SUPER LOW NOx GAS BURNERS

ELECTRONIC MODULATION

FROM 165 TO 5500 kW

TBG SLX
SERIES

NOx emissions
<50 mg/kWh

baltur
Energy for People

“The biggest challenge of our times is the climate change, which represent first a threat to our habits and lifestyle.

Confronting with a change indeed is never easy, people feel insecurity and anxiety in facing the unknown: it’s a challenge to ourselves and to our beliefs.

Only those who will accept the challenge can embrace success”

TBG SLX SERIES

EMBRACE THE CHALLENGE

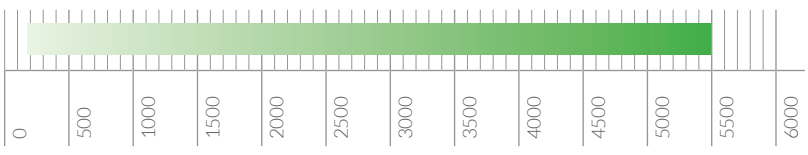
Features

- 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 VDS and O2/CO sensor
- Suitable for 72 h continuous operation

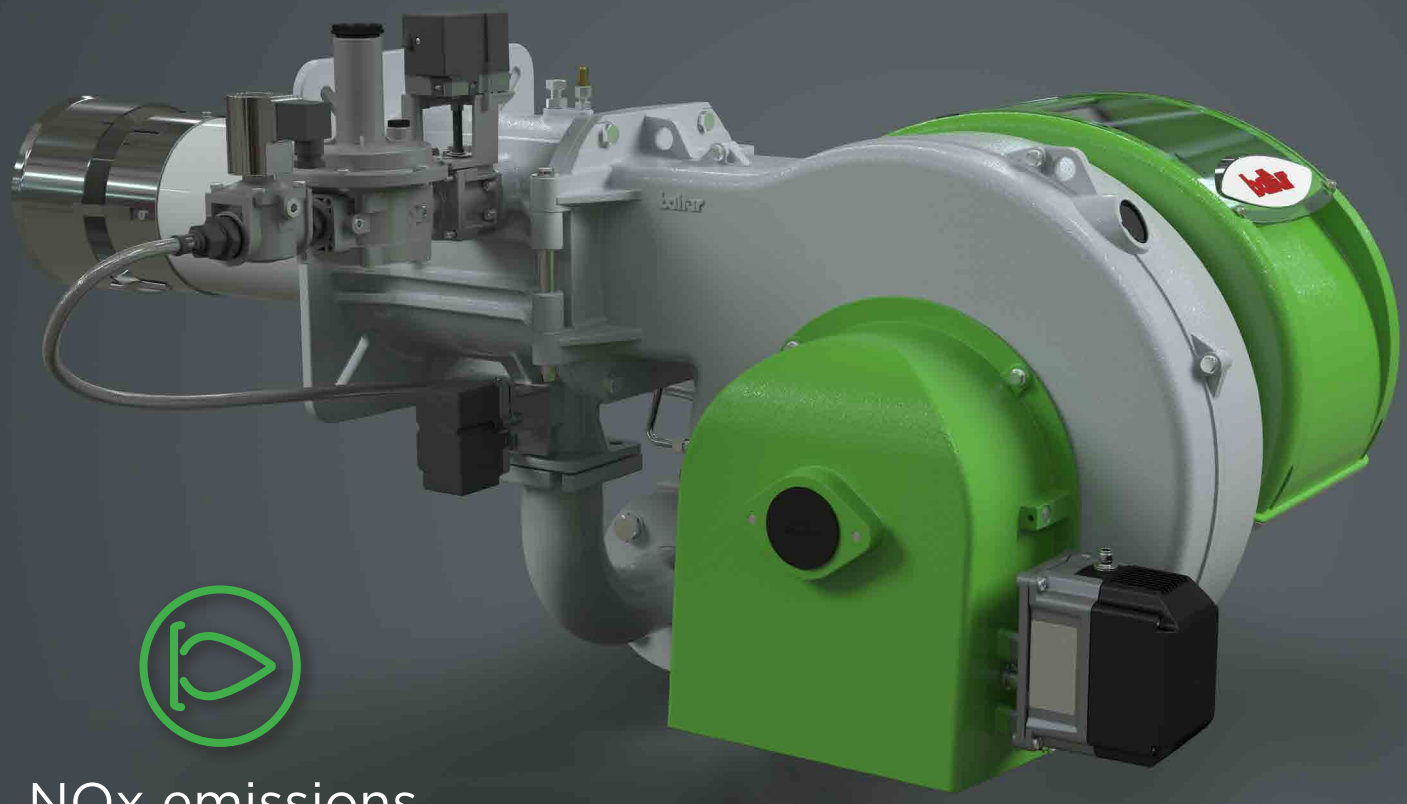
Your benefits

- 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

THE TBG SLX RANGE INCLUDES **5 MODELS**
FROM **165** KW TO **5500** KW



TBG SLX:
stability, performance and low NOx



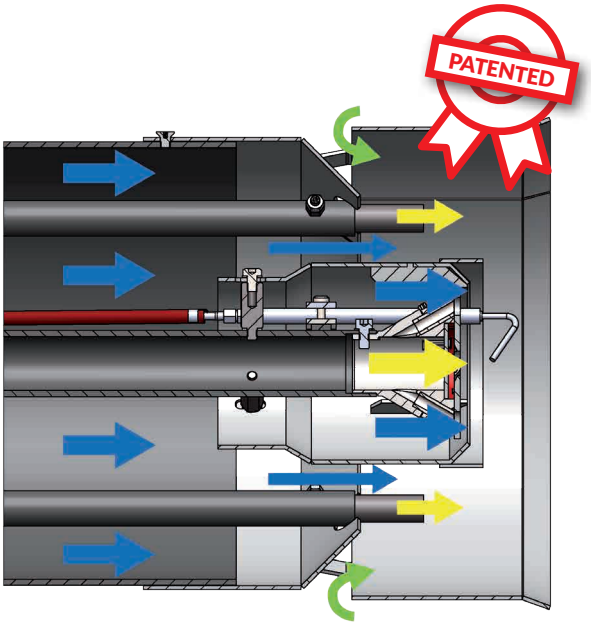
NOx emissions
<50 mg/kWh

baltur

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.**



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

kW 165 - 5500

TBG... SLX SERIES

LOW NOX

CONFORM TO: GAR DIRECTIVE 2016/426/CE | E.M.C. DIRECTIVE 2014/30/UE | L.V. DIRECTIVE 2014/35/UE | MACHINERY DIRECTIVE 2006/42/CE | REFERENCE STANDARD EN676.

CE 0085

TBG 80 - 320 SLX

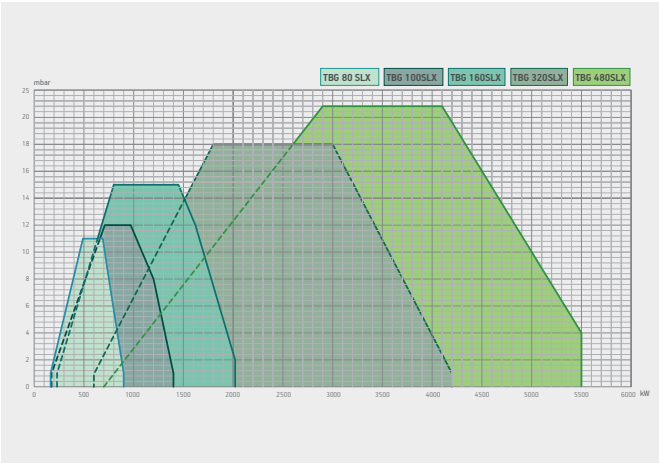
TBG 480 SLX

Gas burner compliant with European standard EN676. Operation:	TBG 80 SLX electronic modulation	TBG 100 SLX electronic modulation	TBG 160 SLX electronic modulation	TBG 320 SLX electronic modulation	TBG 480 SLX electronic modulation
P.I.D. controller and signal receiver (0÷10V / 4÷20 mA) integrated in burner control panel	o	o	o	o	o
Modulation ratio	1 : 5	1 : 7	1 : 10	1 : 7	1 : 8
Low NOx and CO emissions gas burner according to European standard EN676:	class 4	class 4	class 4	class 4	class 4
72 h continuous operation	o	o	o	o	o
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	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	down	down
Secondary gas train outlet:	right/left	right/left	right/left	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	IP54	IP54
Noise level dB(A)	74	75	79	81	88
Residual oxygen (O_2) monitoring in the fumes in order to maintain an optimal air/fuel ratio and ensure increased performance	o	o	o	o	o
Residual oxygen (O_2) and carbon monoxide (CO) and monitoring of oxidizing components (H_2) in fumes to ensure increased performance and less atmospheric pollution	o	o	o	o	o
VDS fan motor to reduce overall electrical power comsuption	o	o	o	o	o

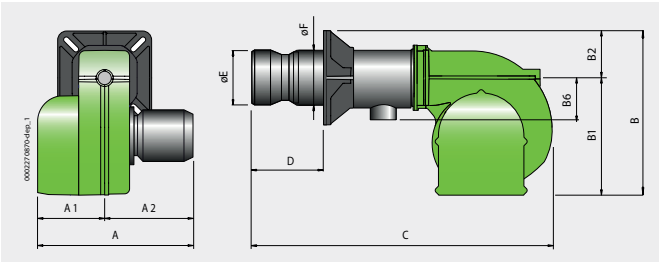
LEGEND:

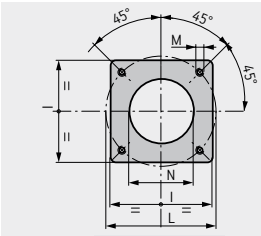
o Optional • Included

CE 0085



Model	Size of packaging L	P	H	Weight without packaging
	mm			kg
TBG 80 SLX	1130	800	663	64,8
TBG 100 SLX	1130	800	663	69,2
TBG 160 SLX	1130	800	663	74,8
TBG 320 SLX	1500	1150	970	197
TBG 480 SLX	1500	1320	970	204





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	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
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	165 ÷ 900	**TBG 80 SLX**	**18240010**	3N AC 50Hz 400V	1,5	3) 4)
	class 4	175 ÷ 1400	**TBG 100 SLX**	**18260010**	3N AC 50Hz 400V	2,2	3) 4)
	class 4	230 ÷ 2020	**TBG 160 SLX**	**18280010**	3N AC 50Hz 400V	3	3) 4)
	class 4	600 ÷ 4200	**TBG 320 SLX**	**18440010**	3N AC 50Hz 400V	11	3) 4)
	class 4	700 ÷ 5500	**TBG 480 SLX**	**18460010**	3N AC 50Hz 400V	15	3) 4)
			Frequency 60 Hz				
	class 4	165 ÷ 900	**TBG 80 SLX**	**on demand**	3N AC 60Hz 380V	1,5	3) 4)
	class 4	175 ÷ 1400	**TBG 100 SLX**	**on demand**	3N AC 60Hz 380V	2,2	3) 4)
	class 4	230 ÷ 2020	**TBG 160 SLX**	**on demand**	3N AC 60Hz 380V	3	3) 4)
	class 4	600 ÷ 4200	**TBG 320 SLX**	**on demand**	3N AC 60Hz 380V	11	3) 4)
	class 4	700 ÷ 5500	**TBG 480 SLX**	**on demand**	3N AC 60Hz 380V	15	3) 4)

TO COMPLETE THE BURNER

DESCRIPTION	PART NO.
Modulating kit	98000059
Modulating probe for LCM 100	see page 7
TBG 80 SLX: LPG nozzle kit 2)	98000447
TBG 100 SLX: LPG nozzle kit 2)	98000448
TBG 160 SLX: LPG nozzle kit 2)	98000449

ACCESSORIES AVAILABLE ON REQUEST

DESCRIPTION
Soundproof burner cover

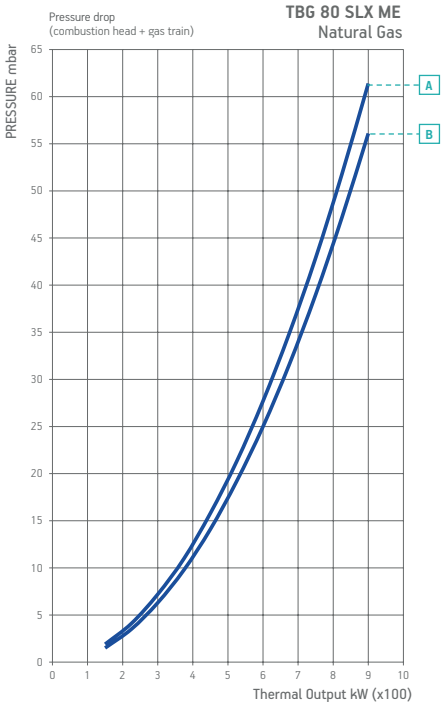
GAS BURNERS ACCESSORIES

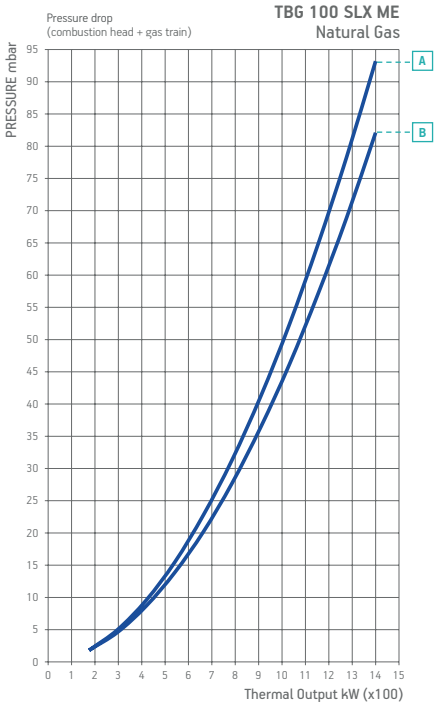
Boiler coupling kit, plug for wiring.

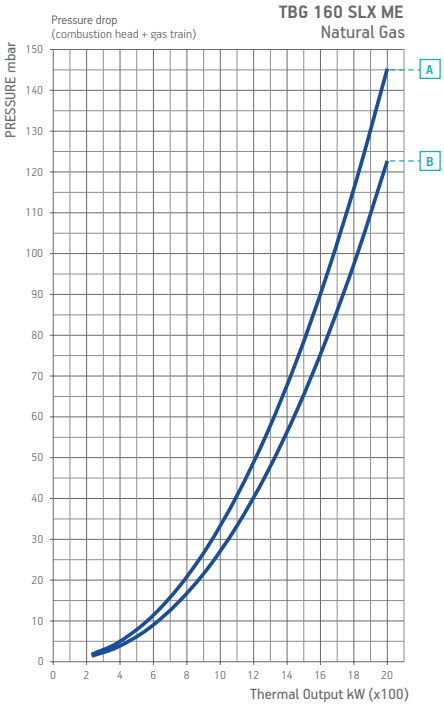
NOTE

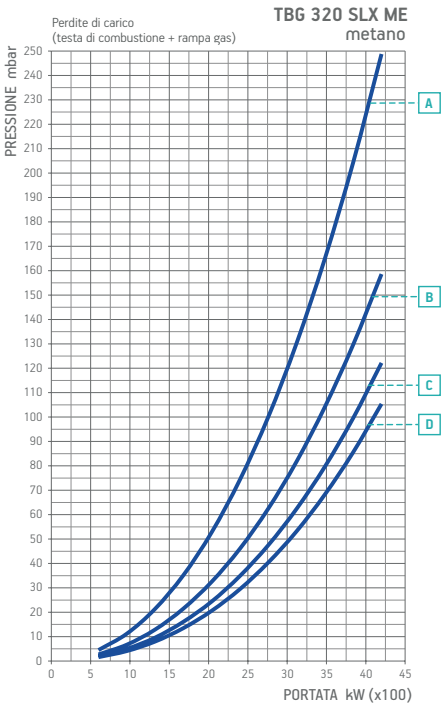
2 Si prega di contattare il vostro Referente Commerciale per l'applicazione GPL.
3 Dotato di insonorizzatore.
4 Dotato di dispositivo chiusura aria.
Potere calorifico inferiore alle condizioni di riferimento 0°C, 1013mbar:
Natural
gas: Hi = 35,80 MJ/m^3 = 8550 kcal/m^3,
Tipi di gas diversi e per pressioni diverse, consultare i nostri uffici commerciali.

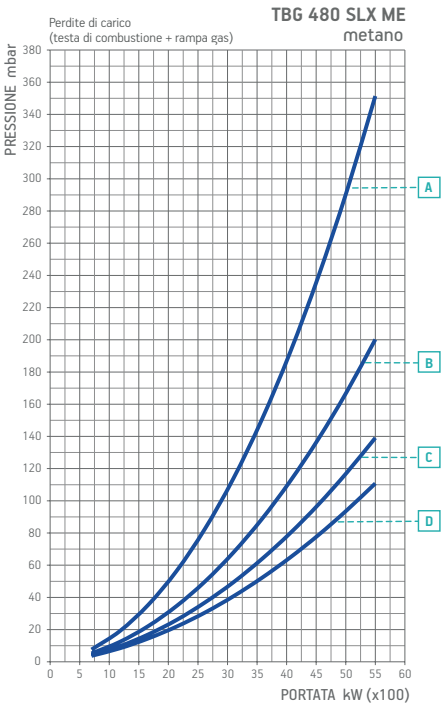
BURNER/GAS TRAIN MATCH











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.	Notes
						Part no.	Part no.	Part no.	Part no.		
TBG 80 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	–	Included		
		B	CE/EXP	200	CTV	19990668	Included	–	Included		
		B	CE/EXP	200	CTV	19990734	Included	–	Included		
TBG 100 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	–	Included		
		B	CE/EXP	200	CTV	19990668	Included	–	Included		
		B	CE/EXP	200	CTV	19990734	Included	–	Included		
TBG 160 SLX	Natural gas	A	CE/EXP	200	CTV	19990667	Included	–	Included		
		B	CE/EXP	200	CTV	19990668	Included	–	Included		
		B	CE/EXP	200	CTV	19990734	Included	–	Included		
TBG 320 SLX	Natural gas	A	CE/EXP	500	CTV	19990675	Included	–	Included		
		B	CE/EXP	500	CTV	19990676	Included	–	Included		
		C	CE/EXP	500	CTV	19990677	Included	–	Included		
		D	CE/EXP	500	CTV	19990678	Included	–	Included		
		B	CE/EXP	500	CTV	19990762	Included	–	Included		
		C	CE/EXP	500	CTV	19990763	Included	–	Included		
		D	CE/EXP	500	CTV	19990764	Included	–	Included		
TBG 480 SLX	Natural gas	A	CE/EXP	500	CTV	19990675	Included	–	Included		
		B	CE/EXP	500	CTV	19990676	Included	–	Included		
		C	CE/EXP	500	CTV	19990677	Included	–	Included		
		D	CE/EXP	500	CTV	19990678	Included	–	Included		
		B	CE/EXP	500	CTV	19990762	Included	–	Included		
		C	CE/EXP	500	CTV	19990763	Included	–	Included		
		D	CE/EXP	500	CTV	19990764	Included	–	Included		

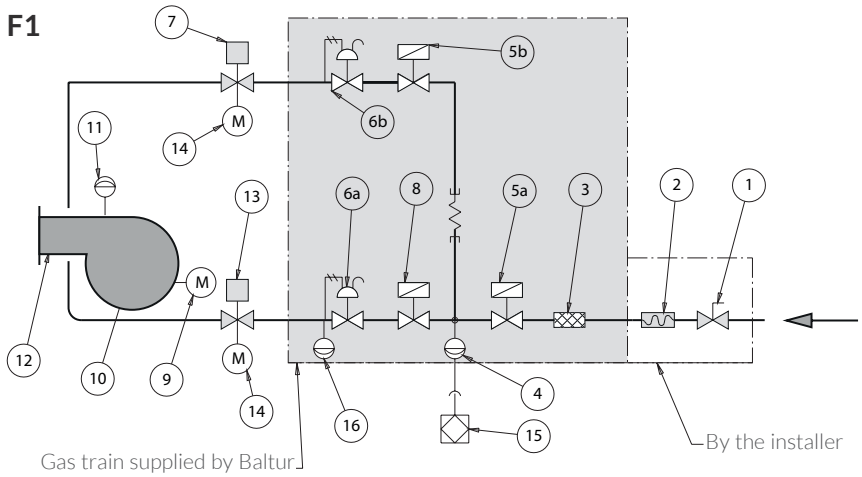
NOTES

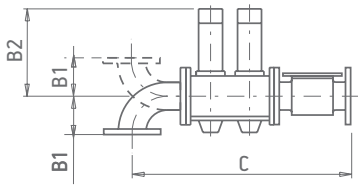
CTV Gas train with Valve Tightness Control.
**) Maximum gas inlet pressure at pressure regulator.

To choose the correct gas train please refer to the information on Burners Catalogue.

GAS TRAIN STRUCTURE AND COMPOSITION

F1





Pic. 1

Gas train Part no.	Position											Gas train dimensions mm			Dimensioni imballo mm	Weight	Pic.
	CTV	F	Pmax	Pmc	VF	VF2	VLR	VS	R2	VS2	Ø	B1	B2	C	L x P x H	kg	
19990667 (VDG20.503 - 2")	●	2"	●	●	◆	◆	●	●	●	●	2"	165	278	755	990x300x500	23	1
19990668 (VDG40.065 - 2" 1/2)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	165	302	784	1380x430x700	36	1
19990675 (VDG20.503 - 2")	●	2"	●	●	◆	◆	●	●	●	●	2"	135	279	871	990x300x500	27	1
19990676 (VDG40.065 - 2" 1/2)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	131	303	969	1380x430x700	40	1
19990677 (VDG40.080 - 3")	●	DN80	●	●	◆	◆	●	●	●	●	DN80	131	313	1004	1380x430x700	42	1
19990678 (VDG40.100 - 4")	●	DN100	●	●	◆	◆	●	●	●	●	DN100	163	331	1096	1380x430x700	48	1
19990734 (MMBE065 - 2" 1/2)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	105	380	970	1380x430x700	36	1
19990762 (MMBE065 - 2" 1/2)	●	DN65	●	●	◆	◆	●	●	●	●	DN65	105	380	970	1380x430x700	40	1
19990763 (MMBE080 - 3")	●	DN80	●	●	◆	◆	●	●	●	●	DN80	105	380	1005	1380x430x700	42	1
19990764 (MMBE100 - 4")	●	DN100	●	●	◆	◆	●	●	●	●	DN100	110	380	1095	1380x430x700	48	1

1 Manual shut-off valve.
2 Anti-vibration joint.
3 Gas filter.
4 Minimum gas pressure switch and gas leakage control.
5a Main gas line safety valve.
5b Secondary gas line safety valve.
6a Main gas line pressure regulator.
6b Secondary gas line pressure regulator.
7 Secondary gas butterfly valve.
8 Operating valve.
9 Air regulation servomotor.
10 Air regulation damper.
11 Air pressure switch.
12 Combustion head.
13 Main gas butterfly valve.
14 Gas butterfly regulation servomotor.
15 Valve tightness control device.
16 Maximum pressure switch.
CTV Valve tightness control.
Pmax Maximum pressure switch.
Pmc Minimum and control pressure switch gas leaks.
F Filter.
VF Regulator butterfly valve.
VF2 Secondary gas regulation butterfly valve.
VLR Operating valve with pressure regulator.
VS Safety valve.
VS2 Secondary gas line safety valve.
R2 Secondary gas line pressure regulator.
Ø Gas train diameter.
● As standard.
◆ Mounted on burner.

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.

Temperature probe for LCM 100 modulation

Part no.	Temperature	Type robe	Probe length	Male coupling
98000023	0 °C ÷ 130 °C	PT 1000	85 [1)]	R 1/2"
98000021	0 °C ÷ 500 °C	PT 1000	200 [1)]	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

External climate regulation

Part no.	Description	Temperature
85060070	Temperature probe PT100	-50 °C ÷ 90 °C

baltur

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