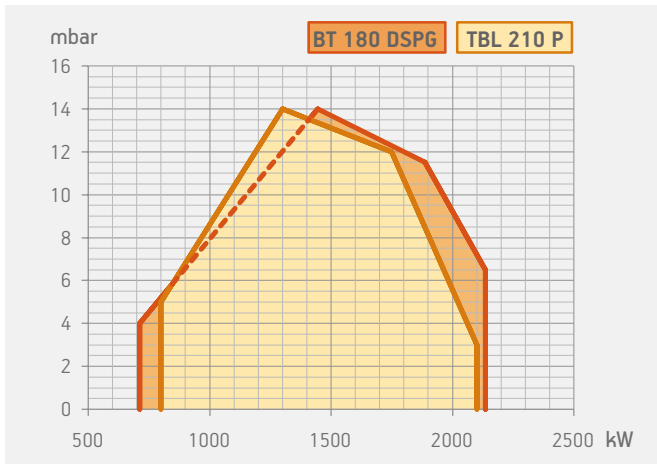
TBL 210 P



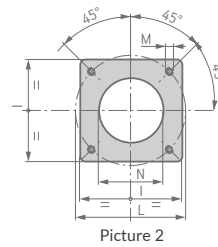
BT 180 DSPG



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 210 P	664	286	378	545	385	160	1250	210-450	250	219	320	280-370	M12	255	2
BT 180 DSPG	815	390	425	650	450	200	1700	200 ÷ 535	260	220	320	280 ÷ 370	M12	275	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 210 P	1070	800	700	94
BT 180 DSPG	1730	1030	880	220



Flange dimensions and boiler drilling template.

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	800 ÷ 2100	<b>TBL 210 P</b>	<b>36030010</b>	1,5	3N AC 50Hz 400V	3,0	
		712 ÷ 2135	<b>BT 180 DSPG</b>	<b>3522010</b>	1,5	3N AC 50Hz 400V	3,0	4)
Frequency 60 Hz								
	class 2	800 ÷ 2100	<b>TBL 210 P</b>	<b>36035410</b>	1,5	3N AC 60Hz 380V	2,6	
		712 ÷ 2135	<b>BT 180 DSPG</b>	<b>35225410</b>	1,5	3N AC 60Hz 380V	3,5+1,3	4)

LIGHT OIL BURNERS

### TO COMPLETE THE BURNER

DESCRIPTION
BT 180 DSPG: nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

DESCRIPTION	PART NO.
BT 180 DSPG: modulation kit (see page 324)	98000055
BT 180 DSPG: modulating probe (see page 324)	

### OPTIONALS

DESCRIPTION
TBL 210 P: biodiesel operation (see note 5 page 12)

### NOTE

- 3 Soundproof lid on burner air intake.
  - 4 Equipped with automatic air closure device.
- Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
TBL 210 P: Soundproof burner cover (see page 329)	97980053
BT 180 DSPG: Soundproof burner cover (see page 329)	97980057

### LIGHT OIL BURNER ACCESSORIES

TBL 210 P: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.
BT 180 DSPG: line filter, flex hoses, boiler coupling kit.





TBL 260 P



BT 250 DSPG

TBL 260 P

BT 250 DSPG

**Light oil burner. Operation:**

two-stage

mechanical two-stage progressive

Modulation ratio:		1:3
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	
Adjusting the combustion head	•	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•	•
High ventilation efficiency, low electrical input, low noise	•	
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney		•
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•	
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve		•
Atomisation unit with magnet to control the outlet/nozzle return pins		•
Flame detection by photoresistance	•	•
Flame detection by photodiode	•	
Control panel with display diagram for working mode with indication lights	•	
Electric protection rating:	IP40	IP40

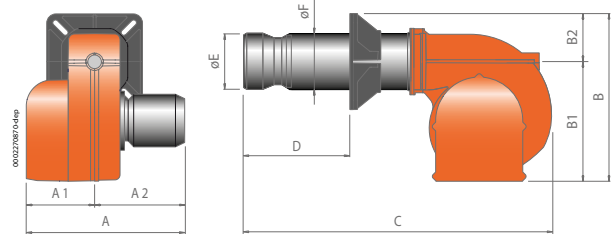
**LEGEND:**

- As standard

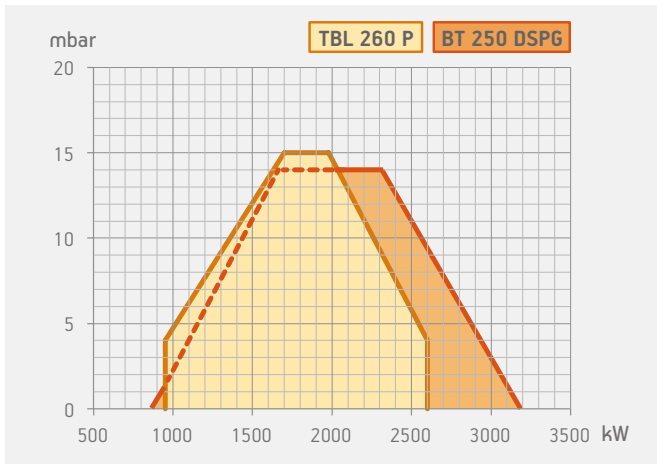
TBL 260 P



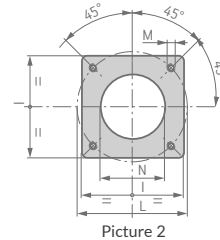
BT 250 DSPG



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 260 P	745	320	425	557	397	160	1250	210-450	250	219	320	280-370	M12	255	2
BT 250 DSPG	1000	520	480	740	580	160	1700	235 ÷ 560	260	220	320	280 ÷ 370	M12	280	2



Model	Size of packaging			Weight kg
	L	P	H	
TBL 260 P	1070	870	720	105
BT 250 DSPG	1030	1150	1010	256



Flange dimensions and boiler drilling template.

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	950 ÷ 2600	<b>TBL 260 P</b>	<b>36060010</b>	1,5	3N AC 50Hz 400V	5,5	
		873 ÷ 3186	<b>BT 250 DSPG</b>	<b>3526010</b>	1,5	3N AC 50Hz 400V	7,5	4)
Frequency 60 Hz								
	class 2	950 ÷ 2600	<b>TBL 260 P</b>	<b>36065410</b>	1,5	3N AC 60Hz 380V	7,5	
		873 ÷ 3186	<b>BT 250 DSPG</b>	<b>35265410</b>	1,5	3N AC 60Hz 380V	9,0+1,3	4)

### TO COMPLETE THE BURNER

#### DESCRIPTION

BT 250 DSPG: nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

#### DESCRIPTION

BT 250 DSPG: modulation kit (see page 324)

#### PART NO.

98000055

BT 250 DSPG: modulating probe (see page 324)

### OPTIONALS

#### DESCRIPTION

TBL 260 P: biodiesel operation (see note 5 page 12)

### ACCESSORIES AVAILABLE ON REQUEST

#### DESCRIPTION

TBL 260 P: Soundproof burner cover (see page 329)

#### PART NO.

97980053

BT 250 DSPG: Soundproof burner cover (see page 329)

97980057

### LIGHT OIL BURNER ACCESSORIES

TBL 260 P: line filter, flex hoses, nozzles, boiler coupling kit, plug for wiring.

BT 250 DSPG: line filter, flex hoses, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



BT 300 DSPG

### BT 300 DSPG

**Light oil burner. Operation:**

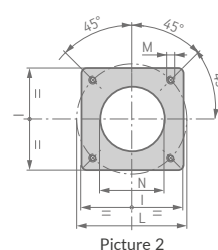
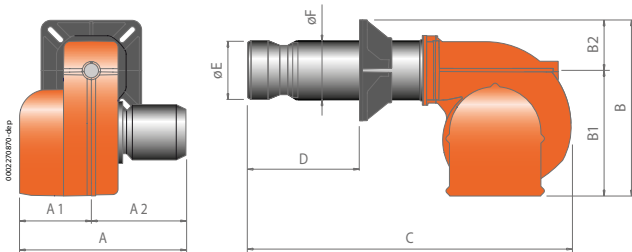
mechanical two-stage progressive

Modulation ratio:	1:3
Adjusting the combustion head	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•
Combustion air intake with butterfly valve. Air flow adjustment:	mechanical cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	•
Fuel supply circuit made of gear pump with pressure adjustment and control flow valve	•
Atomisation unit with magnet to control the outlet/nozzle return pins	•
Flame detection by photoresistance	•
Electric protection rating:	IP40

LIGHT OIL BURNERS

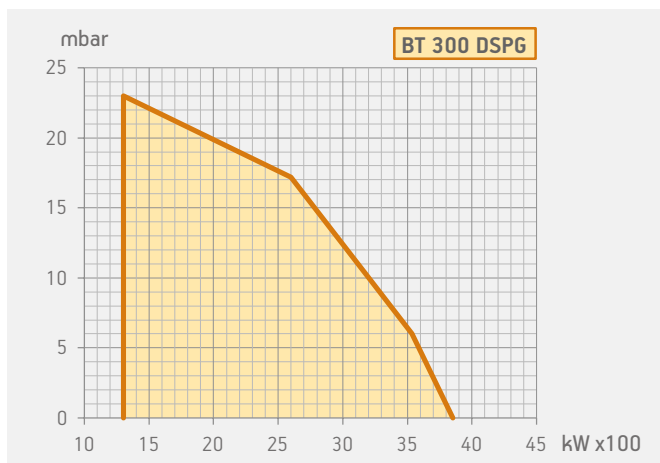
**LEGEND:**

- As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
BT 300 DSPG	1000	520	480	800	580	220	1900	245 ÷ 605	360	275	440	400 ÷ 540	M20	380	2



Model	Size of packaging			Weight kg
	L	P mm	H	
BT 300 DSPG	2030	1150	1010	290

Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz						
1304 ÷ 3854	<b>BT 300 DSPG</b>	<b>3530010</b>	1,5	3N AC 50Hz 400V	7,5	4)
Frequency 60 Hz						
1304 ÷ 3854	<b>BT 300 DSPG</b>	<b>35305410</b>	1,5	3N AC 60Hz 380V	9,0+1,3	4)

### TO COMPLETE THE BURNER

DESCRIPTION
Nozzle with 1 ÷ 3 ratio (see page 325)

### MODULATING MODE

DESCRIPTION	PART NO.
Modulation kit (see page 324)	98000055
Modulating probe (see page 324)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980057

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, boiler coupling kit.
---

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



TBL 360 P

### TBL 360 P

#### Light oil burner. Operation:

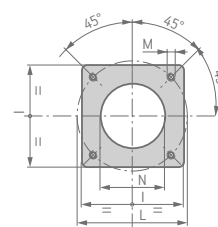
#### two-stage

Low NOx and CO emissions light oil burner according to European standard EN267:	class 2
Adjusting the combustion head	•
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	•
Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers	•
Combustion air intake with butterfly valve. Air flow adjustment:	hydraulic jack
Fuel supply circuit made of gear pump with pressure adjustment, shut-off valves and safety valve	•
Flame detection by IRD photocell	•
Control panel with display diagram for working mode with indication lights	•
Electric protection rating:	IP40

#### LEGEND:

- As standard

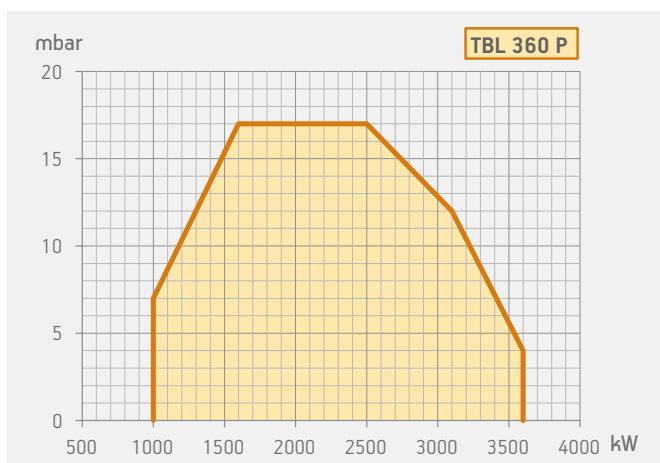
LIGHT OIL BURNERS



Flange dimensions and boiler drilling template.

Picture 2

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 360 P	880	445	425	555	395	160	1280	240-480	270	219	320	310-370	M12	275	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 360 P	1070	1070	810	154

Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
class 2	1000 ÷ 3600	<b>TBL 360 P</b>	<b>36100010</b>	1,5	3N AC 50Hz 400V	7,5	
Frequency 60 Hz							
class 2	1000 ÷ 3600	<b>TBL 360 P</b>	<b>36105410</b>	1,5	3N AC 60Hz 380V	9,2	

LIGHT OIL BURNERS

### OPTIONALS

DESCRIPTION
Biodiesel operation

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980057

### LIGHT OIL BURNER ACCESSORIES

Flex hoses, light oil filter, nozzle
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### NOTE

4 Equipped with automatic air closure device.  
 Net calorific value of light oil:  $H_i = 42,70 \text{ MJ/kg} = 10200 \text{ kcal/kg}$ .

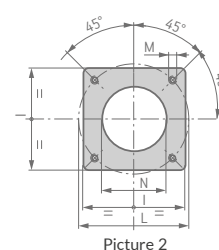
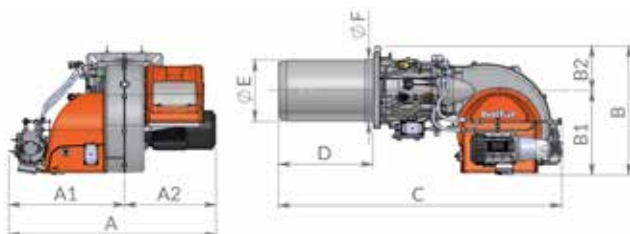


LIGHT OIL BURNERS

	TBL 450 ME	TBL 510 ME
<b>Light oil burner. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:4	1:4
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Electronic motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, flow regulator valve with servomotor, shut-off valve, two safety valves, maximum pressure switch	●	●
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP40 *)	IP40 *)
Sound-proof plastic protective cover	●	●

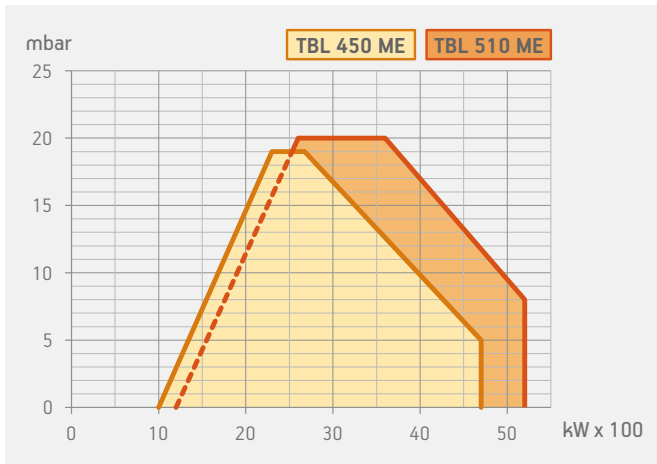
**LEGEND:**

\*) On request IP54; ○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 450 ME	1200	670	530	820	535	285	1790	600	389	410	480	520 - 600	M20	415	2
TBL 510 ME	1313	733	580	820	535	285	1805	600	389	410	480	520 - 600	M20	415	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 450 ME	2065	1525	1200	300
TBL 510 ME	2065	1525	1200	303

Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
class 2	1000 ÷ 4700	<b>TBL 450 ME</b>	<b>36130010</b>	1,5	3N AC 50Hz 400V	9,2+1,5	4)
class 2	1200 ÷ 5200	<b>TBL 510 ME</b>	<b>36160010</b>	1,5	3N AC 50Hz 400V	11,0+1,5	4)
Frequency 60 Hz							
class 2	1000 ÷ 4700	<b>TBL 450 ME</b>	<b>36135410</b>	1,5	3N AC 60Hz 380V	9,2+1,5	4)
class 2	1200 ÷ 5200	<b>TBL 510 ME</b>	<b>36165410</b>	1,5	3N AC 60Hz 380V	11,0+1,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzle with 1÷4 ratio (see page 325)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



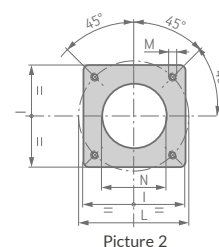
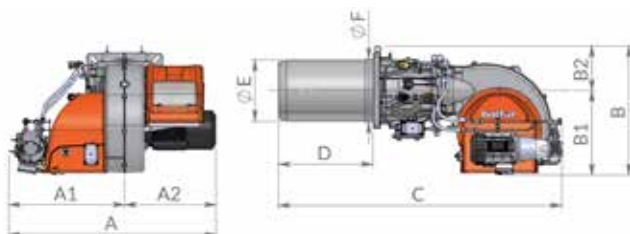


LIGHT OIL BURNERS

	TBL 650 ME	TBL 750 ME
<b>Light oil burner. Operation:</b>	<b>electronic modulation</b>	<b>electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:4	1:4
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Electronic motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, flow regulator valve with servomotor, shut-off valve, two safety valves, maximum pressure switch	●	●
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP40 *)	IP40 *)
Sound-proof plastic protective cover	●	●

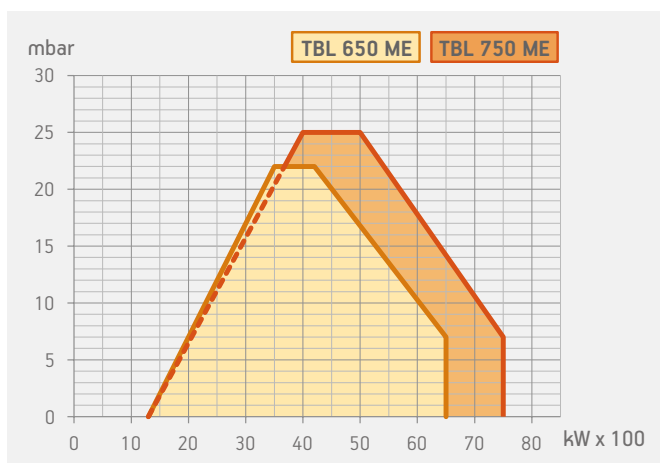
**LEGEND:**

\*) On request IP54; ○ Optional; ● As standard



Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 650 ME	1313	733	580	820	535	285	1805	600	389	410	480	520 - 600	M20	415	2
TBL 750 ME	1380	733	647	820	535	285	1805	600	389	410	480	520 - 600	M20	415	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 650 ME	2065	1525	1200	330
TBL 750 ME	2065	1525	1200	360

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	1300 ÷ 6500	<b>TBL 650 ME</b>	<b>36190010</b>	1,5	3N AC 50Hz 400V	15,0+2,2	4)
	class 2	1300 ÷ 7500	<b>TBL 750 ME</b>	<b>36220010</b>	1,5	3N AC 50Hz 400V	18,5+2,2	4)
Frequency 60 Hz								
	class 2	1300 ÷ 6500	<b>TBL 650 ME</b>	<b>36195410</b>	1,5	3N AC 60Hz 380V	15,0+2,2	4)
	class 2	1300 ÷ 7500	<b>TBL 750 ME</b>	<b>36225410</b>	1,5	3N AC 60Hz 380V	18,5+2,2	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324)	98000059
Modulating probe for LCM 100 (see page 324)	
Nozzle with 1÷4 ratio (see page 325)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover (see page 329)	97980059

### LIGHT OIL BURNER ACCESSORIES

Line filter, flex hoses, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.



TBL 1000



TBL 1200

TBL 1000 ME

TBL 1200 ME

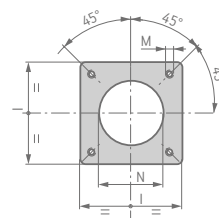
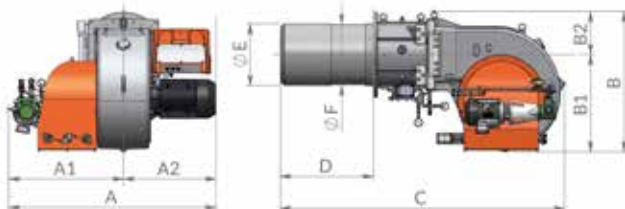
**Light oil burner. Operation:**

	modulating electronic	modulating electronic
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:5	1:4
Low NOx and CO emissions light oil burner according to European standard EN267:	class 2	class 2
Maintenance facilitated by the possibility of removing the combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electric servomotor	electric servomotor
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Electric motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP40 *)	IP40 *)
Sound-proof plastic protective cover	●	●

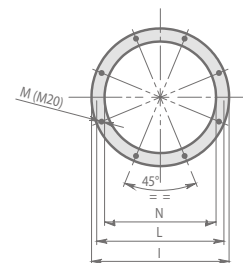
LIGHT OIL BURNERS

**LEGEND:**

\*) On request IP54; ○ Optional; ● As standard



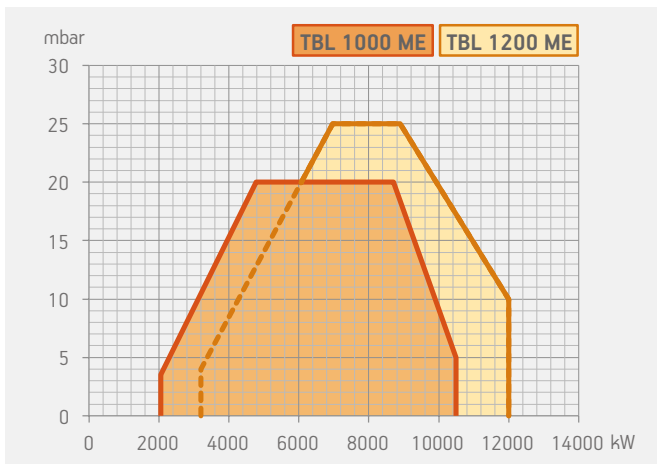
Picture 1



Picture 2

Flange dimensions and boiler drilling template.

Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	C mm	D mm	D1 mm	E mm	F mm	I mm	L mm	M	N mm	Pic.
TBL 1000 ME	1 530	880	650	1050	770	280	1924-2014	632-722	1292	426	432	520	-	M20	462	1
TBL 1200 ME	1650	900	750	1130	780	350	2300	750	-	496	503	685	630	M20	550	2



Model	Size of packaging			Weight kg
	L	P mm	H	
TBL 1000 ME	2020	1530	1050	447
TBL 1200 ME	2610	1760	1470	637

	Emissions class	Thermal output kW	Model	Part no.	Max visc. °E at 20°C	Electrical supply	Motor kW	Note
Frequency 50 Hz								
	class 2	2050 ÷ 10500	<b>TBL 1000 ME</b>	<b>36250010</b>	1,5	3N AC 50Hz 400V	22+4	4)
	class 2	3160 ÷ 12000	<b>TBL 1200 ME</b>	<b>36290010</b>	1,5	3N AC 50Hz 400V	22+4	4)
Frequency 60 Hz								
	class 2	2050 ÷ 10500	<b>TBL 1000 ME</b>	<b>36255410</b>	1,5	3N AC 50Hz 400V	30+3,5	4)
	class 2	3160 ÷ 12000	<b>TBL 1200 ME</b>	<b>36295410</b>	1,5	3N AC 50Hz 400V	30+4,8	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulation kit (see page 324)	98000059
Modulation probe (see page 324)	
TBL 1000 ME: nozzle (see page 325)	
TBL 1200 ME: nozzle included	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980061

### LIGHT OIL BURNER ACCESSORIES

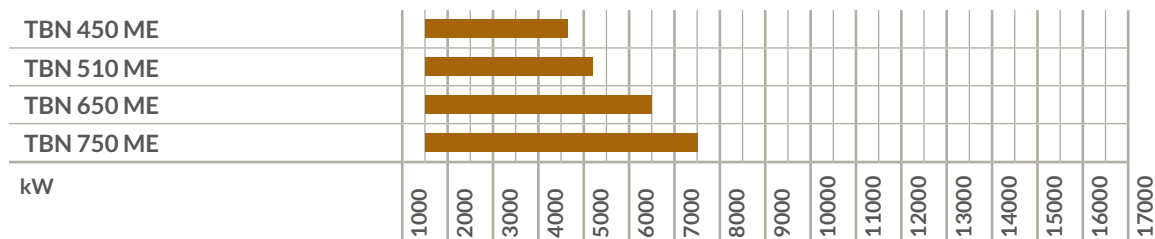
Line filter, flex hoses, boiler coupling kit.

### NOTE

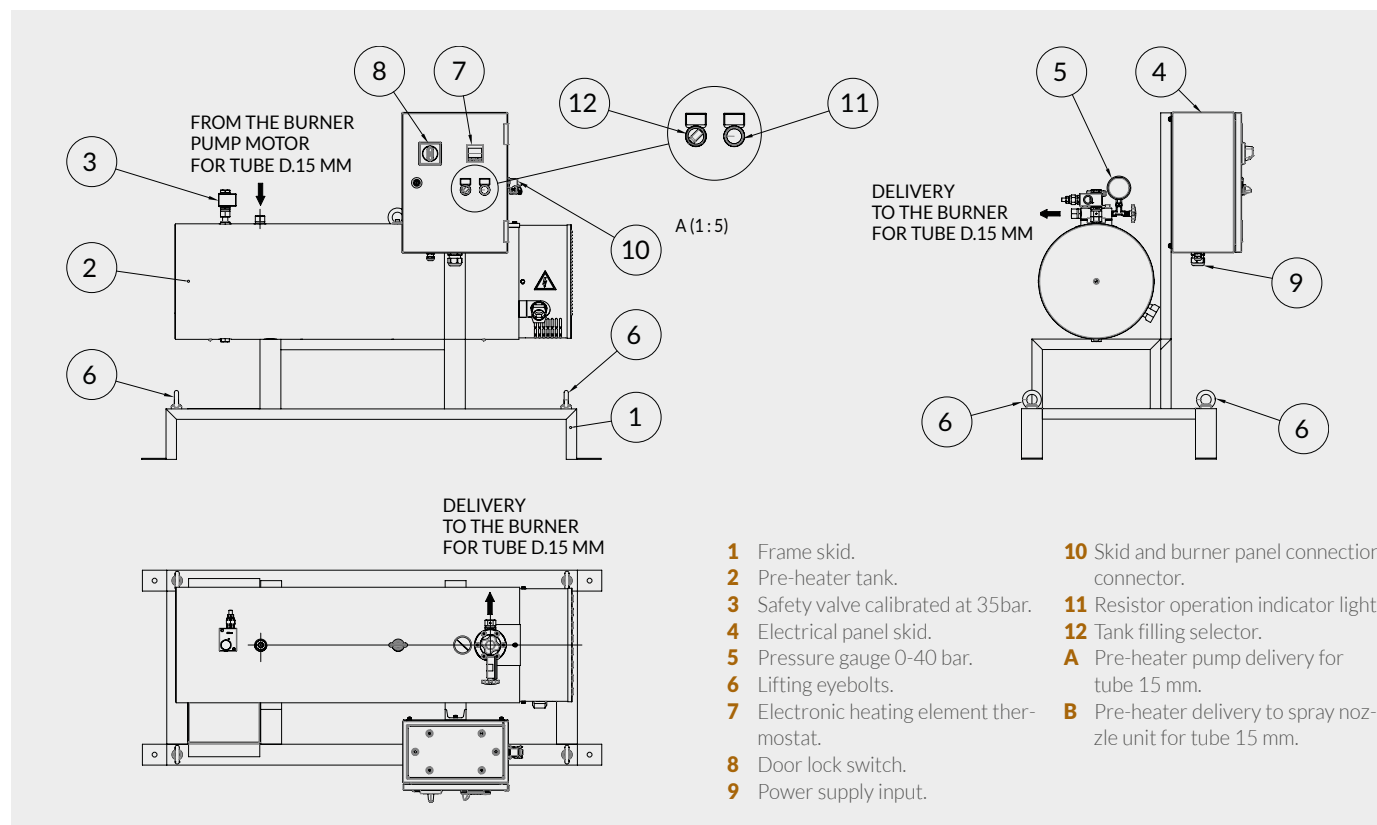
4 Equipped with automatic air closure device.  
Net calorific value of light oil: Hi = 42,70 MJ/kg = 10200 kcal/kg.

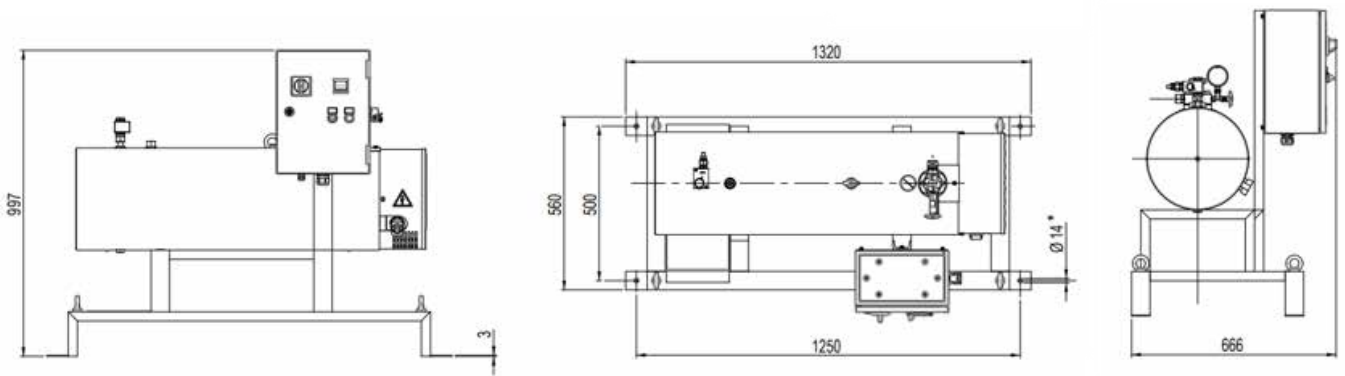
**TBN...ME**  
Two-stage progressive / modulating heavy oil burners with electronic cam.

## TWO - STAGE PROGRESSIVE HEAVY OIL BURNERS



## PUMPING UNIT





**SKID PRER 28,5 kW TBN 450-750**

Part no.	Size of packaging			Weight kg
	L	P mm	H	
69840040	1470	970	1210	152



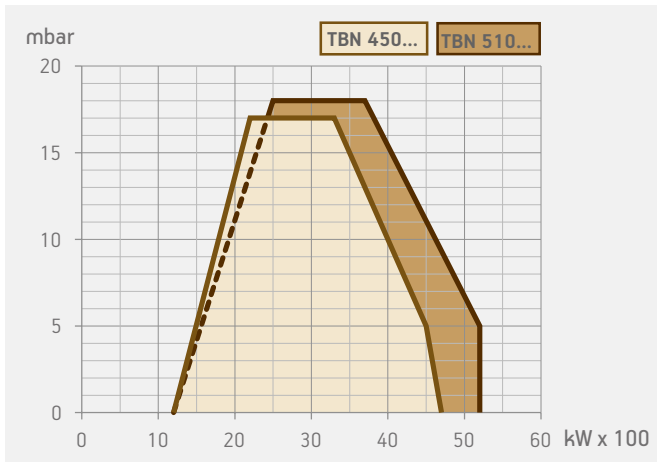
Suitable for fuel oil with a maximum viscosity of 50°E at 50°C

	TBN 450 ME	TBN 510 ME
<b>Heavy oil burner. Operation:</b>	<b>Electronic modulation</b>	<b>Electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:4	1:4
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electronic cam	electronic cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Electronic motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Electric fuel preheater with 50L volume with safety valve, self-cleaning filter, thermometer, pressure gauge, minimum and safety thermostats, electronic temperature regulator with digital interface and light signals. To be ordered separately	to be ordered separately	
Heating elements for pump, valves and atomisation unit	●	●
Atomisation unit with nozzle-closing pin	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP40	IP40

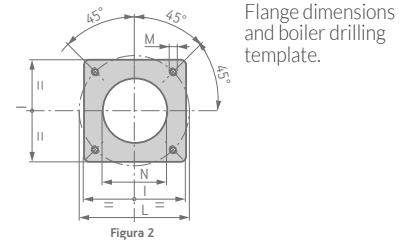
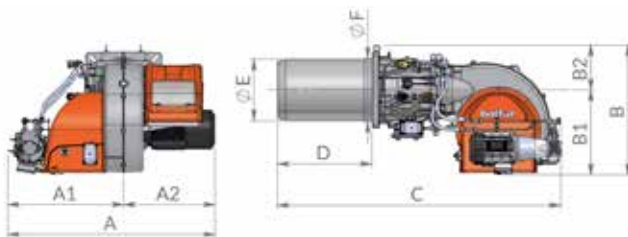
NOTE: suitable for heavy oil up to 50°E at 50°C

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBN 450 ME	2065	1525	1200	405
TBN 510 ME	2065	1525	1200	407



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	G	H mm	I mm	L mm	M	N mm
TBN 450 ME	1265	735	530	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	520-600	M20	430
TBN 510 ME	1265	735	530	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	520-600	M20	430

	Thermal output kW	Model	Part no.	Max visc. °E at 50°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	1000 ÷ 4700	<b>TBN 450 ME</b>	<b>26450010</b>	50	3N AC 50Hz 400V	9,2+2,2	4)
	1200 ÷ 5200	<b>TBN 510 ME</b>	<b>26480010</b>	50	3N AC 50Hz 400V	11,0+2,2	4)
Frequency 60 Hz							
	1000 ÷ 4700	<b>TBN 450 ME</b>	<b>26455410</b>	50	3N AC 60Hz 400V	9,2+2,2	4)
	1200 ÷ 5200	<b>TBN 510 ME</b>	<b>26485410</b>	50	3N AC 60Hz 400V	13,0+2,2	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	9800059
Nozzle (see page 325)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover -20 dB(A) (see page 329)	97980059

### DUAL FUEL BURNERS ACCESSORIES

Flex hoses, dense naphtha filter, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value heavy oil: Hi = 40,19 MJ/kg = 9600 kcal/kg.





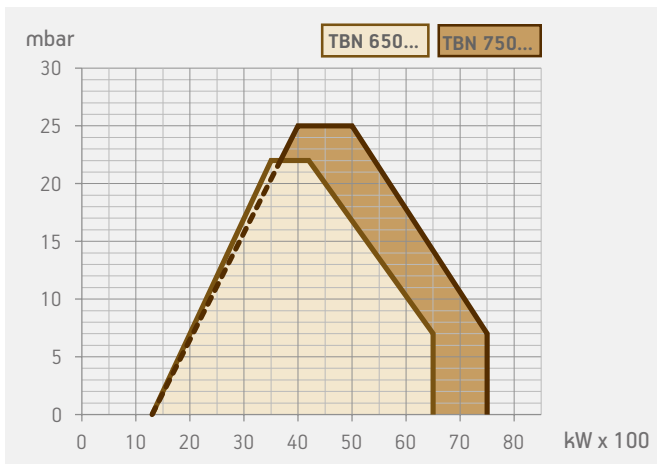
Suitable for fuel oil with a maximum viscosity of 50°E at 50°C

	TBN 650 ME	TBN 750 ME
<b>Heavy oil burner. Operation:</b>	<b>Electronic modulation</b>	<b>Electronic modulation</b>
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	○	○
Modulation ratio:	1:4	1:4
Adjusting the combustion head	●	●
Maintenance facilitated by the possibility of removing the mixing unit and combustion head without having to remove the burner from the boiler	●	●
Fixed boiler coupling flange	●	●
Easy maintenance thanks to the two-sides hinge which allows the removal of the combustion head without having to remove the burner from the boiler	●	●
Combustion air intake with butterfly valve. Air flow adjustment:	electronic cam	electronic cam
Fully closing air damper on shutdown to avoid loss of heat through the chimney	●	●
Electronic motor for pump drive	●	●
Fuel supply circuit made of gear pump with pressure adjustment, control flow valve, shut-off valves and safety valve, safety pressure switch	●	●
Electric fuel preheater with 50L volume with safety valve, self-cleaning filter, thermometer, pressure gauge, minimum and safety thermostats, electronic temperature regulator with digital interface and light signals. To be ordered separately	to be ordered separately	
Heating elements for pump, valves and atomisation unit	●	●
Atomisation unit with nozzle-closing pin	●	●
Fuel switch device:	manual	manual
Flame detection by UV photocell	●	●
Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment	●	●
Electric protection rating:	IP40	IP40

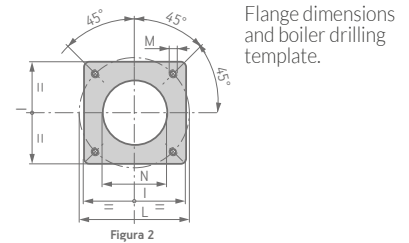
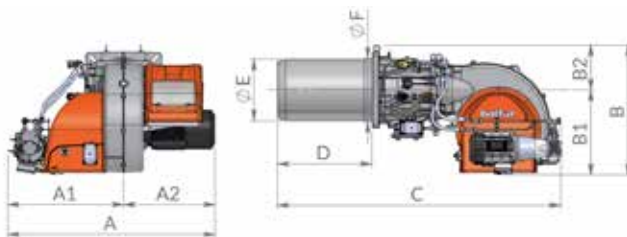
NOTE: suitable for heavy oil up to 50°E at 50°C

### LEGEND:

○ Optional; ● As standard



Model	Size of packaging			Weight kg
	L	P	H	
TBN 650 ME	2065	1525	1200	464
TBN 750 ME	2065	1525	1200	504



Model	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B6 mm	C mm	D mm	D1 mm	E mm	F mm	G	H mm	I mm	L mm	M	N mm
TBN 650 ME	1385	735	650	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	600	M20	430
TBN 750 ME	1385	735	530	810	525	285	295	1850	650	547-597	397	410	DN80	223	480	600	M20	430

	Thermal output kW	Model	Part no.	Max visc. °E at 50°C	Electrical supply	Motor kW	Note
Frequency 50 Hz							
	1750 ÷ 6500	<b>TBN 650 ME</b>	<b>26510010</b>	50	3N AC 50Hz 400V	15,0+3,0	4)
	1750 ÷ 7500	<b>TBN 750 ME</b>	<b>26540010</b>	50	3N AC 50Hz 400V	18,5+3,0	4)
Frequency 60 Hz							
	1750 ÷ 6500	<b>TBN 650 ME</b>	<b>26515410</b>	50	3N AC 60Hz 400V	15,0+3,5	4)
	1750 ÷ 7500	<b>TBN 750 ME</b>	<b>26545410</b>	50	3N AC 60Hz 400V	18,5+3,5	4)

### TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating probe for LCM 100 (see page 324)	
Modulation kit (see page 324)	9800059
Nozzle (see page 325)	

### ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION	PART NO.
Soundproof burner cover (see page 329)	97980058
Soundproof burner cover -20 dB(A) (see page 329)	97980059

### DUAL FUEL BURNERS ACCESSORIES

Flex hoses, dense naphtha filter, boiler coupling kit.

### NOTE

4 Equipped with automatic air closure device.  
Net calorific value heavy oil: Hi = 40,19 MJ/kg = 9600 kcal/kg.

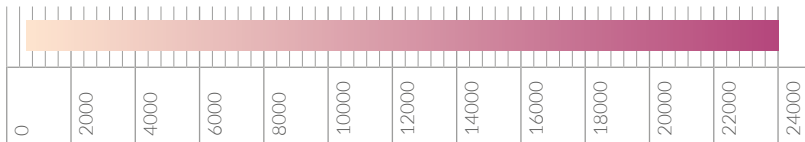
# INDUSTRIAL burners

## IB Serie

Industrial dual-block burners with separated fan



THE IB SERIE INCLUDES 8 MODELS FULLY CUSTOMIZABLE, FROM 200 KW TO 24000 KW

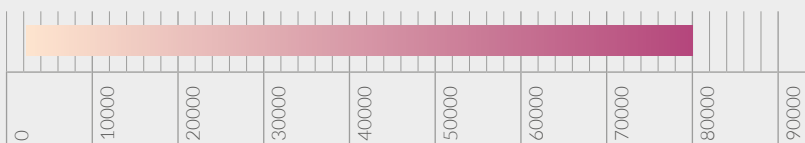


## TBR Serie

Industrial dual-block burners with adjustable flame geometry



TBR RANGE FROM 500 KW TO 80000 KW



# Burners for SPECIAL APPLICATIONS

## BIOGAS and SYNGAS BURNERS

Thanks to the design of the combustion head, Baltur burners are able to process biogas and syngas with power calorific value as low as 3.4 kWh/Nm<sup>3</sup>, while ensuring stable performance. Baltur burners can ensure low NOx emissions for both natural gas and biogas/syngas.

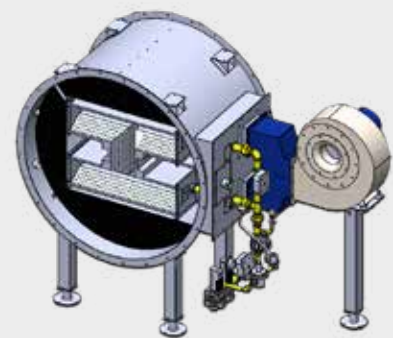


**CUSTOMISABLE POWERS ACCORDING TO CUSTOMER REQUIREMENTS  
MAXIMUM CONFIGURATION FLEXIBILITY**

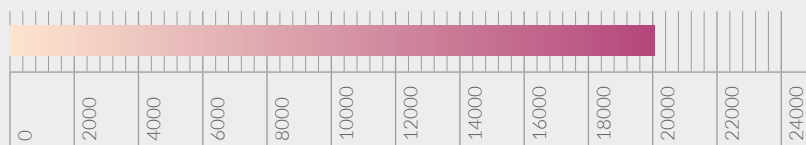


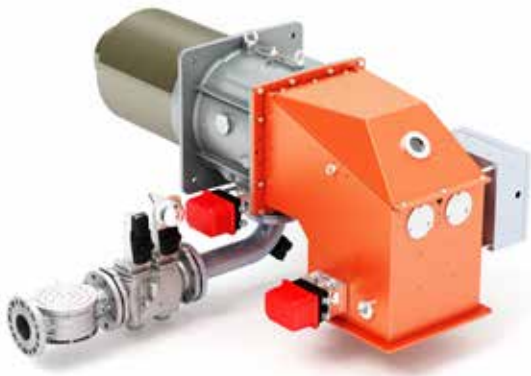
## BVBD Serie

Air duct burners



**BVBD RANGE FROM 70 KW TO 20000 KW**





### BURNER IN ACCORDING TO:

#### NORMS:

- EN 676:2020
- EN 267:2020
- EN 746-2:2011

#### STANDARDS

- EXTRA EUROPEAN:**
- GB/T 36699-2018

#### REGULATIONS AND DIRECTIVES:

- 2006/42/CE
- 2014/35/UE

The IB burner series has been designed to meet the most demanding request of industrial applications.

The modular design concept allow for the maximum flexibility of configuration enabling the IB burner to be the optimal solution for a variety of industrial applications.

The IB is composed by different functional blocks:

- Combustion head
- Ventilating unit
- Control panel
- Gas valve train (for gas applications)
- Pumping skid (for liquid fuel applications)

#### LOW NOX TECHNOLOGY (IB 100-2400)

The IB series is available with different head geometries according to the requirement of the specific national regulation. Burners certified in Class 3 according to EN676 are available with NOx emissions level lower than 80mg/kWh.

These machines featured a combustion head with an enhanced premixing of air and gas streams in order to ensure a stable flame. The solution is paired off with a special design of gas nozzles which ensures a progressive combustion and reduce the formation of thermal NOx.

#### SUPER LOW NOX TECHNOLOGY (IB 100-850)

IB range is also available with super low emissions level, with NOx lower than 30/50 mg/kWh without FGR system.

The exclusive design of the combustion head of these burners is the result of an optimization process of gas and air flow channels with the targets to reduce NOx emissions and ensure stability over the complete working field of the machine.

The natural gas supply is separated at gas train level in two different stream lines which serve respectively the central area of the flame and the lateral one.

The independent management of gas flow over different combustion area allow to reach multiple benefits: - Great stability of root flame in any working conditions reducing vibrations, noise and risk of shut down

- Low thermal NOx formation thanks to mixing with flue gas
- Performance of the machine granted over the complete working field thanks to fine tuning capability

#### LOW NOX WITH SYSTEM FGR (IB 100-2400)

IB range is finally available with minimum emissions level of NOx, lower than 30/50 mg/kWh by means of FGR system.

Recirculation of combustion products is a technique to reduce the flame temperature. It consists in withdrawing a part of combustion fumes from the chimney and dilute them with combustion air, in order to reduce the concentration of oxygen and increase the concentration of inerts (N<sub>2</sub> and CO<sub>2</sub>), which in turn will absorb a part of the energy developed during combustion, thus reducing the flame temperature.

IB burner range allow flue gas inlet either at before or after air

throttle valve. The flue gas flow rate adjustment is performed by a servocontrolled throttle valve that can be managed by the control panel. Adding a given % of recirculation of flue gas has nevertheless an impact on burner performances. Baltur has developed a large experience on this technology and can provide burner design and fitted with the state-of-art technology in order to provide safe and long lasting operating life of the machine.

#### TECHNICAL AND FUNCTIONAL FEATURES

Industrial methane gas burner (G20) of the modulating type, suitable for gas pressures from 150 to 500 mbar (for different values contact our sales department).

- Turndown ratio 1:6 to 1:10.
- Suitable to be used on any type of furnace (check flame sizes).
- The variation between minimum and maximum capacity is controlled electronically by BMS (Burners Management System).
- Electronic servo motors directly connected to combustion air and fuel regulation components.

The combustion air that reaches the head is adjusted by the main input throttle valves. The servomotor varies the heat output through a PID-type electronic adjustment system, while keeping an optimal generator overall heat efficiency rating.

#### DESIGN CHARACTERISTICS

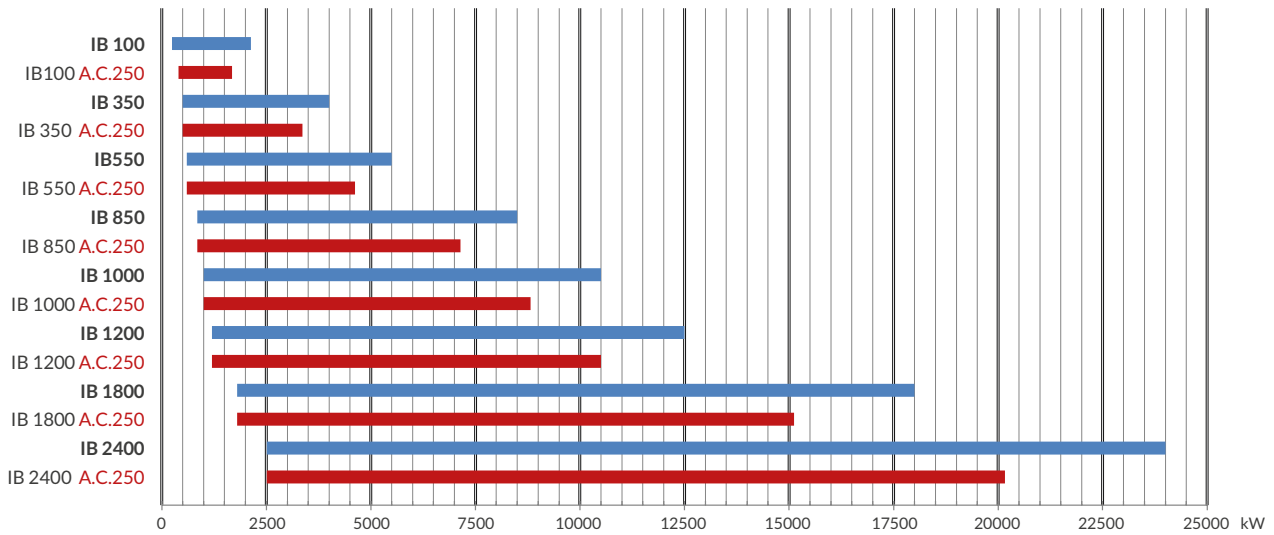
The burner consists of:

- body made of painted steel sheet fitted with connection flange and insulating gasket;
- flame pipe made of special steel, resistant to high temperatures;
- air/fuel mixing and combustion head;
- flame disc;
- flame viewer;
- multiple throttle dampers for automatic adjustment of combustion air;
- dampers fitted on bearings;
- continuous air/fuel intake modulation unit consisting of electric servomotors directly connected to regulation components for the simultaneous calibration of combustion air and fuel;
- gas intake throttle valve;
- direct ignition with electrodes (Ignition gas pilot mod. 1800 PG - 2400);
- gas supply unit to gas distributor in combustion head;
- flame detection (ionization or photocell for models with gas pilot);
- j-box containing terminals for connection to the main electric panel, ignition transformer and manual modulation control;
- electric system with protection class IP54;
- on board electronic control available

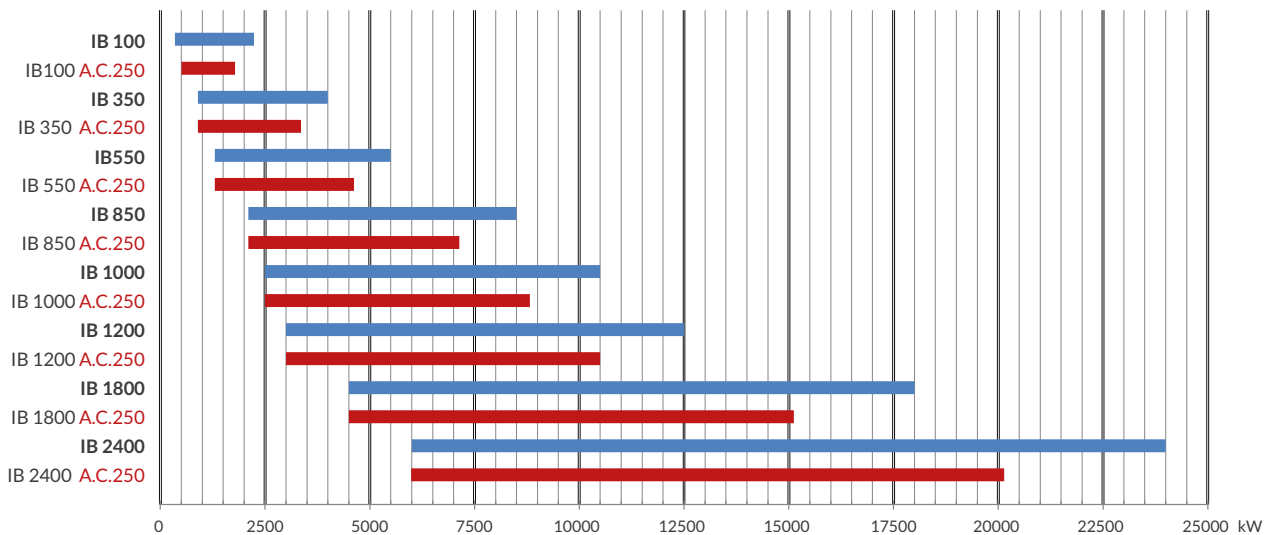
## VERSIONS FOR HOT AIR

- Insulating coat.
- Flame sensor cooling system.
- Mechanical components and electric panel, distanced from machine body to make maintenance easier.
- UV photocell.

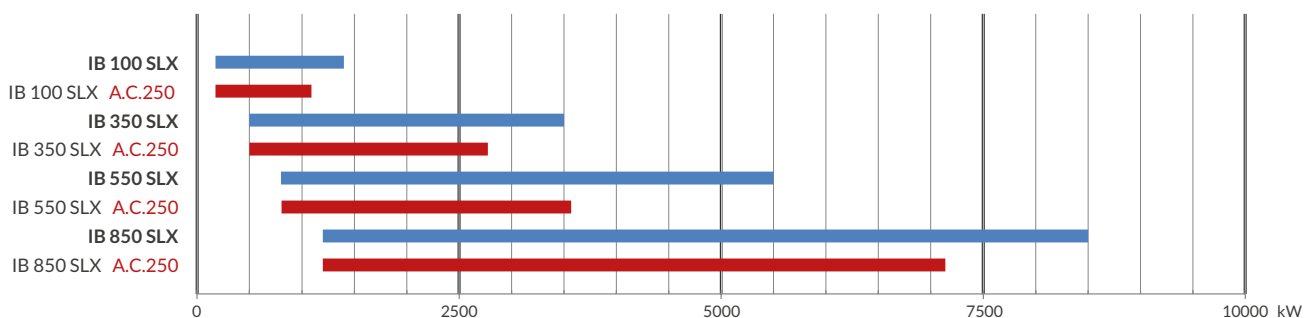
## IB G WORKING FIELDS



## IB L/N WORKING FIELDS



## IB SLX WORKING FIELDS



## SYMBOLS

1

IB

2

100

3

G

4

ME

5

LN4

6

FGR

7

AC

8

AIB

9

FR

1

## TYPE OF BURNER

IB Industrial Burners

2

## CAPACITY

100 - 350 - 550 - 850 - 1000 - 1200 - 1800 - 2400

3

## FUEL

<b>G</b>	natural gas	<b>NS</b>	heavy oil with steam assisted atomisation
<b>B</b>	biogas	<b>GL</b>	gas/light oil combination
<b>P</b>	L.P.G.	<b>GN</b>	gas/heavy oil combination
<b>L</b>	light oil	<b>GNS</b>	gas/heavy oil combination with steam assisted atomisation
<b>LA</b>	light oil with compressed air assisted atomisation	<b>GNA</b>	gas/heavy oil combination with compressed air atomisation
<b>N</b>	heavy oil		
<b>NA</b>	heavy oil with compressed air atomisation		

4

## AIR GAS CONTROL

<b>ME</b>	with electronic cams	<b>MEV CO</b>	with electronic cams and inverters and CO control
<b>MEV</b>	with electronic cams and inverters		
<b>MEV O<sub>2</sub></b>	with electronic cams and inverter and O <sub>2</sub> control		

5

NATURAL GAS NO<sub>x</sub> EMISSIONS

<b>LN2</b>	< 120 mg/kWh	<b>LN4</b>	< 50 mg/kWh
<b>LN3</b>	< 80 mg/kWh	<b>LN5</b>	< 30 mg/kWh

6

## FLUE RECIRCULATION

<b>FGR</b>	with flue gas recirculation system at 50° C
<b>SLX</b>	Low NO <sub>x</sub> combustion head

7

## HOT AIR

/	for combustion air temperature operation at 50° C
<b>AC</b>	for combustion air temperature operation at 250° C

8

## AIR SUPPLY

<b>AIB</b>	air inlet from below	<b>AIT</b>	air inlet from top
<b>AIL</b>	air inlet from left	<b>AIR</b>	air inlet from right

9

## FUEL SUPPLY\*

<b>FR</b>	from right	<b>FT</b>	from top
<b>FL</b>	from left		* this is the supply system of gaseous fuel
<b>FB</b>	from below		



PRODUCT CONFIGURATION	IB ... ME	IB ... ME AC	IB ... ME FGR	IB ... ME FGR AC
Electric protection rating IP 54	●	●	●	●
Air/gas modulation check	●	●	●	●
- throttle valve	●	●	●	●
- servomotor for air and gas	●	●	●	●
- FGR adjustment unit	NA	NA	●	●
Potentiometer installed on servomotor	○	○	○	○
LPG gas nozzle kit	○	○	○	○
Nozzle kit for inversion boilers	○	○	○	○
Combustion head gas pressure port	●	●	●	●
Air pressure switch	●	●	●	●
Ignition transformer	●	●	●	●
Cable and ignition electrode	●	●	●	●
Flame detecting sensor with photocell	●	●	●	●
Flame detecting sensor with variable frequency photocell	○	○	○	○
Flame detecting sensor with photocell for continuous operation	○	○	○	○
Flame sensor cooling system preparation	○	●	○	●
Air gates	●	●	●	●
Air pressure port	●	●	●	●
Pilot gas train ignition (natural gas and LPG) for models 100 to 1200	○	○	○	○
Pilot gas train ignition (natural gas and LPG) for models 1800 to 2400	●	●	●	●
Electrical connection j-box	○	○	●	●
Lifting eyebolts	●	●	●	●
Input modulation signal 4-20 mA	○	○	○	○
Supplied with the burner: - Stud bolt screws, nuts and washers for fastening to boiler - Stud bolt screws, nuts and washers for fastening gas train - Burner flange seal - Instruction manual	●	●	●	●
External insulation for AC versions 250°C	NA	●	NA	●
Fumigated wood packaging	●	●	●	●
On board electrical panel	●	●	○	○

● As standard ○ Optional NA Not Available



## NATURAL GAS

Model	IB 100 G	IB 350 G	IB 550 G	IB 850 G	IB 1000 G	IB 1200 G	IB 1800 G	IB 2400 G
Thermal power (1) kW (min-max)	200-2000	500-4000	600-5500	850-8500	1000-10500	1200-12500	1800-18000	2700-24000
Modulation ratio	1:8	1:8	1:9	1:10	1:10	1:10	1:10	1:9
Ignition system	Direct						Gas Pilot	
Maximum temperature of the combustion air °C	250	250	250	250	250	250	250	250
Min-Max operation temperature °C	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60
Power supply voltage V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Emission class *	Class III	Class III	Class III	Class III	Class III	Class III	Class III	Class III

## FGR - GAS

Model	IB 100G FGR	IB 350G FGR	IB 550G FGR	IB 850G FGR	IB 1000G FGR	IB 1200G FGR	IB 1800G FGR	IB 2400G FGR
Thermal power (1) kW (min-max)	280-1700	550-3550	600-4200	850-6600	1500-9000	1200-10500	1800-15300	2700-20400
Modulation ratio	1:6	1:6	1:7	1:7	1:6	1:6	1:8	1:7
Ignition system	Direct							
Maximum temperature of the combustion air °C	250	250	250	250	250	250	250	250
Min-max operation temperature °C	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60	-15/+60
Power supply voltage V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Emission class	LN5 NOx <30 mg/kWh							

## SLX - GAS

Model	IB 100G SLX	IB 350G SLX	IB 550G SLX	IB 850G SLX
Thermal power (1) kW (min-max)	175-1400	500-3500	800-5500	1200-8500
Modulation ratio	1:8	1:7	1:7	1:7
Ignition system	Direct			
Maximum temperature of the combustion air °C	250	250	250	250
Min-max operation temperature °C	-15/+60	-15/+60	-15/+60	-15/+60
Power supply voltage V/Ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50
Emission class	LN4/LN5 Class NOx <50/30 mg/kWh (2)			

(1) Cold Air Versions

(2) Depending on the application, please refer to your reference.

\* The NOx emission class (Class I ≤ 170 mg/kWh, Class II ≤ 120, Class III ≤ 80 mg/kWh) is determined according to the EN 676 in standard conditions (furnace dimensions, thermal fluid temperature, atmospheric temperature/humidity, ...) and takes into consideration the average of emissions in the operating range points. Under any operating conditions other than the standard test conditions, the emission values corresponding to the classes stated in the table are not guaranteed.

\*\* The NOx emission class (Class II ≤ 185, Class III ≤ 120 mg/kWh) is determined according to the EN 267 in standard conditions (furnace dimensions, thermal fluid temperature, atmospheric temperature/humidity, ...) and takes into consideration the average of emissions in the operating range points. Under any operating conditions other than the standard test conditions, the emission values corresponding to the classes stated in the table are not guaranteed.

## LIGHT OIL / HEAVY OIL

Model	IB		IB		IB		IB		IB		IB		IB			
	100 L/N		350 L/N		550 L/N		850 L/N		1000 L/N		1200 L/N		1800 L/N		2400 L/N	
Thermal power (1) kW (min-max)	350-2000		900-4000		1300-5500		2100-8500		2500-10500		3000-12500		4500-18000		6000-24000	
Modulation ratio	1:5		1:4		1:4		1:4		1:4		1:4		1:4		1:4	
Ignition system	Direct										Gas Pilot					
Maximum temperature of the combustion air °C	250		250		250		250		250		250		250		250	
Min-max operation temperature °C	-15/+60		-15/+60		-15/+60		-15/+60		-15/+60		-15/+60		-15/+60		-15/+60	
Power supply voltage V/Ph/Hz	230/1/50		230/1/50		230/1/50		230/1/50		230/1/50		230/1/50		230/1/50		230/1/50	
Emission class light oil	Class II		Class II		Class II		Class II		Class II		Class II		Class II		Class II	

## DUAL FUEL GAS-LIGHT OIL - DUAL FUEL GAS-HEAVY OIL

Model	IB		IB		IB		IB		IB		IB		IB		IB	
	100 GL/GN		350 GL/GN		550 GL/GN		850 GL/GN		1000 GL/GN		1200 GL/GN		1800 GL/GN		2400 GL/GN	
	natural gas	light oil	natural gas	light oil	natural gas	light oil	natural gas	light oil	natural gas	light oil	natural gas	light oil	natural gas	light oil	natural gas	light oil
Thermal power (1) kW (min-max)	200-2000	350-2000	500-4000	900-4000	600-5500	1300-5500	850-8500	2100-8500	1000-10500	2500-10500	1200-12500	3000-12500	1800-18000	4500-18000	2700-24000	6000-24000
Modulation ratio	1:8	1:5	1:8	1:4	1:9	1:4	1:10	1:4	1:10	1:4	1:10	1:4	1:10	1:4	1:9	1:4
Ignition system	Direct										Gas Pilot					
Maximum temperature of the combustion air °C	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250
Min-max operation temperature °C	-15/+60															
Power supply voltage V/Ph/Hz	230/1/50															
Emission class gas *	Class III		Class III		Class III		Class III		Class II		Class II		Class II		Class II	
Emission class light oil		Class II		Class II		Class II		Class II		Class II		Class II		Class II		Class II

(1) Cold Air Versions

\* The NOx emission class (Class I ≤ 170 mg/kWh, Class II ≤ 120, Class III ≤ 80 mg/kWh) is determined according to the EN 676 in standard conditions (furnace dimensions, thermal fluid temperature, atmospheric temperature/humidity, ...) and takes into consideration the average of emissions in the operating range points. Under any operating conditions other than the standard test conditions, the emission values corresponding to the classes stated in the table are not guaranteed.

\*\* The NOx emission class (Class II ≤ 185, Class III ≤ 120 mg/kWh) is determined according to the EN 267 in standard conditions (furnace dimensions, thermal fluid temperature, atmospheric temperature/humidity, ...) and takes into consideration the average of emissions in the operating range points. Under any operating conditions other than the standard test conditions, the emission values corresponding to the classes stated in the table are not guaranteed.

**BURNER IN ACCORDING TO:****NORMS:**

- EN 676:2020
- EN 267:2020
- EN 746-2:2011

**STANDARDS**

- EXTRA EUROPEAN:**
- GB/T 36699-2018

**REGULATIONS AND DIRECTIVES:**

- 2006/42/CE
- 2014/35/UE

The TBR serie features an innovative design and a highly functional and versatile layout to meet the most demanding requirements in industrial applications. The TBR combustion system consists of several functional blocks:

- Combustion head
- Ventilating unit
- Control panel
- Gas valve train (for gas applications)
- Pumping skid (for liquid fuel applications)

**ENERGY SAVING**

TBR burners are equipped with an electronic control, which allows the air-fuel mixture to be regulated with maximum precision as the heat load changes, optimising energy consumption. Combustion optimisation systems (O<sub>2</sub> and CO control kits) can be combined with TBR burners to ensure significant economic 'savings'.

**COMBUSTION HEAD**

The combustion head allows combustion and flame size to be adapted in relation to the type of combustion chamber.

For gaseous fuel versions, the 'spear' design with adjustable nozzles allows for flexible combustion systems in relation to different applications, to achieve even low NO<sub>x</sub> values with and without FGR. The design ensures easy and immediate access to the combustion head.

**SUPER LOW NO<sub>x</sub> (FIR) TECHNOLOGY (TBR 4-32)**

TBR series burners from model 4 to 32 are also available with super LOW NO<sub>x</sub> emission levels, with NO<sub>x</sub> below 50 mg/kWh. The unique combustion head design of these burners is the result of an optimisation process of the gas and air flow channels with the aim of reducing NO<sub>x</sub> emissions and ensuring stability over the entire operating range of the machine.

**LOW NO<sub>x</sub> WITH SYSTEM FGR (TBR 4-80)**

TBR serie burners from model 4 to 80 are designed and prepared to be combined with the external combustion gas recirculation system, known as FGR.

This technology provides for the mixing of combustion air at burner intake with combustion gases taken from the chimney of the heat generator on which it is installed.

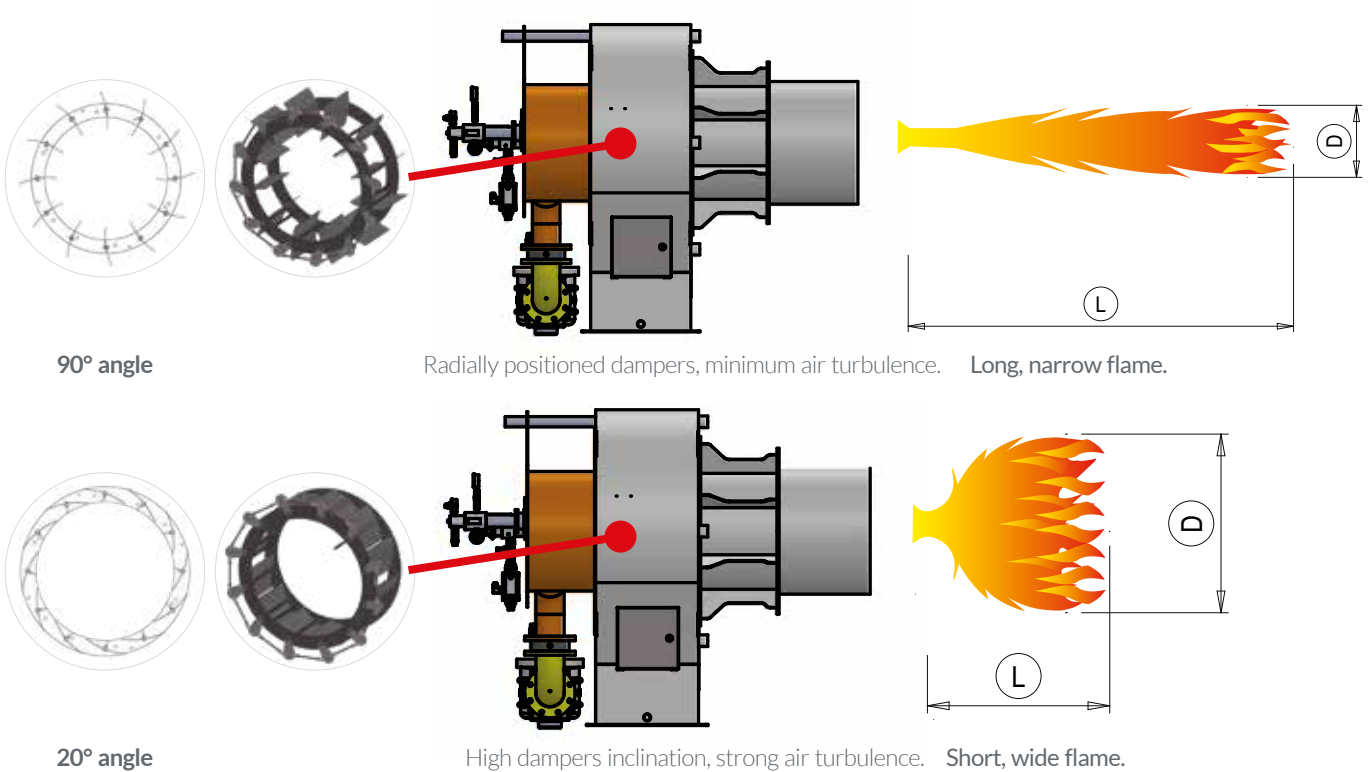
Thanks to the mixing of combustion air, flue gases (up to 40% of the total flue gas flow rate) and fuel, a flame is generated whose 'adiabatic' temperature is significantly reduced compared to that generated by a burner without FGR.

The result is a reduction in NO<sub>x</sub> values between 15 and 40 %.

**ADJUSTABLE FLAME GEOMETRY**

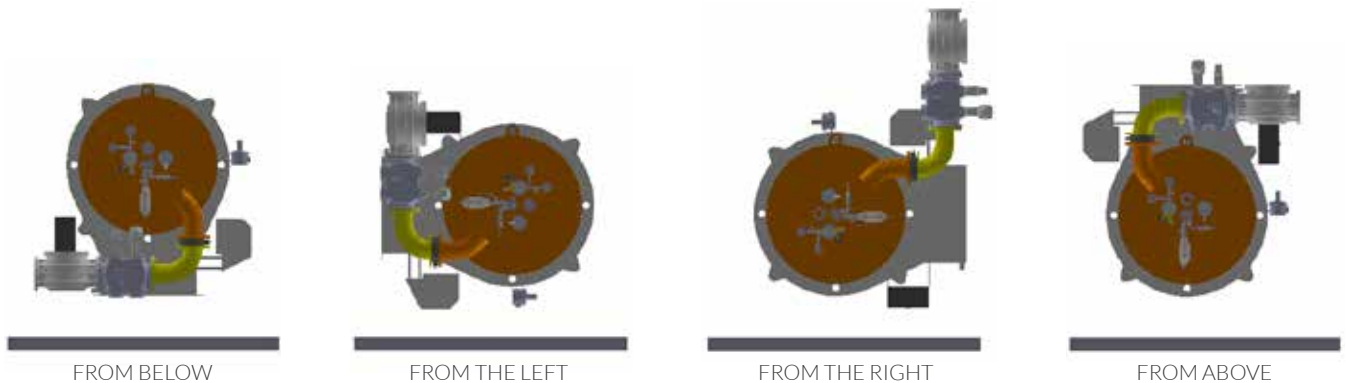
The burner is equipped with an air regulator on the combustion head, used to modify, within broad limits, the shape of the flame (diameter-length) to adapt it to the furnace geometry. Adjustment can be: manually by acting on the opening device of the register dampers, modifying the geometry of the combustion air flows.

Alternatively with an actuator controlled by BMS (Burners Management System) the equipment which can automatically change the position of the register and consequently the shape of the flame according to the application of the firebox, throughout the modulation range



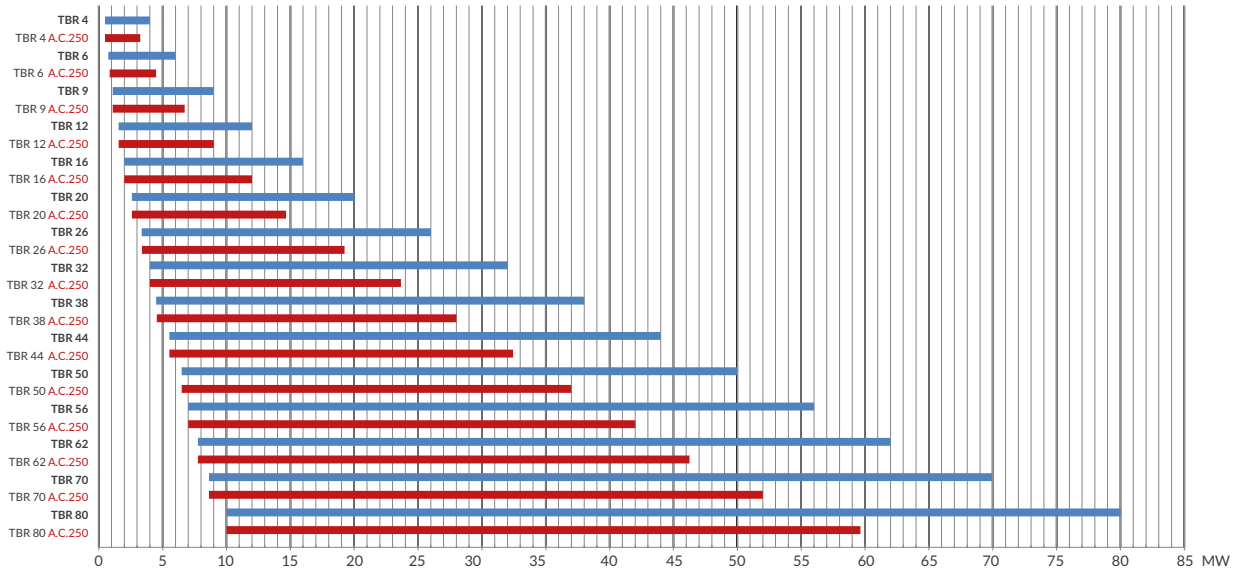
**BURNER AND GAS TRAIN ORIENTATION**

The burners of the TBR series are designed to be absolutely versatile, so they can be installed on the heat generator in various orientations. For example:

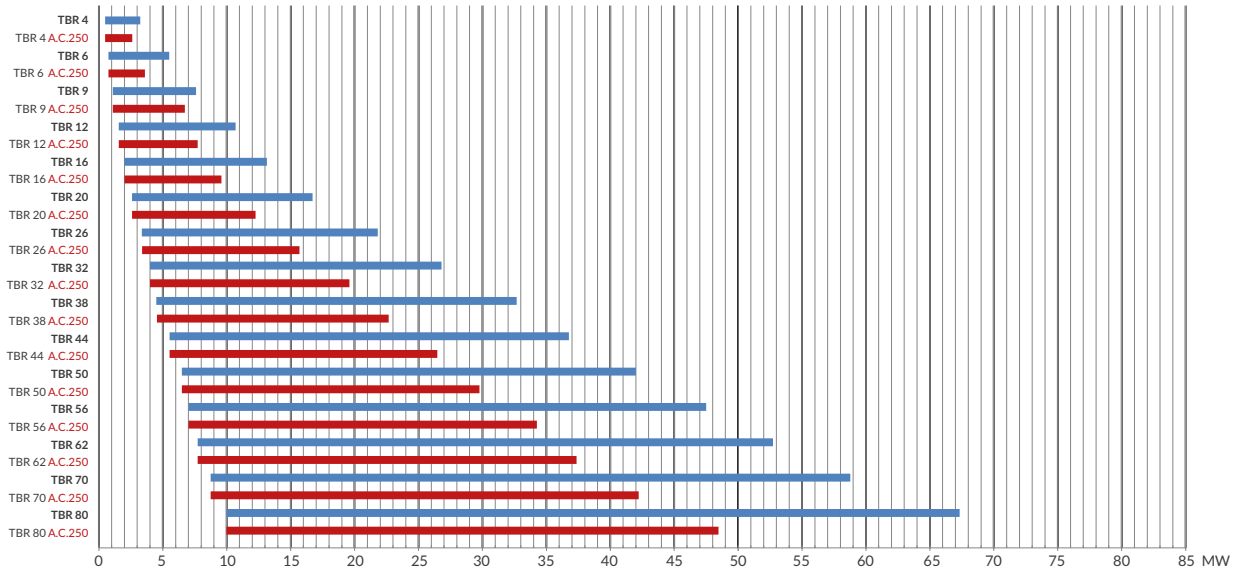


Wide configuration availability.

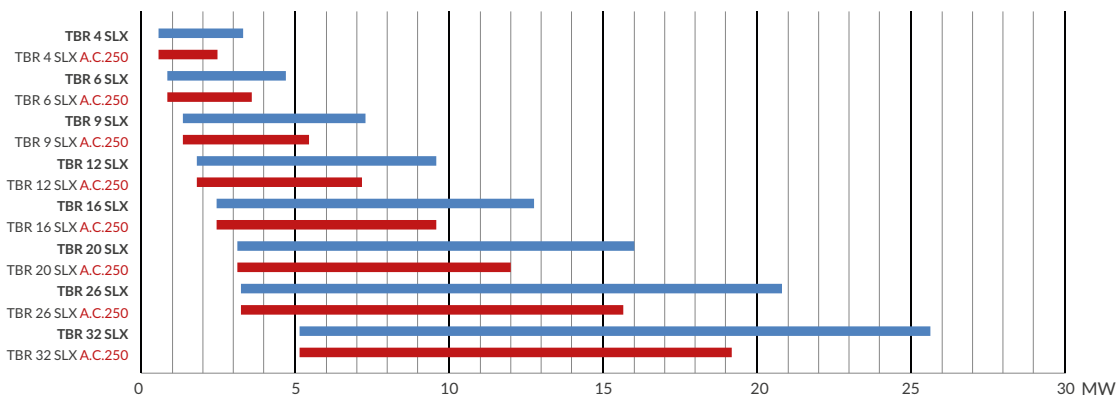
TBR G WORKING FIELDS



TBR FGR WORKING FIELDS



TBR SLX WORKING FIELDS



SYMBOLS



**1 TYPE OF BURNER**

**TBR** The Best Register

**2 CAPACITY**

4 - 6 - 9 - 12 - 16 - 20 - 26 - 32 - 38 - 44 - 50 - 56 - 62 - 70 - 80

**3 FUEL**

<b>G</b> natural gas	<b>NS</b> heavy oil with steam assisted atomisation
<b>B</b> biogas	<b>GL</b> gas/light oil combination
<b>P</b> L.P.G.	<b>GN</b> gas/heavy oil combination
<b>L</b> light oil	<b>GNS</b> gas/heavy oil combination with steam assisted atomisation
<b>LA</b> light oil with compressed air assisted atomisation	<b>GNA</b> gas/heavy oil combination with compressed air atomisation
<b>N</b> heavy oil	
<b>NA</b> heavy oil with compressed air atomisation	

**4 AIR GAS CONTROL**

<b>ME</b> with electronic cams	<b>MEV CO</b> with electronic cams and inverters and CO control
<b>MEV</b> with electronic cams and inverters	
<b>MEV O<sub>2</sub></b> with electronic cams and inverter and O <sub>2</sub> control	

**5 NATURAL GAS NO<sub>x</sub> EMISSIONS**

<b>LN2</b> < 120 mg/kWh	<b>LN4</b> < 50 mg/kWh
<b>LN3</b> < 80 mg/kWh	<b>LN5</b> < 30 mg/kWh

**6 FLUE RECIRCULATION**

**FGR** with flue gas recirculation system at 50° C  
**SLX** Low NO<sub>x</sub> combustion head

**7 HOT AIR**

**/** for combustion air temperature operation at 50° C  
**AC** for combustion air temperature operation at 250° C

**8 AIR SUPPLY**

<b>AIB</b> air inlet from below	<b>AIT</b> air inlet from top
<b>AIL</b> air inlet from left	<b>AIR</b> air inlet from right

**9 FUEL SUPPLY\***

<b>FR</b> from right	<b>FT</b> from top
<b>FL</b> from left	* this is the supply system of gaseous fuel
<b>FB</b> from below	

PRODUCT CONFIGURATION	TBR..G ME	TBR..L ME	TBR..GL ME	TBR..N ME	TBR..GN ME
Steel metal frame with sanding treatment and powder coating	●	●	●	●	●
Stainless steel metallic diffuser	●	●	●	●	●
Stainless steel metallic diffuser with extended length	○	○	○	○	○
Combustion head extraction system	●	●	●	●	●
Gas plenum chamber with lances provided with adjustable nozzles	●	ND	●	ND	●
Burner closing plate provided with centring system and atomisation lance	●	●	●	●	●
Light oil atomization lance	ND	●	●	●	●
Throttle valve for gas flow rate modulation	●	ND	●	ND	●
Manual or automatic flame register with variable geometry	●	●	●	●	●
Lifting eyebolts	●	●	●	●	●
Flame display	●	●	●	●	●
Combustion head gas pressure port	●	●	●	●	●
Intermittent operation - 1 stop every 24h -	●	●	●	●	●
Continuous operation - 1 stop every 72h -	●	●	●	●	●
Intermittent operation light oil ignition pilot	○	○	○	○	○
Continuous operation light oil ignition pilot	○	○	○	○	○
Intermittent operation gas ignition pilot (GAS or LPG)	●	●	●	●	●
Continuous operation gas ignition pilot (GAS OR LPG)	○	○	○	○	○
Pilot supply with compressed air	○	○	○	○	○
Cable and ignition electrodes (for pilot)	●	●	●	●	●
Gas train for ignition pilot (GAS or LPG)	●	●	●	●	●
Light oil train for light oil ignition pilot	○	○	○	○	○
Adjustable flame sensor support	●	●	●	●	●
UV flame sensor	●	●	●	●	●
Selective frequency flame sensor	○	○	○	○	○
Version for pre-heated combustion air up to 250°C	○	○	○	○	○
Cold air flame sensor cooling system	○	○	○	○	○
Hot air flame sensor cooling system	●	●	●	●	●
Multiple air dampers with servomotor	●	●	●	●	●
Air pressure port	●	●	●	●	●
Junction j-box for electrical connections	●	●	●	●	●
Ignition transformer	●	●	●	●	●
Operation with continuous ventilation	●	●	●	●	●
Preset for "AIR COOLING SYSTEM" with external fan cooling	○	○	○	○	○
Supplied with the burner:	●	●	●	●	●
fumigated wood packaging	●	●	●	●	●
Use of inverter on air fan	○	○	○	○	○
Use of O <sub>2</sub> and CO control	○	○	○	○	○
Protection rating IP65	○	○	○	○	○
Hydraulic circuit for liquid fuel according to EN267		●	●	●	●
Flow regulator for liquid fuel via actuator		●	●	●	●
Electrical heater for oil line, oil regulator and safety valve.	NA	NA	NA	●	●

● As standard ○ Optional NA Not available

Model	TBR 4	TBR 6	TBR 9	TBR 12	TBR 16	TBR 20	TBR 26	TBR 32	TBR 38	TBR 44	TBR 50	TBR 56	TBR 62	TBR 70	TBR 80	
Thermal power (1) kW (min-max)	500 - 4,000	750 - 6,000	1,125 - 9,000	1,500 - 12,000	2,000 - 16,000	2,500 - 20,000	3,250 - 26,000	4,000 - 32,000	4,750 - 38,000	5,500 - 44,000	6,250 - 50,000	7,000 - 56,000	7,750 - 62,000	8,750 - 70,000	10,000 - 80,000	
GAS - Modulation ratio	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	8 : 1	
LIGHT OIL - Modulation ratio	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	3 : 1	3 : 1	3 : 1	3 : 1	3 : 1	
HEAVY OIL - Modulation ratio	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	4 : 1	3 : 1	3 : 1	3 : 1	3 : 1	3 : 1	
Ignition system	With electrode		Gas Pilot													
Maximum temperature of the combustion air °C	250 °C															
Entry couplings pilot ramp	-	-	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Diameter of the ignition pilot	-	-	48 mm	48 mm	60 mm	60 mm	60 mm	60 mm	60 mm	60 mm	60 mm	60 mm	60 mm	80 mm	80 mm	
LIGHT OIL-HEAVY OIL inlet connections	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1 1/2"	1 1/2"	2"	2"
LIGHT OIL-HEAVY OIL outlet connections	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1 1/2"	1 1/2"	2"	2"
Power supply voltage V/Ph/Hz	230/1/50															
Electric protection rating	IP 54															
In according to	EN 676 - EN 267 - EN 746-2															



## BIOGAS AND SYNGAS BURNERS



Biogas and syngas can be a very valuable resource but still present some limitations for industrial applications. Stationary applications for heat and power generation need:

- Constant fuel flow and stable pressure power supply
- Constant and predictable performances of burners and of heat generator

The variable composition of biogas and syngas along with the unstable availability of gas flow introduce some critical elements in the development of applications in industrial field.

**Baltur has developed a burner technology able to overcome these issues and enable a safe and reliable implementation on such applications.**

### A SOLUTION FOR EVERY APPLICATION

The solutions developed by Baltur branch off in three directions:

#### 1 BIOGAS AS UNIQUE ENERGY SOURCE

The burner uses a single gas

#### 2 BIOGAS AND NATURAL GAS AS ALTERNATED ENERGY SOURCES

The burner uses two gases in alternated mode switching automatically or manually from one to another

#### 3 BIOGAS/SYNGAS AND NATURAL GAS AS COMBINATED ENERGY SOURCES

The burner uses two gases at the same time managing automatically variable gas/gas ratio.

Thanks to the design of the burner head Baltur's burners are capable to process biogas and syngas with calorific power as little as 3,4 kWh/Sm<sup>3</sup> ensuring at same time stable performance.

Baltur burners can grant low NOx emissions both for natural gas and biogas/syngas as following:

FUEL	EMISSION LEVEL	Misured on three-pass steam generator
Natural gas & Biogas	NOx < 100 mg/kWh *	
Syngas	NOx < 200 mg/kWh *	

All the Baltur burner for biogas/syngas are **equipped with UV flame scanner** to ensure a constant and accurate flame control where traditional ionization probe may fail to have.

In addition, **Baltur's solutions can withstand H<sub>2</sub>S content up to 1% ensuring long lasting system life.** This is especially important in case of application of biogas, where H<sub>2</sub>S content may lead to untimely degradation of mechanical components due to generation of sulphuric acid when gas exhibits excessive humidity.

The solution can be also integrated with state-of-art technologies for achieving additional targets on safety, emission reduction or energy savings.

These are:

- > Integration of pilot flame (always present for syngas applications)
- > Integration of FGR to further reduce NOx emissions
- > Integration of O<sub>2</sub>/CO control to grant additional fuel savings
- > Integration of VFD to ensure additional energy savings

## SUCCESS STORIES

### THE APPLICATION


Revamping of the old plant including an additional fuel line coming from a brand new digester system fed by agricultural waste collected from suppliers.

### THE CHALLENGE

Maximize energy saving and operating costs considering floating availability of alternative fuel.

### THE SOLUTION

Baltur proposed a mixing fuel burner capable to manage two different fuels in variable proportion at any thermal load. The system is designed to make use of all the biogas available and compensate the missing thermal power to reach duty point with natural gas. In addition to minimize energy consumption the machine has been equipped with VFD fan motor and O<sub>2</sub> sensor.

Burner Model	Field of Application	DISTILLERY
 <p><b>TBG 1100ME-V O<sub>2</sub> FGR</b> NATURAL GAS/BIOGAS</p> <ul style="list-style-type: none"> <li>• ELECTRONIC MODULATION</li> <li>• INVERTER CONTROL</li> <li>• O<sub>2</sub> CONTROL</li> <li>• FLUE GAS RECIRCULATION</li> </ul>	Installation	Three pass steam boiler
	Firing rate	9100 kW @ 9 mbar
	Functioning	Mixing fuel
	Emissions natural gas fuel	< 100 mg/Nm <sup>3</sup>
	Emissions Mixing fuel	< 200 mg/Nm <sup>3</sup>
	Annual expected saving natural gas	52%
	Annual expected saving electrical power	32%
	Annual expected saving CO <sub>2</sub> emissions	>250 tons
Annual expected cost saving	49%	

### THE APPLICATION


Brand new plant with single fuel line coming from stock of Biogas produced locally through digester system.

### THE CHALLENGE

Ensure stable performances and long lasting solution given biogas H<sub>2</sub>S content.

### THE SOLUTION

Baltur proposed a single fuel burner capable to withstand content of H<sub>2</sub>S up to 1% reducing dramatically the need for continuous maintenance.

Burner Model	Field of Application	FOOD & BEVERAGE
 <p><b>TBG 360ME</b> BIOGAS</p> <ul style="list-style-type: none"> <li>• ELECTRONIC MODULATION</li> </ul>	Installation	Three pass steam boiler
	Firing rate	3000 kW @ 7,5 mbar
	Functioning	100% Biogas
	Emissions	< 200 mg/Nm <sup>3</sup>
	Annual expected saving natural gas	100%
	Annual expected saving CO <sub>2</sub> emissions	>230 ton

### THE APPLICATION


Brand new plant with dual fuel capability for refrigeration system. The machine is fed directly by oxidating reactor with an intermediate stock.

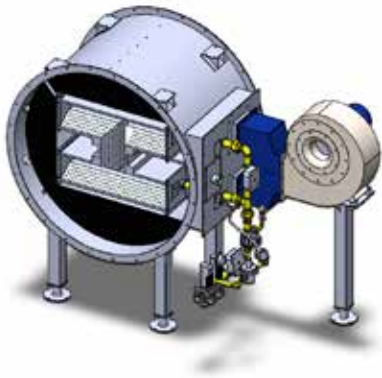
### THE CHALLENGE

Ensure power continuity with fast and smooth transition from a fuel to the other one depending on availability.

### THE SOLUTION

Baltur proposed a dual fuel burner capable to switch automatically from Syngas to Natural gas and viceversa depending on availability of preferred fuel (Syngas). The machine is also designed to be equipped with BUS connections for remote data monitoring.

Burner Model	Field of Application	FARMING
 <p><b>TBG 60ME</b> GAS NATURALE/SYNGAS</p> <ul style="list-style-type: none"> <li>• ELECTRONIC MODULATION</li> </ul>	Firing rate	500 kW @ 3 mbar
	Application	Hot water
	Emissions natural gas fuel	< 100 mg/Nm <sup>3</sup>
	Annual expected saving natural gas	70%
	Annual expected saving CO <sub>2</sub> emissions	>40 tons
	Risparmio annuo previsto di emissioni di CO <sub>2</sub>	>230 ton



### Air duck burners for drying in industrial processes

#### SECTORS OF USE:

- installations for paint booths;
- drying processes in the food sector;
- drying processes in the industrial sector;
- process hot air generators with large modulation ratio.

#### BURNER FEATURES

##### SHEET METAL HOUSING, COMPLETE WITH:

- burner body in galvanised sheet metal;
- stainless steel panels and combustion module;
- combustion air electric fans;
- combustion air manual regulation dampers;
- combustion air pressure switch

##### GAS TRAIN SET UP ACCORDING TO UNI EN 746-2, FOR NATURAL GAS/LPG SUPPLY:

- gas manual shut off valve;
- anti-vibration joint;
- pressure stabiliser + gas filter;
- class A safety solenoid valve;
- class A working solenoid valve;
- modulating valve coupled with a servomotor
- minimum and maximum gas pressure switches;
- valve seal control pressure switch;
- no. 3 pressure gauges with relative disabling push-button.

##### COMBUSTION AIR ELECTRIC FAN, COMPLETE WITH:

- electric motor;
- combustion air electric fan complete with;
- combustion air pressure switch.

##### IP54 BURNER CONTROL PANEL, COMPLETE WITH:

- ignition transformer;
- flame control equipment;
- valve seal control equipment;
- combustion air fan management and control;
- electrical power supply\*: power 400V - 50Hz 3Ph+N+G, Aux. 230V - 50Hz;
- electrode ignition;
- detection by ionisation probe;

\* Other power supply voltages for both power and auxiliary are also available upon request.

#### RANGE:

##### BVDB

##### Traditional direct-fired gas burners for vertical dryers.

With this type of burner, the process air for drying is produced by mixing the fumes generated by the combustion (excess air) and the clean air drawn in by the dryer fan.

**Thermal power from: 814 kW to 8,150 kW**



##### BVDB

##### Burners for vertical dryers.

Due to their arrangement in the drying duct, they provide greater power, take up less space, and ensure a more uniform heat distribution.

**Variable thermal power from: 4,884 kW to 16,280 kW**



**BVDB...LT****Burners for vertical dryers.**

This special set-up guarantees correct operation down to a temperature of -20°C.

This set-up is also feasible for all the other series listed.

**Thermal power from: 814 kW to 16,280 kW**

**BVDB...D**

**Air vein burners inserted into a pressed galvanised sheet steel duct** with a rectangular or square cross-section, depending on the needs and specifications of the dryer manufacturer. Like the other burners, these also have a linear combustion body in stainless steel for high temperatures, which, exclusively in this series, can be configured in an "H" or "X" shape. These configurations, which differ from the traditional in-line configuration, allow for an increase in thermal power with the same duct cross-section.

**Thermal power from: 175 kW to 4,650 kW**

**BVDB...CD**

**Air vein burners with a circular duct cross-section.**

**Thermal power from: 175 kW to 4,300 kW**

**BVDB...CDS AND BVDB...CS**

The machines from these two series can have a similar duct cross-section or combustion body geometric configuration as the previous ones; they differ from them in that they are **set up to use part of combustion air as process air.**

**Thermal power from: 175 kW to 4,300 kW**

**BVDB...PE**

If the user wishes to **increase the temperature of the process air conveyed by a steel sheet duct**, one of these burners (complete with electric fan, and electric control and power panel) can be mounted on the duct itself with a special plate.

**Thermal power from: 70 kW to 756 kW**

**BVDB...PS**

On these burners, like the previous ones, **the combustion air is drawn from the process air.**

**Thermal power from: 70 kW to 580 kW**

**BVDB...ME**

While on the BVDB...P series the **burner housing is inserted into the drying air duct**, on the BVDB...ME series all the burner components are located outside the duct. Only the flame and combustion products enter the duct.

The burner is fixed to the sheet steel duct with a metal flange.

**Thermal power from: 70 kW to 756 kW**

**BVDB...TE**

These are burners for vertical dryers similar to the BVDB series.

However, they have a **smaller combustion body panel surface area to ensure a reduced power output**, which is nevertheless well distributed throughout the dryer duct.

**Thermal power from: 174 kW to 1,750 kW**



## MODULATION

The two stage progressive burners, by installing the PID load controller and related modulating kit, can operate as modulating burners with the ability to adjust the thermic load according to boiler needs. The load adjustment is possible between the minimum and maximum burner's operating point.

### How to choose the modulating kit components:

According to the parameter that it's necessary to control: temperature (°C) or pressure (bar) it's necessary to choose the range kit according to boiler operating range.

In case the value is included in two ranges it's necessary to select the lower range.

### Example:

In case the required hot water boiler set point is 100°C it's necessary to select the temperature probe kit with operating range between 0 ÷ 130°C.

In case the steam boiler must operate with 8bar outlet steam pressure it's necessary to select the pressure probe kit with operating range between 0 ÷ 10 bar.



### Automatic proportional modulation regulator PID

Part no.	Kit	Burners
98000055	Modulation kit LC3	TBG 450 ÷ 2000 MC
98000056	Modulation kit LC3	TBG 35 MC
98000057	Modulation kit LC3	TBML 80 ÷ 360 MC
98000058	Modulation kit LC3	TBG 45 ÷ 60 MC
98000059	Modulation kit LCM 100	ME models
98000065	Modulation kit LC4	TBG 80 ÷ 360 MC

### Temperature probe for LC3 modulation

Part no.	Temperature	Type robe	Probe length	Male coupling
98000023	0 °C ÷ 130 °C	PT 1000	85 <sup>1)</sup>	R 1/2"
98000021	0 °C ÷ 500 °C	PT 1000	200 <sup>1)</sup>	G 1/2"
98000022	0 °C ÷ 1100 °C	Thermocouple	425 <sup>1)</sup>	R 1/2"



### Temperature probe for LCM 100 modulation

Part no.	Temperature	Type robe	Probe length	Male coupling
98000023	0 °C ÷ 130 °C	PT 1000	85 <sup>1)</sup>	R 1/2"
98000021	0 °C ÷ 500 °C	PT 1000	200 <sup>1)</sup>	G 1/2"

### Temperature probe for ETAMATIC OEM control box

Part no.	Temperature	Type robe	Probe length	Male coupling
98000035	0 °C ÷ 500 °C	PT 100	100 <sup>1)</sup>	G 1/2"

### Steam pressure probe (for all types of automatic regulator)\*

Part no.	Pressure steam	Signal output	Male coupling
98000045	0 ÷ 1 bar	4 ÷ 20 mA	G 1/2"
98000046	0 ÷ 10 bar	4 ÷ 20 mA	G 1/2"
98000047	0 ÷ 16 bar	4 ÷ 20 mA	G 1/2"
98000048	0 ÷ 25 bar	4 ÷ 20 mA	G 1/2"
98000049	0 ÷ 40 bar	4 ÷ 20 mA	G 1/2"

\*) In the case of using applications where temperatures exceed 90°C you need to match the kit codes: 98000062

**NOTE: In combination with the LC4 modulation kit for MC models, a 12V power supply kit is mandatory.**

98000482	12V power supply kit
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### External climate regulation

Part no.	Description	Temperature
85060070	Temperature probe PT100	-50 °C ÷ 90 °C
98000061	Interface module for LC3	

### Power signal converter (TBG 45÷360 MC / LX MC)

Part no.	Description
98000063	Converter kit 0 ÷ 10 V / 4 ÷ 20 mA

### UV safe kit

**Note:** For different modulation values please contact our Technical Assistance Service.

1) Different lengths on request.

## RETURN NOZZLES

Nozzle with fuel return for diesel and mixed series two-stage progressive / modulating and modulating burners. This kind of nozzle, while keeping the pump pressure constant, varies the amount of

fuel supplied according to the return pressure of the nozzle. To be ordered together with the burner when placing the order according to the power required by the application.

### Nozzles for light oil (ratio 1÷3) excluded burners: TBML 800

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000201	50	45°
98000202	60	45°
98000203	70	45°
98000204	80	45°
98000205	90	45°
98000206	100	45°
98000207	125	45°
98000208	150	45°
98000209	175	45°
98000210	200	45°
98000211	225	45°
98000212	250	45°
98000213	275	45°
98000214	300	45°
98000215	325	45°
98000216	350	45°
98000217	375	45°

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000218	400	45°
98000219	425	45°
98000220	450	45°
98000221	475	45°
98000222	500	45°
98000223	525	45°
98000224	550	45°
98000225	575	45°
98000226	600	45°
98000227	650	45°
98000228	700	45°
98000229	750	45°
98000230	800	45°
98000231	850	45°
98000232	900	45°
98000233	1000	45°



### Nozzles for light oil (ratio 1÷4) for burners TBML 450÷900 - TBL 450÷750 - TBL 1000

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000264	200	45°
98000265	225	45°
98000266	250	45°
98000267	275	45°
98000268	300	45°
98000269	330	45°
98000270	360	45°
98000272	400	45°
98000274	450	45°
98000275	500	45°

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000277	550	45°
98000278	600	45°
98000279	650	45°
98000271	700	45°
98000273	750	45°
98000276	800	45°
98000286	800	50°
98000287	850	50°
98000288	900	50°



### Nozzles for light oil (ratio 1÷5) for burners TBML 800 - TBL 1000

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000238	200	45°
98000239	225	45°
98000240	250	45°
98000241	275	45°
98000242	300	45°
98000243	325	45°
98000244	350	45°
98000245	375	45°
98000246	400	45°
98000247	425	45°
98000248	450	45°

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000249	475	45°
98000250	500	45°
98000251	525	45°
98000252	550	45°
98000253	575	45°
98000254	600	45°
98000255	650	45°
98000256	700	45°
98000257	750	45°
98000258	800	45°
98000259	850	45°
98000260	900	45°



### Nozzles for heavy oil (ratio 1÷5) - Type W4

Part no.	Rated flow-rate kg/h	Flow-rate angle
98000500	300	45°
98000501	325	45°
98000502	350	45°
98000503	375	45°
98000504	400	45°
98000505	425	45°
98000506	450	45°
98000507	475	45°

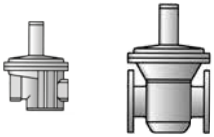
Part no.	Rated flow-rate kg/h	Flow-rate angle
98000508	500	45°
98000509	525	45°
98000510	550	45°
98000511	600	45°
98000512	650	45°
98000513	700	45°
98000514	750	45°



## Gas pressure regulator with incorporated filter approved CE\*

Control closing , pressure taps upstream side - the side valley , safety diaphragm.  
Max inlet pressure : 1 bar.

Part no.	Model	Outlet pressure mbar	Gas connection
97392010	BTFR/1	40 ÷ 110	1/2"
97392020	BTFR/1	40 ÷ 110	3/4"
97392030	BTFR/1	40 ÷ 110	1"
97392040	BTFR/1	90 ÷ 190	1"1/4
97392050	BTFR/1	90 ÷ 190	1"1/2
97392060	BTFR/1	90 ÷ 190	2"
97392070	BTFR/1	110 ÷ 200	DN65 - PN16
97392080	BTFR/1	110 ÷ 200	DN80 - PN16
97392090	BTFR/1	130 ÷ 200	DN100 - PN16



## CE gas pressure regulator CE\*

Control closing , pressure taps upstream side - the side valley , safety diaphragm.  
Max inlet pressure : 1 bar.

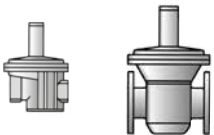
Part no.	Model	Outlet pressure mbar	Gas connection
97392100	BTR/1	100 ÷ 250	DN125 - PN16
97392110	BTR/1	100 ÷ 250	DN150 - PN16



## Gas pressure regulator with incorporated filter approved CE\*

Control closing , pressure taps upstream side - the side valley , safety diaphragm.  
Max inlet pressure : 2 bar.

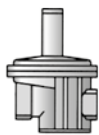
Part no.	Model	Outlet pressure mbar	Gas connection
97392210	BTFR/2	40 ÷ 110	1/2"
97392220	BTFR/2	40 ÷ 110	3/4"
97392230	BTFR/2	40 ÷ 110	1"
97392240	BTFR/2	90 ÷ 190	1"1/4
97392250	BTFR/2	90 ÷ 190	1"1/2
97392260	BTFR/2	90 ÷ 190	2"
97392270	BTFR/2	110 ÷ 200	DN65 - PN16
97392280	BTFR/2	110 ÷ 200	DN80 - PN16
97392290	BTFR/2	130 ÷ 200	DN100 - PN16



## Gas pressure regulator with incorporated filter approved CE\*

Control closing , pressure taps upstream side - the side valley , safety diaphragm.  
Max inlet pressure : 6 bar.

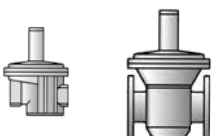
Part no.	Model	Outlet pressure mbar	Gas connection
97392310	BTFR/6	30 ÷ 90	1/2"
97392320	BTFR/6	30 ÷ 90	3/4"
97392330	BTFR/6	30 ÷ 90	1"



## CE gas pressure regulator CE\*

Control closing , pressure taps upstream side - the side valley , safety diaphragm.  
Max inlet pressure : 6 bar.

Part no.	Model	Outlet pressure mbar	Gas connection
97392340	BTR/6	85 ÷ 180	1"1/4
97392350	BTR/6	85 ÷ 180	1"1/2
97392360	BTR/6	85 ÷ 180	2"
97392370	BTR/6	110 ÷ 200	DN65 - PN16
97392380	BTR/6	110 ÷ 200	DN80 - PN16
97392390	BTR/6	110 ÷ 200	DN100 - PN16



\*) All the pressure regulators in these pages have a standard spring with its own adjustment field. For different delivery pressures, the table below shows the regulation field that must be used, as well as the corresponding spring to replace the standard one with.

# ACCESSORIES FOR CONNECTION OF BURNERS TO GAS MAINS

## PRESSURE REGULATOR SPRINGS

		1/2"	3/4"	1"	1"1/4	1"1/2	2"	DN 65	DN 80	DN 100	DN 125	DN 150
PRESSURE INPUT 1bar	regulator code	97392010	97392020	97392030	97392040	97392050	97392060	97392070	97392080	97392090	97392100	97392110
	code spring	97399002	97399005	97399007	97399008	97399009	97399010	97399011	97399012	97399013	97399014	97399015
		97399016	97399017	97399018	97399019	97399020	97399021	97399022				
	PRESSURE INPUT 2 bar	regulator code	97392210	97392220	97392230	97392240	97392250	97392260	97392270	97392280	97392290	
code spring		97399001	97399005	97399008	97399010	97399011	97399012	97399013	97399014	97399015	97399016	97399017
		97399018										
PRESSURE INPUT 6 bar	regulator code	97392310	97392320	97392330	97392340	97382350	97392360	97392370	97392380	97392390		
	code spring	97399003	97399004	97399006	97399009	97399011	97399012	97399013	97399014	97399016	97399017	97399018

\*) of series.

## SPRINGS FOR PRESSURE REGULATOR

Part no.	Type
97399001	Regulator spring M0-0400
97399002	Regulator spring M0-0402
97399003	Regulator spring M0-0410
97399004	Regulator spring M0-0440
97399005	Regulator spring M0-0500
97399006	Regulator spring M0-0520
97399007	Regulator spring M0-0800
97399008	Regulator spring M0-0825
97399009	Regulator spring M0-0850
97399010	Regulator spring M0-0900
97399011	Regulator spring M0-0970

Part no.	Type
97399012	Regulator spring M0-1000
97399013	Regulator spring M0-1100
97399014	Regulator spring M0-1200
97399015	Regulator spring M0-1305
97399016	Regulator spring M0-1370
97399017	Regulator spring M0-1400
97399018	Regulator spring M0-1400/1800
97399019	Regulator spring M0-8400
97399020	Regulator spring M0-8500
97399021	Regulator spring M0-8600
97399022	Regulator spring M0-8700

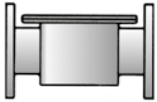


## ACCESSORIES FOR CONNECTION OF BURNERS TO GAS MAINS

### Gas filters approved CE

With pressure.

Max inlet pressure: 2 bar.

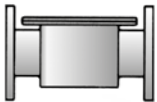


Part no.	Model	Gas connection
97410001	BTF	1/2" FF
97410002	BTF	3/4" FF
97410003	BTF	1" FF
97410004	BTF	1" 1/4 FF
97410005	BTF	1" 1/2 FF
97410006	BTF	2" FF
97419999	BTF	DN65 - PN16
97429999	BTF	DN80 - PN16
97439999	BTF	DN100 - PN16
97459999	BTF	DN125 - PN16
97449999	BTF	DN150 - PN16

### Gas filters approved CE

With pressure.

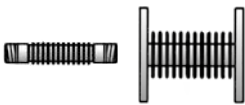
Max inlet pressure: 6 bar.



Part no.	Model	Gas connection
97410010	BTF/6	1" 1/4" FF
97410011	BTF/6	1" 1/2" FF
97410012	BTF/6	2" FF
97410013	BTF/6	DN65 - PN16
97410014	BTF/6	DN80 - PN16
97410015	BTF/6	DN100 - PN16

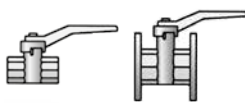
### Anti-vibration and compensation joints approved CE

DIN 30681 stainless steel.



Part no.	Model	Gas connection
97029999	BTGA	1/2" MM
97039999	BTGA	3/4" MM
97049999	BTGA	1" MM
97059999	BTGA	1" 1/4" MM
97069999	BTGA	1" 1/2" MM
97079999	BTGA	2" MM
97089999	BTGA	DN65 - PN16
97099999	BTGA	DN80 - PN16
97109999	BTGA	DN100 - PN16
97119999	BTGA	DN125 - PN16
97129999	BTGA	DN150 - PN16

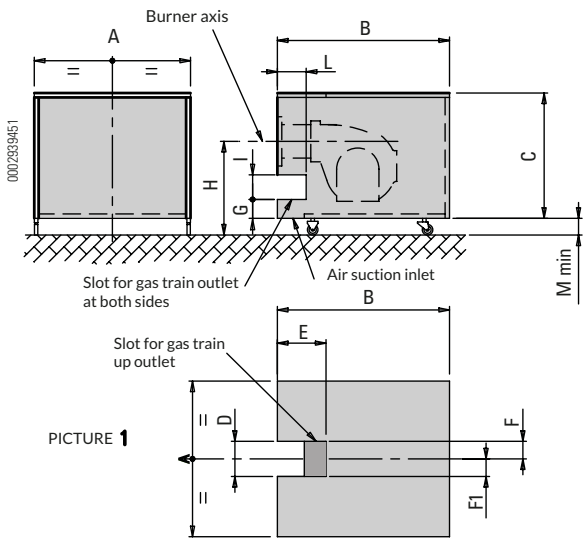
### Ball valves approved CE



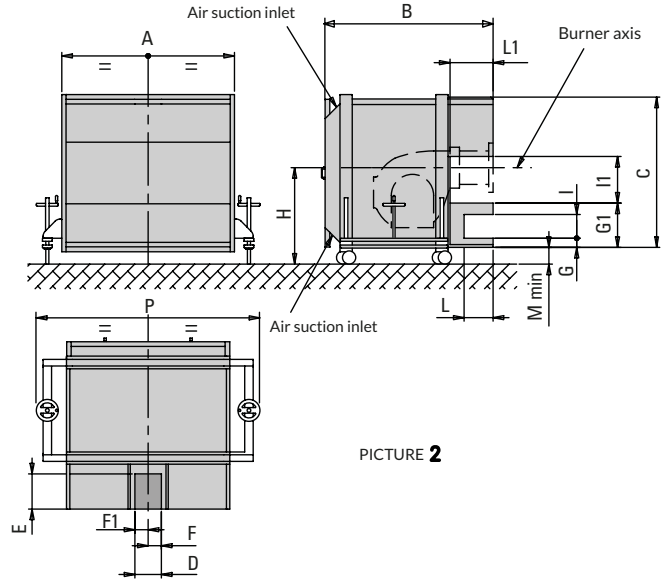
Part no.	Model	Gas connection
97679999	BTVS	3/8" FF
97689999	BTVS	1/2" FF
97699999	BTVS	3/4" FF
97709999	BTVS	1" FF
97719999	BTVS	1" 1/4" FF
97729999	BTVS	1" 1/2" FF
97739999	BTVS	2" FF
97749999	BTVS	DN65 - PN16
97759999	BTVS	DN80 - PN16
97769999	BTVS	DN100 - PN16
97179999	BTVS	DN125 - PN16
97189999	BTVS	DN150 - PN16

# SOUNDPROOF BURNER

Average sound pressure reduction of about 10 dB(A) measured in a laboratory with 1 meter microphone from the burner.



PICTURE 1



PICTURE 2

Model	Sound pressure	Pic.	A	B	C	D	E	F	F1	G	G1	H mm		I	I1	L	L1	M min	P
			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	min	max	mm	mm	mm	mm
97980053*	-10 dB(A)	1	1100	1340	860	85	500	42,5	42,5	207	-	660	1350	85	-	500	-	190	-
97980054	-10 dB(A)	1	750	1080	650	85	380	42,5	42,5	157	-	560	1060	85	-	355	-	190	-
97980055	-10 dB(A)	1	1100	1340	860	85	440	42,5	42,5	-	-	650	1300	-	-	-	-	190	-
97980057	-10 dB(A)	1	1335	1655	1130	210	495	47,5	162,5	-	-	900	1700	-	-	-	-	190	-
97980058*	-10 dB(A)	1	1610	1740	1190	500	380	37,5	462,5	24,5	-	950	1700	210	-	380	-	190	-
97980059	-20 dB(A)	1	1560	1645	1190	500	380	37,5	462,5	245	-	950	1700	210	-	380	-	190	-
97980061	-20 dB(A)	2	1956	1945	1740	300	400	150	150	104	504	1450	1700	270	530	330	490	180	2540

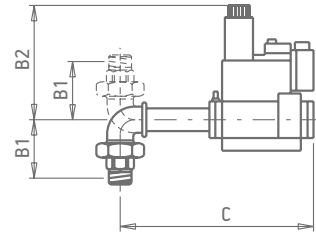
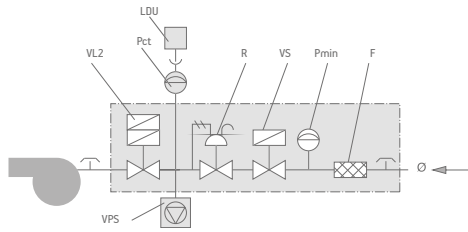
Note:

For gas burners in case of gas train up outlet it is necessary to install a 200 mm long cilindric extension.

\*) To decrease the sound pressure by 20 dB(A) please contact our sales office.

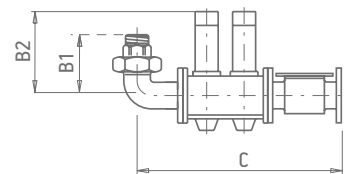
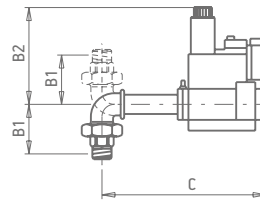
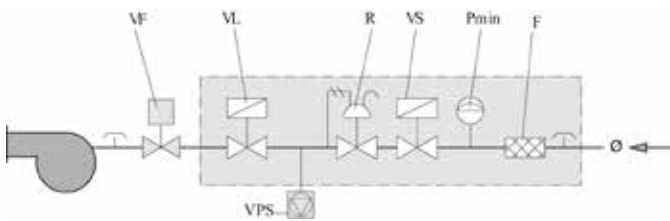
# GAS TRAIN STRUCTURE AND COMPOSITION

## B2



Gas train Part no.	Position									Gas train dimensions mm			Size of packaging mm	Weight
	F	LDU	Pct	Pmin	R	VL2	VPS	VS	Ø	B1	B2	C	L x P x H	kg
19990016 (MB... 405 - 1/2")	●			●	●	●	■	●	3/4"	72	210	204	300 x 210 x 300	5
19990020 (MB... 407 - 3/4")	●			●	●	●	■	●	3/4"	72	210	204	300 x 210 x 300	5
19990024 (MB... 410 - 1")	●			●	●	●	■	●	1"1/4	95	260	249	300 x 210 x 300	9
19990168 (MB... 412 - 1"1/4)	●			●	●	●	■	●	1"1/4	95	260	249	300 x 210 x 300	9
19990510 (MB... 407 - 3/4")	●			●	●	●	■	●	3/4"	72	210	365	300 x 210 x 300	5
19990511 (MB... 410 - 1")	●			●	●	●	■	●	1"1/4	95	260	410	300 x 210 x 300	9
19990512 (MB... 412 - 1"1/4)	●			●	●	●	■	●	1"1/4	95	260	410	300 x 210 x 300	9
19990513 (MB... 415 - 1"1/2)	●			●	●	●	■	●	1"1/2	103	270	500	460 x 250 x 460	12
19990514 (MB... 420 - 2")	●			●	●	●	■	●	2"	114	330	500	460 x 260 x 460	15

## B7



Pic. 1

Pic. 2

Gas train Part no.	Position									Gas train dimensions mm			Size of packaging mm	Weight	Pic.
	F	Pmax	Pmin	R	VF	VL	VPS	VS	Ø	B1	B2	C	L x P x H	kg	
19990712 (MB...412)	●	●	●	●	◆	●	▲	●	1"1/4	107	160	490	400x300x280	8	1
19990713 (MB...415)	●	●	●	●	◆	●	▲	●	1"1/2	115	170	595	460X250X460	11	1
19990714 (MB...415)	●	●	●	●	◆	●	▲	●	1"1/2	115	170	595	460X250X460	11	1
19990715 (MB...420)	●	●	●	●	◆	●	▲	●	2"	128	217	600	460X250X460	13	1
19990716 (MB...420)	●	●	●	●	◆	●	●	●	2"	128	217	600	460X250X460	13	1
19990717 (VGD20.503)	●	●	●	●	◆	●	●	●	2"	100	280	880	990X300X500	15	2
19990718 (VGD40.065)	●	●	●	●	◆	●	●	●	DN65	100	305	1120	1380X430X700	26	2
19990719 (VGD40.080)	●	●	●	●	◆	●	●	●	DN80	100	315	1190	1380X430X700	28	2

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

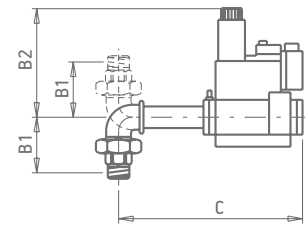
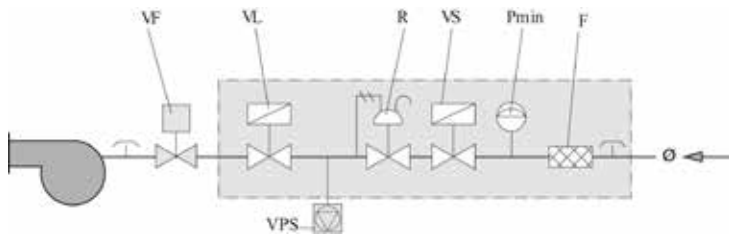
**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
**RP** Pneumatic regulator.  
**VF** Regulator throttle valve.  
**VL** Operating valve.  
**VL2** Two-stage operating valve.  
**VLP** Operating pilot valve.  
**VLR** Operating valve with pressure regulator.

**VP** Pilot valve.  
**VPS** VPS valve tightness control.  
**VS** Safety valve.  
**VSP** Safety pilot valve.  
**Ø** Gas train diameter.  
**Ø1** Main gas train diameter.  
**Ø2** Pilot gas train diameter.

● As Standard.  
▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.  
■ On request.  
◆ Mounted on burner.

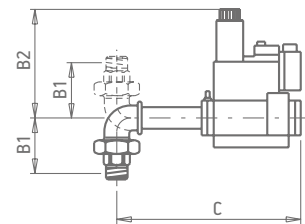
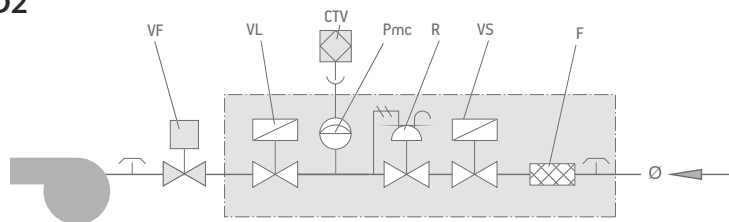
# GAS TRAIN STRUCTURE AND COMPOSITION

## BE7



Gas train Part no.	Position								Gas train dimensions mm			Size of packaging mm	Weight kg
	F	Pmin	R	VF	VL	VPS	VS	Ø	B1	B2	C	L x P x H	
19990548 (MB...415)	●	●	●	◆	●	▲	●	1"1/2	103	170	600	460 x 250 x 460	11
19990549 (MB...420)	●	●	●	◆	●	▲	●	2"	114	220	600	460 x 250 x 460	13
19990550 (VGD20.503)	●	●	●	◆	●	▲	●	2"	114	285	890	990 x 300 x 500	15
19990563 (VGD40.065)	●	●	●	◆	●	▲	●	DN65	114	320	1120	1380 x 430 x 700	26
19990564 (VGD40.080)	●	●	●	◆	●	▲	●	DN80	114	325	1175	1380 x 430 x 700	28
19990545 (MB...407 - 3/4")	●	●	●	◆	●	■	●	3/4"	72	210	450	300 x 210 x 300	5
19990546 (MB...410 - 1")	●	●	●	◆	●	■	●	1"1/4	95	260	490	400 x 300 x 280	8
19990547 (MB...412 - 1"1/4)	●	●	●	◆	●	■	●	1"1/4	95	260	490	400 x 300 x 280	8

## D2



Gas train Part no.	Position								Gas train dimensions mm			Size of packaging mm	Weight kg
	CTV	F	Pmc	R	VF	VL	VS	Ø	B1	B2	C	L x P x H	
19990524 (VGD20.503)	●	●	●	●	◆	●	●	2"	114	285	890	990 x 300 x 500	14
19990525 (VGD40.065)	●	●	●	●	◆	●	●	DN65	114	320	1120	1380 x 430 x 700	26
19990526 (VGD40.080)	●	●	●	●	◆	●	●	DN80	114	325	1175	1380 x 430 x 700	28
19990555 (MB... 407)	●	●	●	●	◆	●	●	3/4"	72	140	350	300 x 210 x 300	5
19990556 (MB... 410)	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990557 (MB... 412)	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990558 (MB... 415)	●	●	●	●	◆	●	●	1"1/2	103	170	490	460 x 250 x 460	11
19990559 (MB... 420)	●	●	●	●	◆	●	●	2"	114	220	520	520 x 410 x 410	13
19990561 (MB... 415)	●	●	●	●	◆	●	●	1"1/2	103	170	490	520 x 410 x 410	11
19990562 (MB... 420)	●	●	●	●	◆	●	●	2"	114	220	520	520 x 410 x 410	13
19990573 (MB... 407)	●	●	●	●	DN20	●	●	3/4"	72	160	305	400 x 300 x 280	12
19990574 (MB... 410)	●	●	●	●	DN20	●	●	1"1/4	95	160	355	400 x 300 x 280	15
19990575 (MB... 412)	●	●	●	●	DN20	●	●	1"1/4	95	160	355	400 x 300 x 280	15
19990576 (MB... 415)	●	●	●	●	DN20	●	●	1"1/2	103	170	445	520 x 410 x 410	18
19990577 (VGD40.065)	●	●	●	●	◆	●	●	DN65	125	320	760	1030 x 430 x 650	50
19990578 (VGD40.080)	●	●	●	●	◆	●	●	DN80	175	325	860	1030 x 430 x 650	57

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
**RP** Pneumatic regulator.  
**VF** Regulator throttle valve.  
**VL** Operating valve.  
**VL2** Two-stage operating valve.  
**VLP** Operating pilot valve.  
**VLR** Operating valve with pressure regulator.

**VP** Pilot valve.  
**VPS** VPS valve tightness control.  
**VS** Safety valve.  
**VSP** Safety pilot valve.  
**Ø** Gas train diameter.  
**Ø1** Main gas train diameter.  
**Ø2** Pilot gas train diameter.

**●** As Standard.  
**▲** As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.  
**■** On request.  
**◆** Mounted on burner.

# GAS TRAIN STRUCTURE AND COMPOSITION

D4

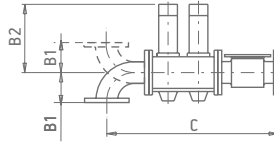
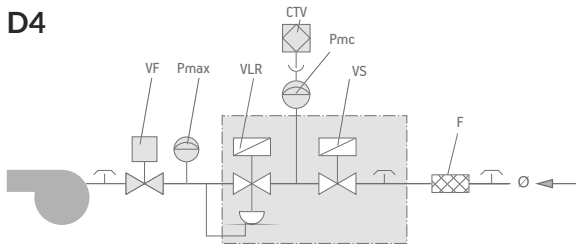


Fig. 1

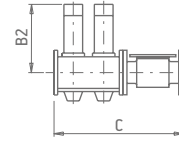


Fig. 2

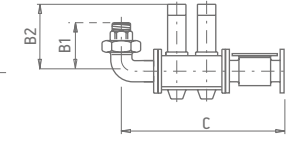


Fig. 3

Gas train Part no.	Position								Gas train dimensions mm			Size of packaging mm	Weight kg	Pic.
	CTV	F	Pmax	Pmc	VF	VLR	VS	Ø	B1	B2	C	L x P x H		
19990541 (VGD20.503 - 2")	●	2"	●	●	◆	●	●	2"	145	285	890	990 x 300 x 500	23	1
19990542 (VGD40.065 - 2"1/2)	●	DN65	●	●	◆	●	●	DN65	135	320	970	1380 x 430 x 700	36	1
19990543 (VGD40.080 - 3")	●	DN80	●	●	◆	●	●	DN80	135	325	1010	1380 x 430 x 700	38	1
19990544 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	175	330	1100	1380 x 430 x 700	44	1
19990587 (VGD20.503 - 2")	●	2"	●	●	◆	●	●	2"	-	285	530	650 x 500 x 380	19	2
19990588 (VGD40.065 - 2"1/2)	●	DN65	●	●	◆	●	●	DN65	-	320	580	830 x 430 x 640	26	2
19990589 (VGD40.080 - 3")	●	DN80	●	●	◆	●	●	DN80	-	325	630	830 x 430 x 640	29	2
19990590 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	-	330	730	830 x 430 x 640	40	2
19990606 (VGD40.080 - 3")	●	DN80	●	●	◆	●	●	DN80	165	325	1015	1380 x 430 x 700	38	1
19990607 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	175	330	1100	1380 x 430 x 700	44	1
19990608 (VGD40.125 - 5")	●	DN125	●	●	◆	●	●	DN125	170	350	1275	1580 x 430 x 720	60	1
19990618 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	200	330	1260	1380 x 430 x 710	45	1
19990619 (VGD40.125 - 5")	●	DN125	●	●	◆	●	●	DN125	209	350	1410	1580 x 430 x 740	83	1
19990620 (VGD40.150 - 6")	●	DN150	●	●	◆	●	●	DN150	200	370	1490	1580 x 430 x 740	95	1
19990626 (VGD40.150 - 6")	●	DN150	●	●	◆	●	●	DN150	170	370	1280	1580 x 430 x 720	95	1
19990640 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	175	330	1100	1380 x 430 x 700	44	1
19990641 (VGD40.125 - 5")	●	DN125	●	●	◆	●	●	DN125	170	350	1275	1580 x 430 x 720	60	1
19990648 (VGD40.100 - 4")	●	DN100	●	●	◆	●	●	DN100	200	330	1260	1380 x 430 x 710	45	1
19990649 (VGD40.125 - 5")	●	DN125	●	●	◆	●	●	DN125	207	350	1312	1580 x 430 x 740	83	1
19990650 (VGD40.150 - 6")	●	DN150	●	●	◆	●	●	DN150	200	370	1485	1580 x 430 x 740	95	1
19990666 (VGD20.065 - 2"1/2)	●	DN65	●	●	◆	●	●	DN65	135	285	1120	1380 x 430 x 700	45	1
19990679 (MBE 050)	●	2"	●	●	◆	●	●	2"	135	311	880	990 x 300 x 500	22	1
19990680 (MBE 065)	●	DN65	●	●	◆	●	●	DN65	105	380	970	1380 x 430 x 700	38	1
19990681 (MBE 080)	●	DN80	●	●	◆	●	●	DN80	105	380	1005	1380 x 430 x 700	40	1
19990682 (MBE 100)	●	DN100	●	●	◆	●	●	DN100	110	380	1100	1380 x 430 x 700	45	1
19990686 (MBE 080)	●	DN80	●	●	◆	●	●	DN80	105	380	1015	1370 x 420 x 710	47	1
19990687 (MBE 100)	●	DN100	●	●	◆	●	●	DN100	110	380	1100	1380 x 430 x 700	55	1
19990688 (MBE 125)	●	DN125	●	●	◆	●	●	DN125	128	380	1280	1580 x 430 x 720	58	1
19990689 (MBE 100)	●	DN100	●	●	◆	●	●	DN100	110	380	1135	1380 x 430 x 710	46	1
19990690 (MBE 125)	●	DN125	●	●	◆	●	●	DN125	128	380	1285	1580 x 430 x 740	81	1
19990691 (MBE 150)	●	DN150	●	●	◆	●	●	DN150	142	380	1355	1580 x 430 x 740	93	1
19990725 (MBE 050)	●	2"	●	●	◆	●	●	2"	99	311	878	990 x 300 x 500	13	3
19990726 (MBE 065)	●	DN65	●	●	◆	●	●	DN65	105	380	1118	1380 x 430 x 700	28	3
19990727 (MBE 080)	●	DN80	●	●	◆	●	●	DN80	105	380	1190	1380 x 430 x 700	30	3
19990728 (MBE 065)	●	DN65	●	●	◆	●	●	DN65	125	380	760	1030 x 430 x 650	52	1
19990729 (MBE 080)	●	DN80	●	●	◆	●	●	DN80	105	380	850	1030 x 430 x 650	59	1
19990743 (MBE 065)	●	DN65	●	●	◆	●	●	DN65	105	380	582	830 x 430 x 640	28	1
19990744 (MBE 080)	●	DN80	●	●	◆	●	●	DN80	105	380	622	830 x 430 x 640	31	1
19990745 (MBE 100)	●	DN100	●	●	◆	●	●	DN100	105	380	702	830 x 430 x 640	41	1

- CTV** Valve tightness control.
- F** Filter.
- LDU** LDU valve tightness control.
- Pct** Pressure switch for gas control.
- Pmax** Maximum pressure switch.
- Pmc** Minimum and control pressure switch gas leaks.
- Pmin** Minimum pressure switch.
- R** Pressure regulator.
- RF** Pressure regulator with filter.

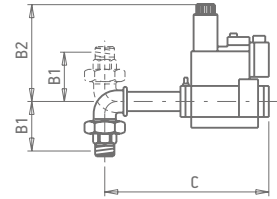
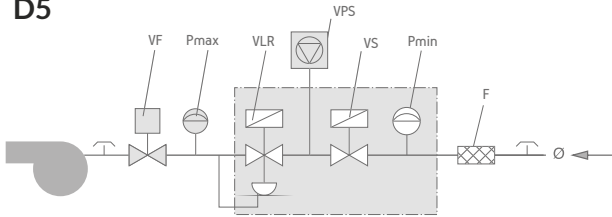
- RFP** Pressure regulator with filter for pilot gas train.
- RM** Manual flow rate regulator.
- RP** Pneumatic regulator.
- VF** Regulator throttle valve.
- VL** Operating valve.
- VL2** Two-stage operating valve.
- VLP** Operating pilot valve.
- VLR** Operating valve with pressure regulator.

- VP** Pilot valve.
- VPS** VPS valve tightness control.
- VS** Safety valve.
- VSP** Safety pilot valve.
- Ø** Gas train diameter.
- Ø1** Main gas train diameter.
- Ø2** Pilot gas train diameter.

- As Standard.
- ▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.
- On request.
- ◆ Mounted on burner.

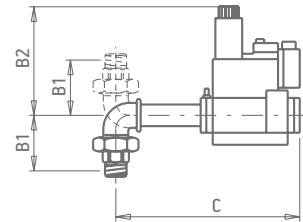
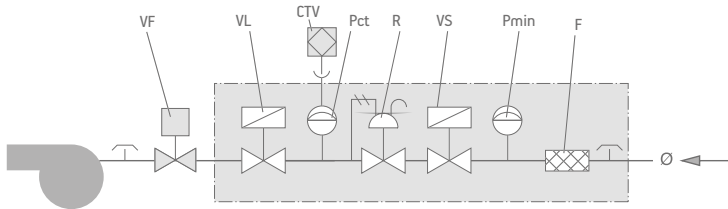
# GAS TRAIN STRUCTURE AND COMPOSITION

## D5



Gas train Part no.	Position							Gas train dimensions mm			Size of packaging mm	Weight
	Pmax	F	Pmin	VF	VLR	VS	Ø	B1	B2	C	L x P x H	kg
19990720 (MBE 050)	●	●	●	◆	●	●	2"	100	311	880	990X300X500	19,5
19990721 (MBE 065)	●	●	●	◆	●	●	DN65	100	381	1120	1380X430X700	45
19990722 (MBE 080)	●	●	●	◆	●	●	DN80	100	381	1190	1380X430X700	50
19990773 (MBE 050)	●	●	●	◆	●	●	2"	100	311	880	990X300X500	19,5
19990774 (MBE 065)	●	●	●	◆	●	●	DN65	100	381	1120	1380X430X700	45
19990775 (MBE 080)	●	●	●	◆	●	●	DN80	100	381	1190	1380X430X700	50

## D7



Gas train Part no.	Position									Gas train dimensions mm			Size of packaging mm	Weight
	CTV	F	Pct	Pmin	R	VF	VL	VS	Ø	B1	B2	C	L x P x H	kg
19990580 (MB...410 - 1")	●	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990581 (MB...412 - 1"1/4)	●	●	●	●	●	◆	●	●	1"1/4	95	160	390	300 x 210 x 300	8
19990582 (MB...415 - 1"1/2)	●	●	●	●	●	◆	●	●	1"1/2	103	170	490	460 x 250 x 460	11
19990583 (MB...420 - 2")	●	●	●	●	●	◆	●	●	2"	114	220	520	520 x 410 x 410	13
19990584 (VGD20.503 - 2")	●	●	●	●	●	◆	●	●	2"	114	285	890	990 x 300 x 500	15
19990585 (VGD40.065 - 2"1/2)	●	●	●	●	●	◆	●	●	DN65	114	320	1120	1380 x 430 x 700	26
19990586 (VGD40.080 - 3")	●	●	●	●	●	◆	●	●	DN80	114	325	1190	1380 x 430 x 700	28
19990624 (MB...420 - 2")	●	●	●	●	●	◆	●	●	2"	114	220	520	520 x 410 x 410	13

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

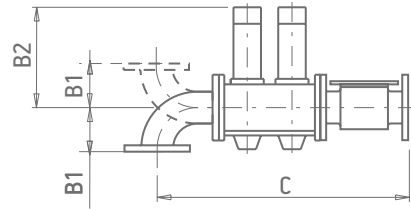
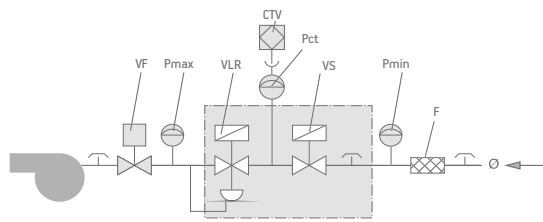
**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
**RP** Pneumatic regulator.  
**VF** Regulator throttle valve.  
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**Ø** Gas train diameter.  
**Ø1** Main gas train diameter.  
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**●** As Standard.  
**▲** As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.  
**■** On request.  
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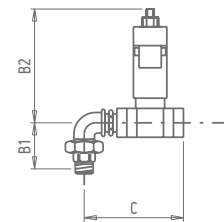
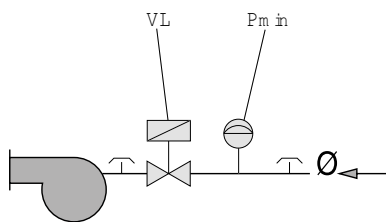
# GAS TRAIN STRUCTURE AND COMPOSITION

## D8



Gas train Part no.	Position									Gas train dimensions mm			Size of packaging mm	Weight
	CTV	F	Pct	Pmax	Pmin	VF	VLR	VS	Ø	B1	B2	C	L x P x H	kg
19990599 (VGD20.503 - 2")	●	2"	●	●	●	◆	●	●	2"	145	285	890	990 x 300 x 500	23
19990600 (VGD40.065 - 2"1/2)	●	DN65	●	●	●	◆	●	●	DN65	135	320	970	1380 x 430 x 700	36
19990601 (VGD40.080 - 3")	●	DN80	●	●	●	◆	●	●	DN80	135	325	1010	1380 x 430 x 700	38
19990602 (VGD40.100 - 4")	●	DN100	●	●	●	◆	●	●	DN100	175	330	1100	1380 x 430 x 700	44
19990615 (VGD40.080 - 3")	●	DN80	●	●	●	◆	●	●	DN80	165	325	1015	1380 x 430 x 700	38
19990616 (VGD40.100 - 4")	●	DN100	●	●	●	◆	●	●	DN100	175	330	1100	1380 x 430 x 700	44
19990617 (VGD40.125 - 5")	●	DN125	●	●	●	◆	●	●	DN125	170	350	1275	1580 x 430 x 720	60
19990627 (VGD40.150 - 6")	●	DN150	●	●	●	◆	●	●	DN150	170	370	1280	1580 x 430 x 720	95
19990665 (VGD20.065 - 2"1/2)	●	DN65	●	●	●	◆	●	●	DN65	135	285	1120	1380 x 430 x 700	45
19990683 (MBE 080)	●	DN80	●	●	●	◆	●	●	DN80	105	380	1005	1380 x 430 x 700	40
19990684 (MBE 100)	●	DN100	●	●	●	◆	●	●	DN100	110	380	1100	1380 x 430 x 700	45
19990685 (MBE 125)	●	DN125	●	●	●	◆	●	●	DN125	130	380	1175	1580 x 430 x 720	58
19990758 (MBE 050)	●	2"	●	●	●	◆	●	●	2"	145	311	890	990 x 300 x 500	22
19990759 (MBE 065)	●	DN65	●	●	●	◆	●	●	DN65	105	380	970	1380 x 430 x 700	38
19990760 (MBE 080)	●	DN80	●	●	●	◆	●	●	DN80	105	380	1005	1380 x 430 x 700	40
19990761 (MBE 100)	●	DN100	●	●	●	◆	●	●	DN100	110	380	1100	1380 x 430 x 700	45

## ME1



Gas train Part no.	Position			Gas train dimensions mm			Size of packaging mm	Weight
	Pmin	VL	Ø	B1	B2	C	L x P x H	kg
19990670	●	3/4"	3/4"	81	204	103	240 x 220 x 210	3
19990671	●	1"	1"	93	204	109	240 x 220 x 210	4
19990235	●	1/2"	1/2"	72	151	110	240 x 220 x 210	2

**CTV** Valve tightness control.  
**F** Filter.  
**LDU** LDU valve tightness control.  
**Pct** Pressure switch for gas control.  
**Pmax** Maximum pressure switch.  
**Pmc** Minimum and control pressure switch gas leaks.  
**Pmin** Minimum pressure switch.  
**R** Pressure regulator.  
**RF** Pressure regulator with filter.

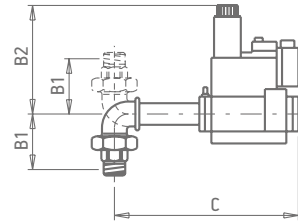
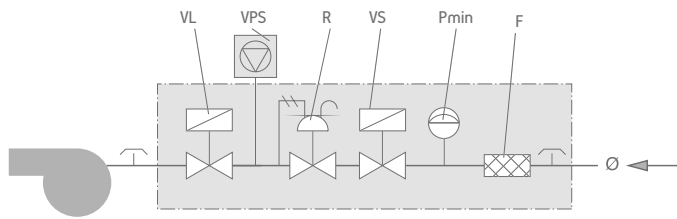
**RFP** Pressure regulator with filter for pilot gas train.  
**RM** Manual flow rate regulator.  
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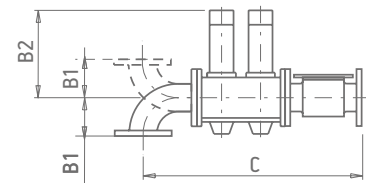
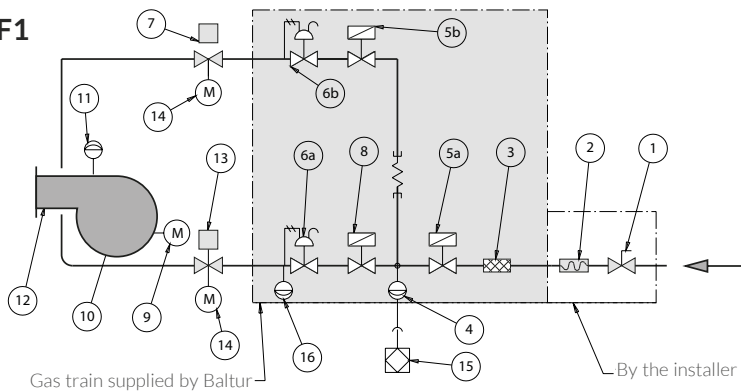
# GAS TRAIN STRUCTURE AND COMPOSITION

## M2



Gas train Part no.	Position							Gas train dimensions mm			Size of packaging mm L x P x H	Weight kg
	F	Pmin	R	VL	VPS	VS	Ø	B1	B2	C		
19990002 (MB... 405)	●	●	●	●	■	●	3/4"	72	140	204	310 x 210 x 250	4
19990005 (MB... 407)	●	●	●	●	■	●	3/4"	72	140	204	310 x 210 x 250	4
19990008 (MB... 410)	●	●	●	●	■	●	1"1/4	95	160	249	310 x 210 x 250	7
19990166 (MB... 412)	●	●	●	●	■	●	1"1/4	95	160	249	310 x 210 x 250	7
19990466 (MBC... 65)	●	●	●	●	●	●	1/2"	67	150	198	240 x 220 x 210	2
19990545 (MB... 407)	●	●	●	●	■	●	3/4"	72	140	450	300 x 210 x 300	5
19990546 (MB... 410)	●	●	●	●	■	●	1"1/4	95	160	490	400 x 300 x 280	8
19990547 (MB... 412)	●	●	●	●	■	●	1"1/4	95	160	490	400 x 300 x 280	8
19990548 (MB... 415)	●	●	●	●	■	●	1"1/2	103	270	600	460 x 250 x 460	11
19990549 (MB... 420)	●	●	●	●	■	●	2"	114	330	600	650 x 500 x 380	13

## F1



Pic. 1

Gas train Part no.	Position										Gas train dimensions mm			Size of packaging mm L x P x H	Weight kg	Pic.	
	CTV	F	Pmax	Pmc	VF	VF2	VLR	VS	R2	VS2	Ø	B1	B2				C
19990667 (VDG20.503)	●	2"	●	●	◆	◆	●	●	●	●	2"	165	278	755	990x300x500	23	1
19990668 (VDG40.065)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	165	302	784	1380x430x700	36	1
19990675 (VDG20.503)	●	2"	●	●	◆	◆	●	●	●	●	2"	135	279	871	990x300x500	27	1
19990676 (VDG40.065)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	131	303	969	1380x430x700	40	1
19990677 (VDG40.080)	●	DN80	●	●	◆	◆	●	●	●	●	DN80	131	313	1004	1380x430x700	42	1
19990678 (VDG40.100)	●	DN100	●	●	◆	◆	●	●	●	●	DN100	163	331	1096	1380x430x700	48	1
19990734 (MMBE065)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	105	380	970	1380x430x700	36	1
19990762 (MMBE065)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	105	380	970	1380x430x700	40	1
19990763 (MMBE080)	●	DN80	●	●	◆	◆	●	●	●	●	DN80	105	380	1005	1380x430x700	42	1
19990764 (MMBE100)	●	DN100	●	●	◆	◆	●	●	●	●	DN100	110	380	1095	1380x430x700	48	1

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