



## GAS/2 Series

Two Stage Gas Burners

GAS 3/2	80/130	÷	350	kW
GAS 4/2	120/180	÷	470	kW
GAS 5/2	155/320	÷	660	kW
GAS 6/2	300/520	÷	1050	kW
GAS 7/2	400/800	÷	1760	kW
GAS 9/2	1000/1750	÷	3200	kW



The GAS/2 series of burners covers a firing range from 130 to 3200 kW and they have been designed for use in civil installations of average dimensions, like building areas and large apartment groups or for use in industrial applications, like small or medium plants.

Operation is two stage; the combustion head, that can be set on the basis of required output, allows optimal performance ensuring good combustion and reducing fuel consumption.

The main feature of these burners is their reliability due to a simple and strong construction, which permits operation without particular maintenance intervention.

Simplified maintenance is achieved by the slide bar system, which allows easy access to all of the essential components of the combustion head. All electrical components are easily accessible only by dismounting a protection panel, thus guaranteeing a quick and simple intervention on components.

## Technical Data

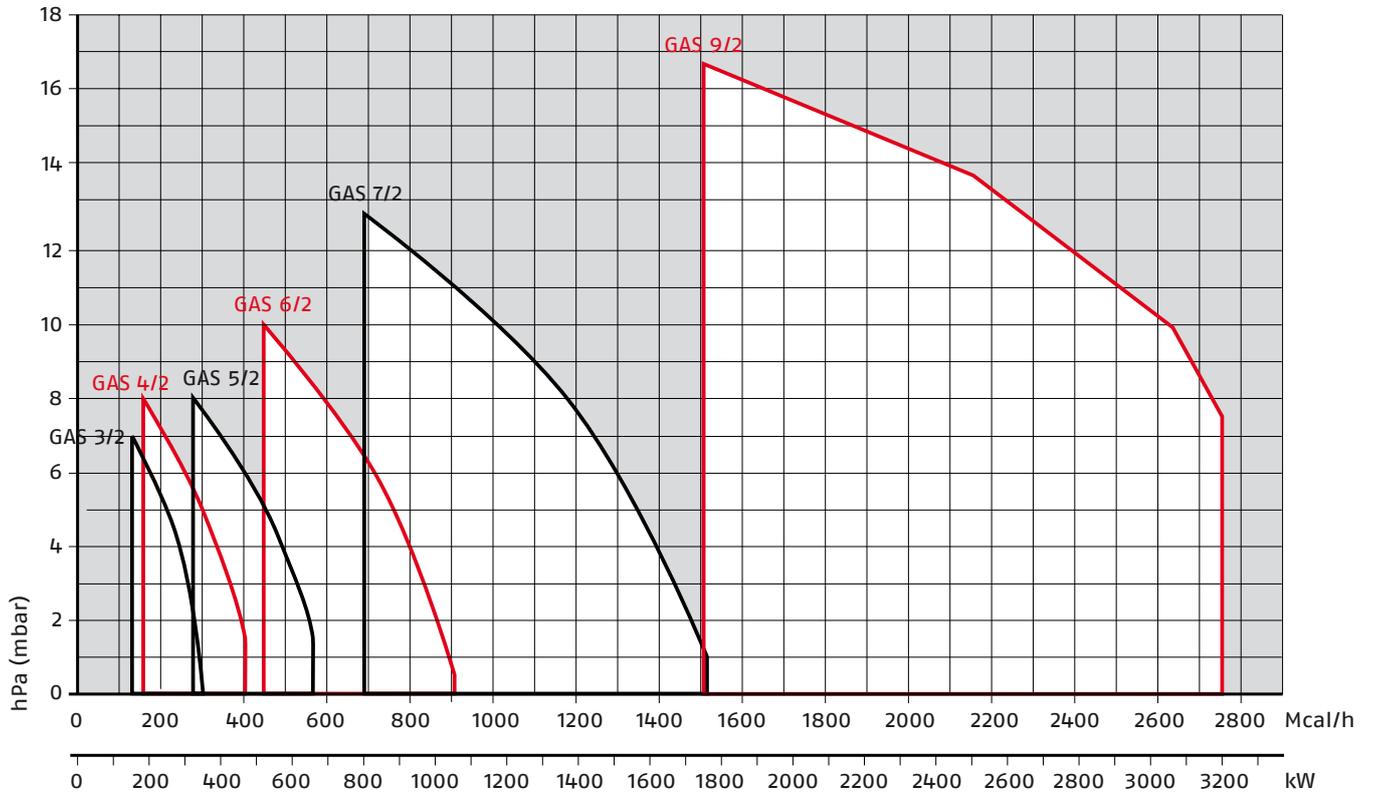
MODEL		GAS 3/2	GAS 4/2	GAS 5/2	GAS 6/2	GAS 7/2	GAS 9/2
Burner operation mode		Two stage					
Modulation ratio at max. output		2 ÷ 1					3 ÷ 1
Servomotor	type	LKS210					
	run time	5					
Heat output	kW	80/130÷350	120/180÷470	155/320÷660	300/520÷1050	400/800÷1760	1000/1750÷3200
	Mcal/h	69/112÷301	104/155÷404	133/275÷568	258/447÷903	344/668÷1514	860/1500÷2752
Working temperature	°C min./max.	0/40					
<b>FUEL/AIR DATA</b>							
Net calorific value G20 gas	kWh/Nm <sup>3</sup>	10					
G20 density gas	kg/Nm <sup>3</sup>	0,71					
G20 gas delivery	Nm <sup>3</sup> /h	8/13÷35	12/18÷47	15.5/32÷66	30/52÷105	40/80÷176	100/175÷320
Net calorific value G25 gas	kWh/Nm <sup>3</sup>	8.6					
G25 density gas	kg/Nm <sup>3</sup>	0.78					
G25 delivery gas	Nm <sup>3</sup> /h	9/15÷41	14/21÷55	18/37÷77	35/60.5÷122	46.5/93÷205	116/203÷372
Net calorific value LPG gas	kWh/Nm <sup>3</sup>	25.8					
LPG gas density	kg/Nm <sup>3</sup>	2.02					
LPG gas delivery	Nm <sup>3</sup> /h	3/5÷13.5	5/7÷18	6/12÷25.5	11.5/20÷41	15.5/31÷68	39/68÷124
Fan	type	Centrifugal with forward curve blades					
Air temperature	Max. °C	60					
<b>ELECTRICAL DATA</b>							
Electrical supply	Ph/Hz/V	1/50/230~(±10%)			3N/50/400~(±10%) (star) 3/50/230~(±10%) (delta)		
Auxiliary electrical supply	Ph/Hz/V	1/50/230~(±10%)					
Control box	type	RMG					
Total electrical power	kW	0.4	0.54	0.85	1,7	3.4	9
Auxiliary electrical power	kW	0.15	0.17	0.1	0.2	0.4	1.5
Protection level	IP	40					
Motor electrical power	kW	0.25	0.37	0.75	1.5	3	7.5
Rated motor current	A	1.8	2.9	2.85±1.65	5.9÷3.4	10.9÷6.3	26±15
Motor start current	A	4.8	9.5	10÷6	22.5±13		
Motor protection level	IP	54					
Ignition transformer	V1 - V2	230V - 1x8 kV					230V - 1x8 kV
	I1 - I2	1.8A - 20 mA					1.8A - 30 mA
Operation		Intermittent (at least one stop every 24 h)					
<b>EMISSIONS</b>							
Sound pressure	dB(A)	75	78	83	84	87	89.4
Sound power	W	--					
CO Emission	mg/kWh	< 100					< 10
NOx Emission	mg/kWh	< 170					< 150
<b>APPROVAL</b>							
Directive		2006/42/EC - 2009/142/EC - 2014/30/UE - 2014/35/UE					
Conforming to		EN 676					
Certification		CE 0085AQ0707					--

**Reference conditions:**

Temperature: 20°C - Pressure: 1013,5 mbar - Altitude: 0 m a.s.l. - Noise measured at a distance of 1 meter.

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# Firing Rates



Useful firing rate for choosing the burner

**Test conditions conforming to EN 676:**

Temperature: 20°C  
 Pressure: 1013,5 mbar  
 Altitude: 0 m a.s.l.

# Fuel Supply

## GAS TRAIN DESIGNATION

Series:	MB
	CB
Size:	405 407 410 412 415 420
	1200 1900 3100 5000
	512 - 520 525 5065 5080 50100 50125 50150
Operation:	/1 1st stage mode opening
	/2 2nd stage mode opening
Leak detection control:	- 0
	CT leak detection control device installed on the gas train
	CQ equipped with pressure switch for leak detection control
Joint type:	R threaded joint
	F standard flange ISO
Electrical connection:	T Terminals - Terminal strip
	SD Domestic plug
	SM Medium voltage plug
Standard output pressure range:	- without pressure governor
	0 with governor and air/gas proportional pressure
	2 with governor and output pressure up to 20 mbar
	3 with governor and output pressure up to 30 mbar
	4 with governor and output pressure up to 40 mbar
	5 with governor and output pressure up to 50 mbar
	6 with governor and output pressure up to 60 mbar
	8 with governor and output pressure up to 80 mbar
	15 with governor and output pressure up to 150 mbar
Valve control:	0 shared
	2 separate

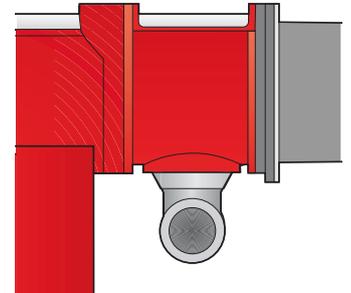
MB	420	/2	CT	R	T	2	0
BASIC DESIGNATION				EXTENDED DESIGNATION			

**GAS TRAINS**

Fuel can be supplied either from the right or left hand sides.

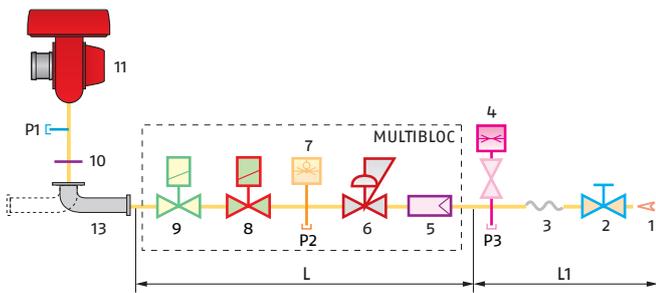
The gas train can be selected to best fit system requirements depending on the fuel output and pressure in the supply line.

The gas train can be "Multibloc " type (containing the main components in a single unit) or "Composed" type (assembly of the single components).

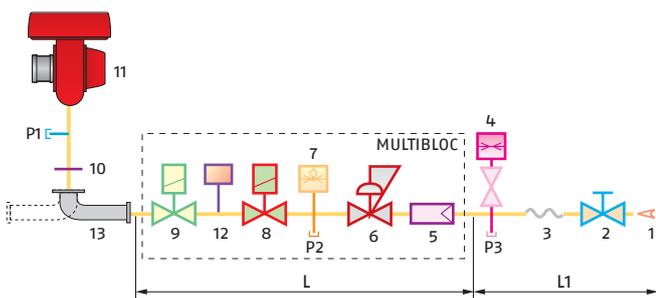


Example of the gas train connection flange of GAS/2 burners.

**MULTIBLOC GAS TRAIN WITHOUT SEAL CONTROL**

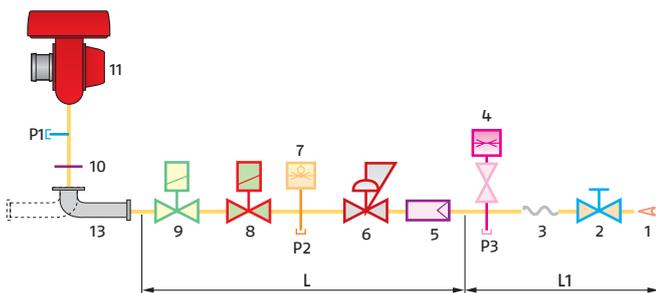


**MULTIBLOC GAS TRAIN WITH SEAL CONTROL**

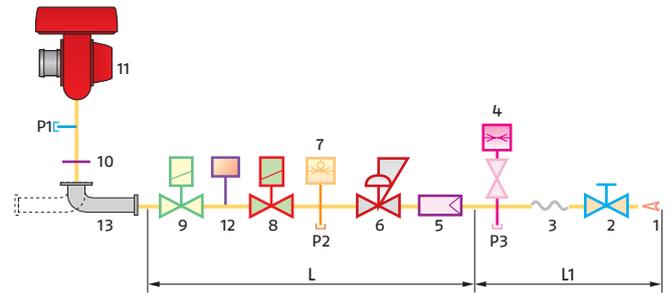


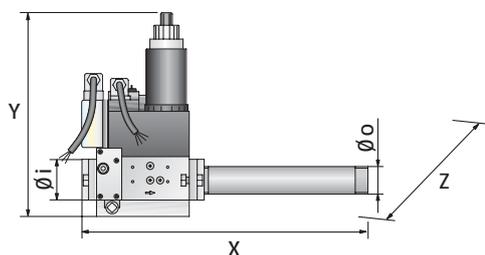
1	Gas input pipework
2	Manual valve
3	Anti-vibration joint
4	Pressure gauge with pushbutton cock
5	Filter
6	Pressure regulator (vertical)
7	Minimum gas pressure switch
8	VS safety solenoid (vertical)
9	VR regulation solenoid (vertical) Two settings: - firing output (rapid opening) - maximum output (slow opening)
10	Gasket and flange supplied with the burner
11	Burner
12	Seal control mechanism for valves 8-9. According to standard EN 676, the seal control is compulsory for burners with maximum output above 1200 kW.
13	Gas train-burner adapter
P1	Combustion head pressure
P2	Pressure downstream from the regulator
P3	Pressure upstream from the filter
L	Gas train supplied separately, with the code given in the table
L1	Installer's responsibility

**COMPOSED GAS TRAIN WITHOUT SEAL CONTROL**

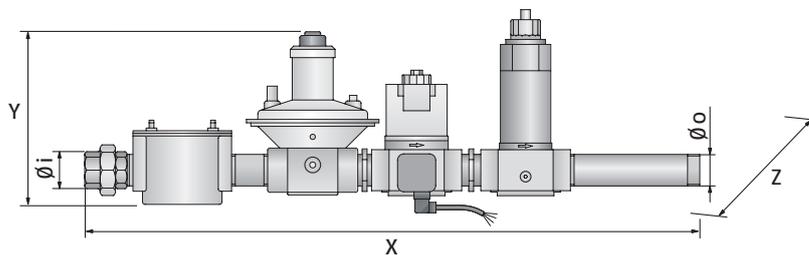


**COMPOSED GAS TRAIN WITH SEAL CONTROL**





Example of gas train "MULTIBLOC" type without seal control



Example of gas train "COMPOSED" type without seal control

Gas trains are approved by standard EN 676 together with the burner.

The overall dimensions of the gas train depends on how they are constructed. The following table shows the maximum dimensions of the gas trains that can be fitted to the burners of GAS series, intake and outlet diameters and seal control if fitted.

Please note that the seal control can be installed as an accessory, if not already installed on the gas train.

The maximum gas pressure of gas train "Multibloc" type is 300 mbar, and that one of gas train "Composed" type is 500 mbar.

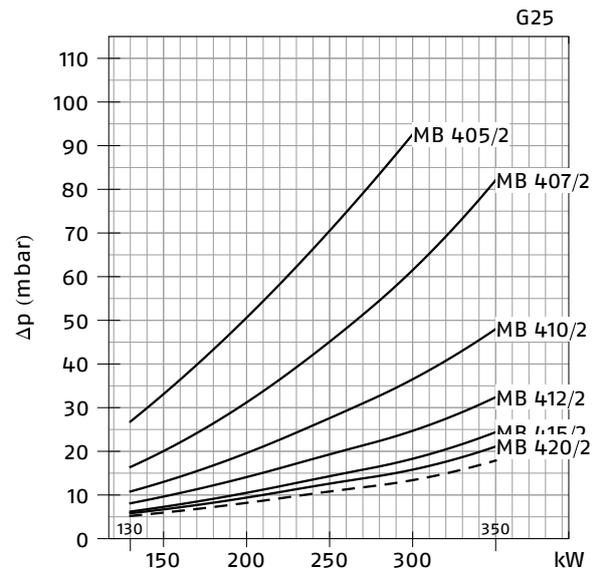
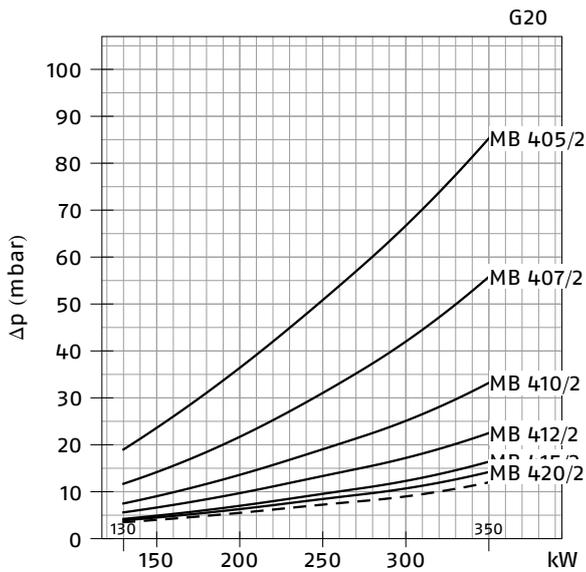
GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
MB 405/2 - RSD 20	3970084	Rp ¾"	Rp ¾"	371	186	92
MB 407/2 - RSD 20	3970537	Rp ¾"	Rp ¾"	371	196	92
MB 407/2 - RT 20	3970556	Rp ¾"	Rp ¾"	371	196	92
MB 410/2 - RSD 20	3970534	Rp ¾"	Rp ¾"	405	221	116
MB 410/2 - RT 20	3970557	Rp ¾"	Rp ¾"	405	221	116
MB 412/2 - RT 20	3970152	Rp 1" ½	Rp 1" ½	433	217	116
MB 415/2 - RT 20	3970183	Rp 1" ½	Rp 1" ½	523	350	100
MB 420/2 - RT 20	3970184	Rp 2"	Rp 2"	523	410	100
MB 420/2 CT RT 20	3970185	Rp 2"	Rp 2"	523	410	227

GAS TRAIN						
MODEL	CODE	Ø in	Ø out	X mm	Y mm	Z mm
CB 512/2 - RT 32	3970153	Rp 1" ½	Rp 1" ½	1013	345	195
CB 512/2 CT RT 32	20045590	Rp 1" ½	Rp 1" ½	891	261	245
CB 520/2 - RT 32	3970154	Rp 2"	Rp 2"	1150	350	250
CB 520/2 CT RT 32	20045591	Rp 2"	Rp 2"	986	328	255
CB 5065/2 - FT 32	3970155	DN 65	DN 65	1331	405	285
CB 5065/2 CT FT 32	3970167	DN 65	DN 65	1331	405	355
CB 5080/2 - FT 32	3970156	DN 80	DN 80	934	416	285
CB 5080/2 CT FT 32	3970168	DN 80	DN 80	1770	405	385

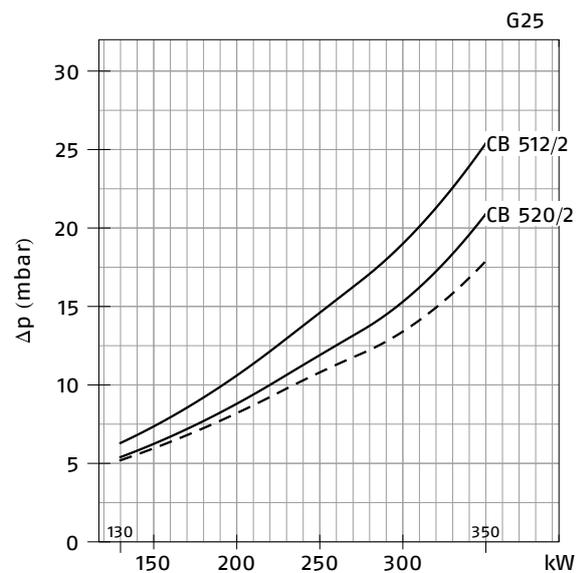
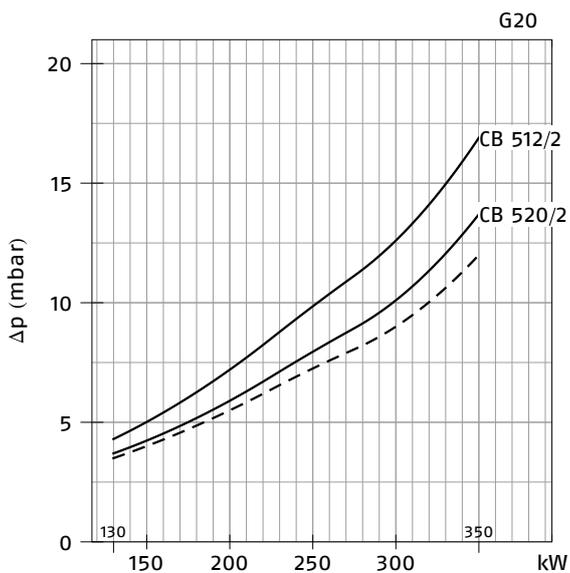
# Pressure Drop Diagram

The diagrams indicate the minimum pressure drop of the burners with the various gas trains that can be matched with them; at the value of these pressure drop add the combustion chamber pressure. The value thus calculated represents the minimum required input pressure to the gas train.

## GAS 3/2 (NATURAL GAS)

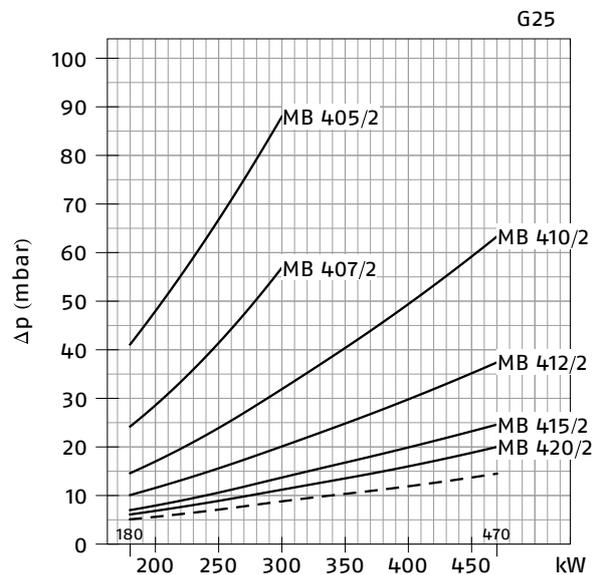
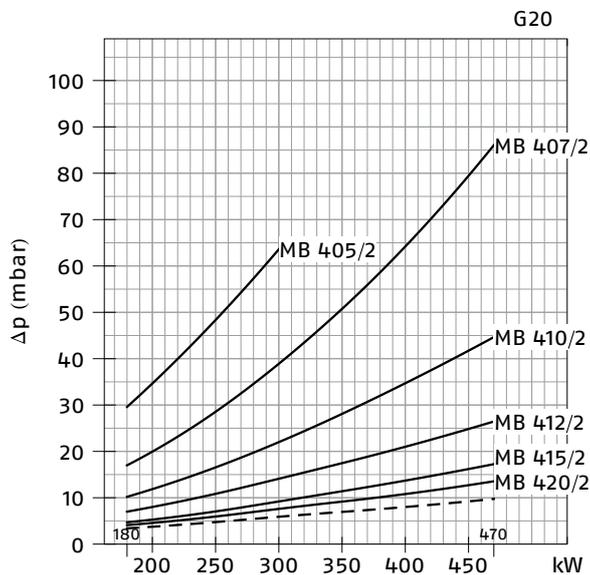


## GAS 3/2 (NATURAL GAS)

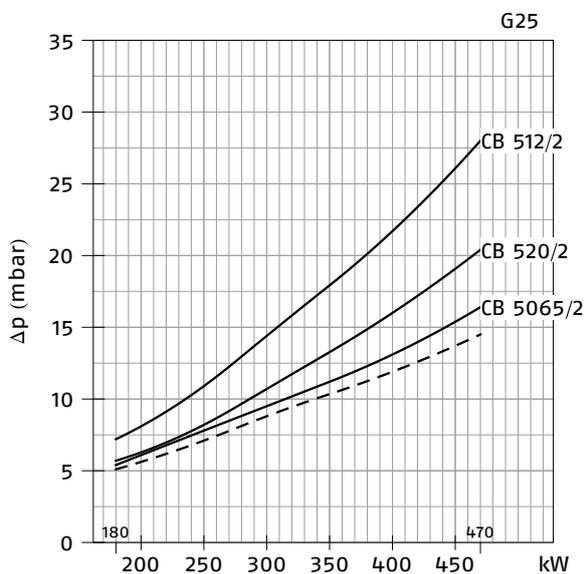
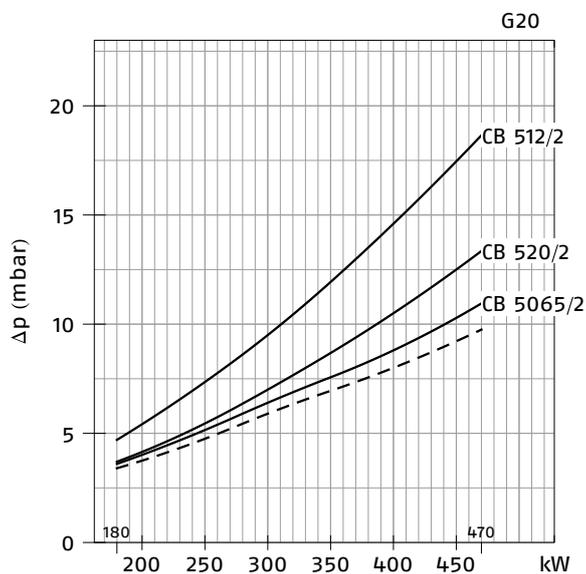


- Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

**GAS 4/2 (NATURAL GAS)**

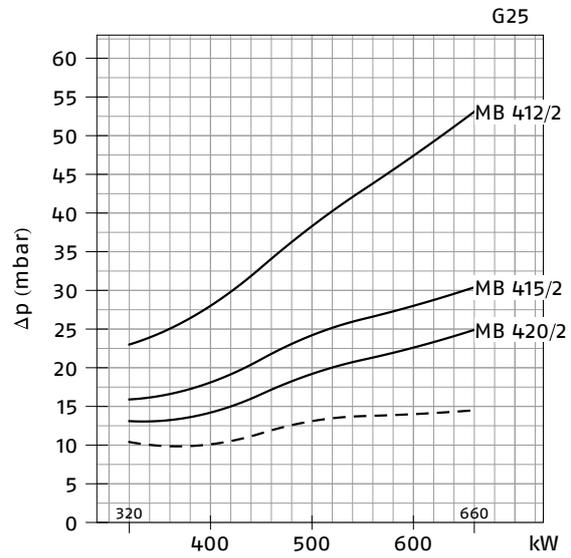
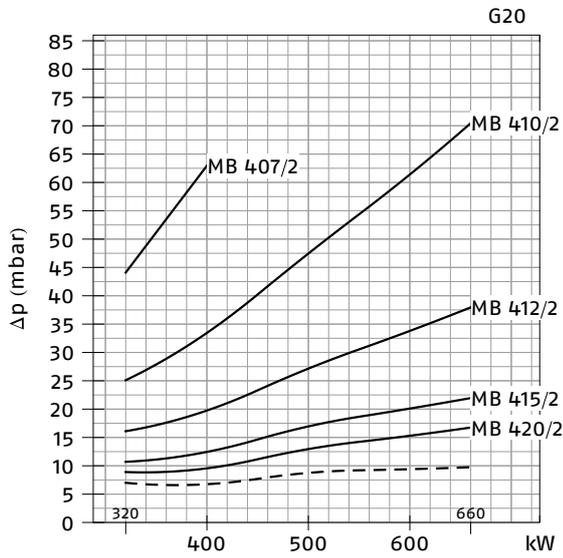


**GAS 4/2 (NATURAL GAS)**

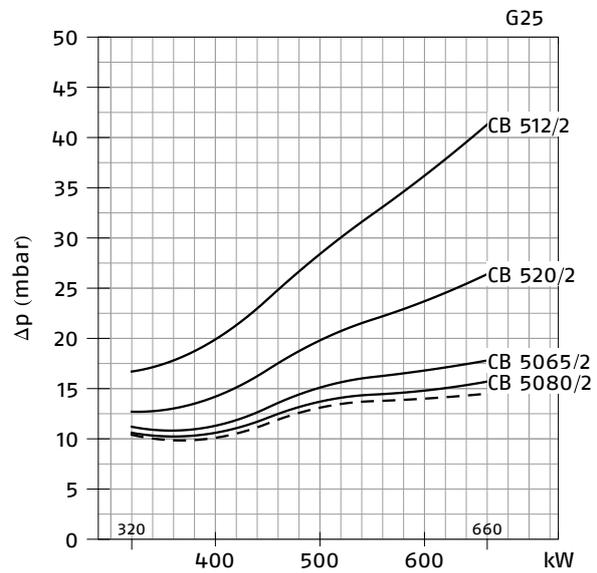
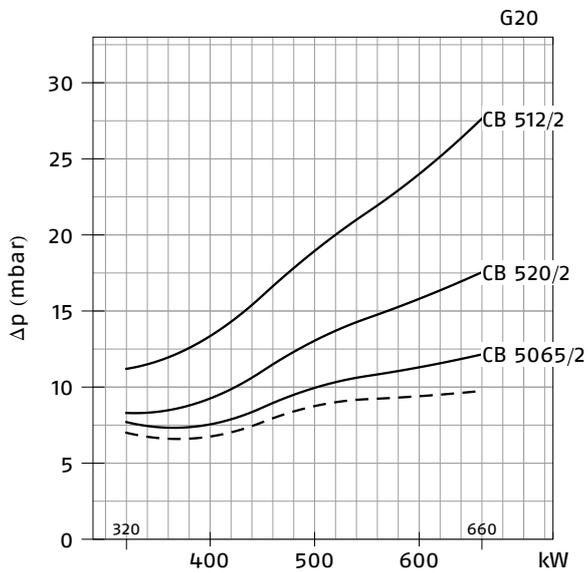


- Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

**GAS 5/2 (NATURAL GAS)**

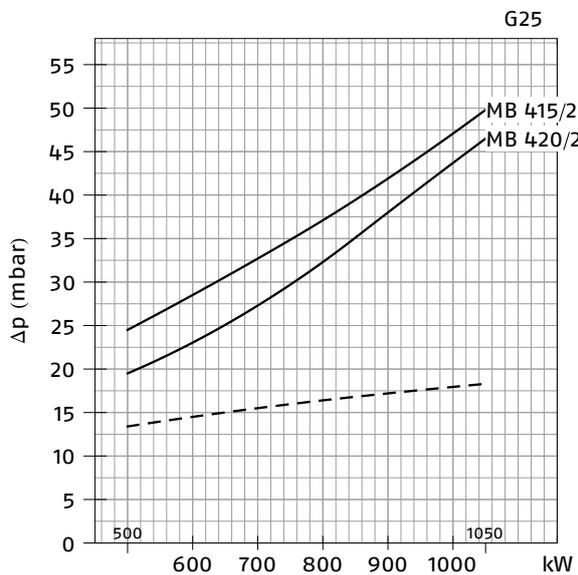
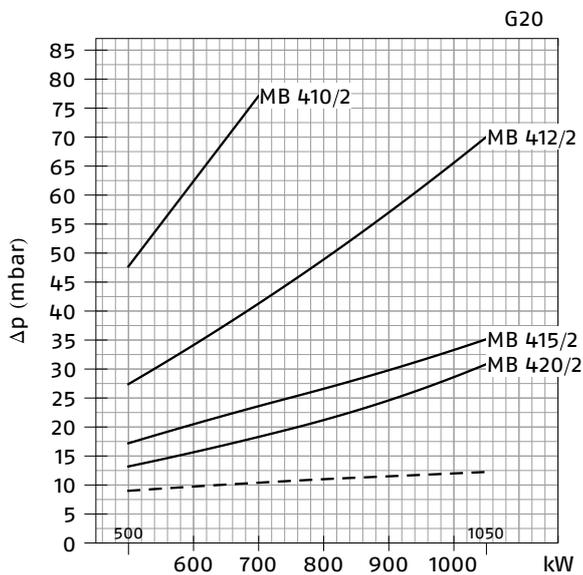


**GAS 5/2 (NATURAL GAS)**

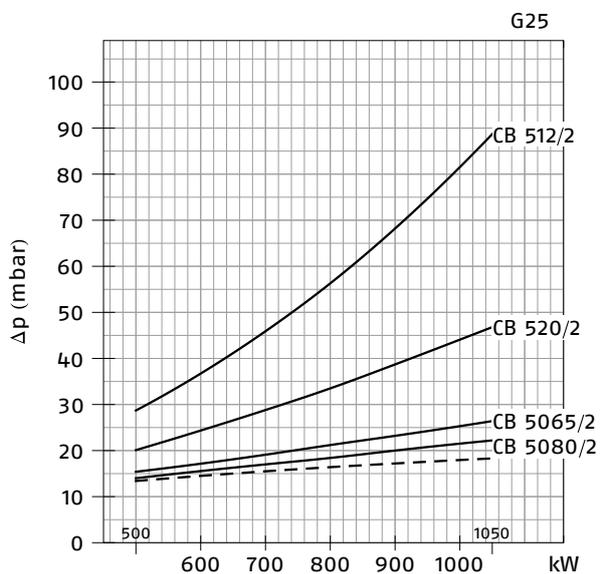
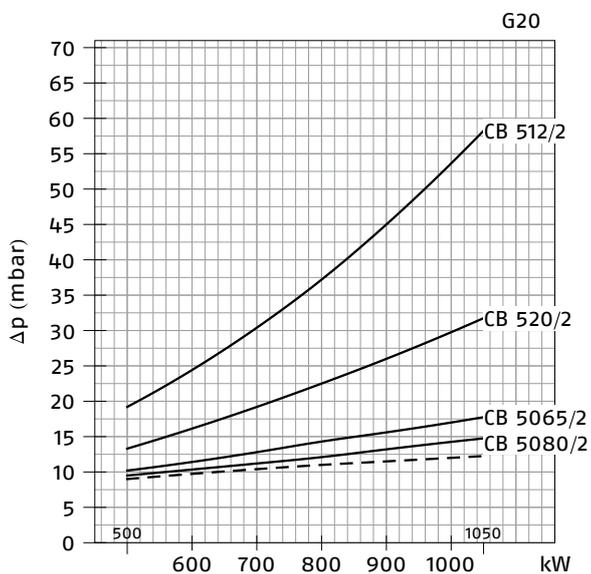


Combustion head + gas butterfly valve + gas train  
 Combustion head + gas butterfly valve

**GAS 6/2 (NATURAL GAS)**

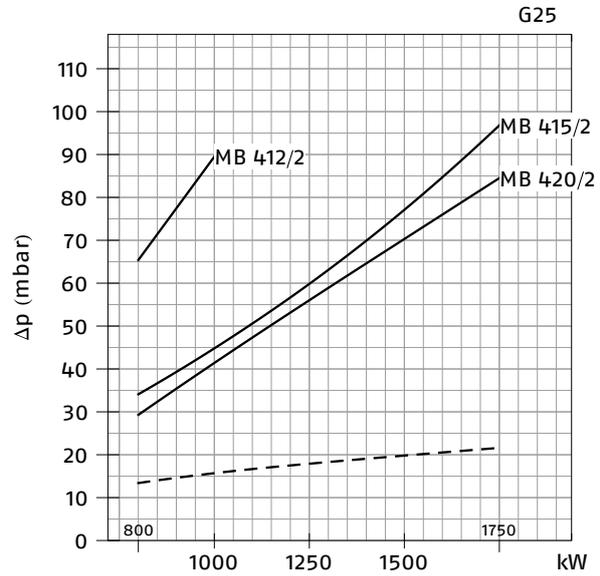
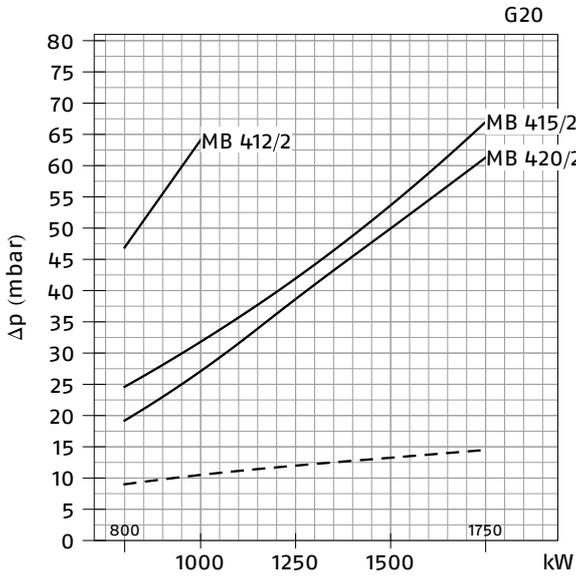


**GAS 6/2 (NATURAL GAS)**

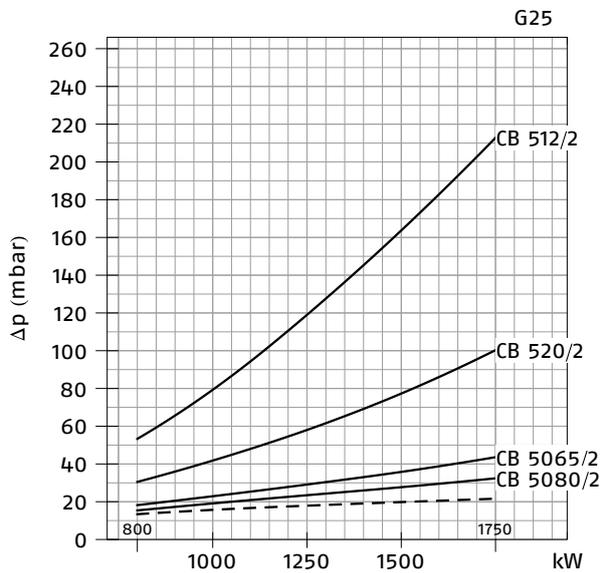
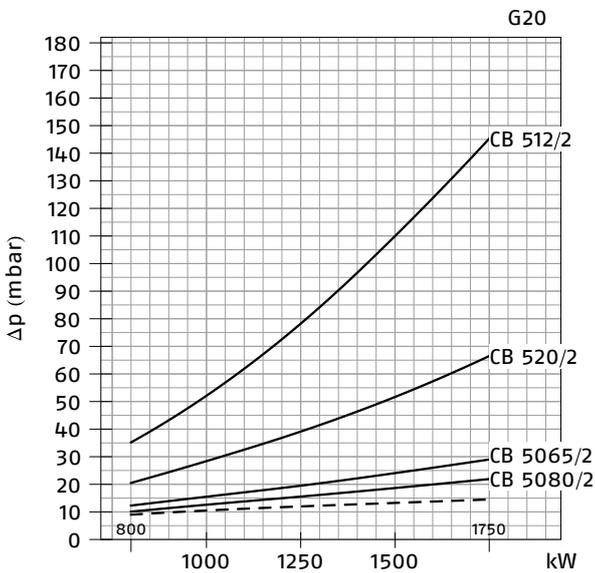


- Combustion head + gas butterfly valve + gas train
- - - Combustion head + gas butterfly valve

**GAS 7/2 (NATURAL GAS)**

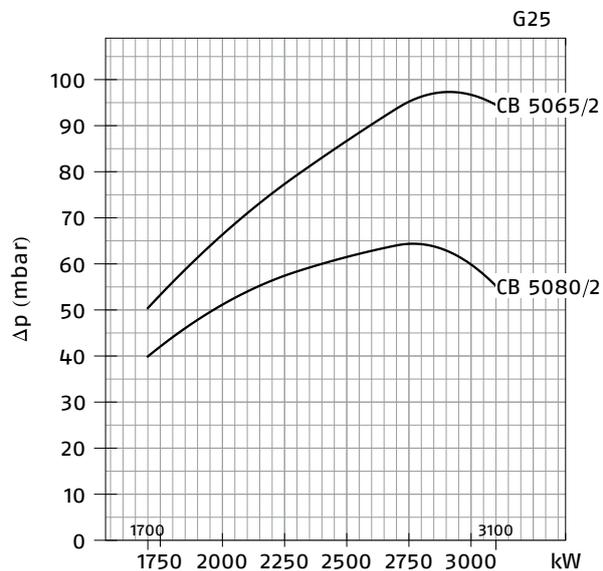
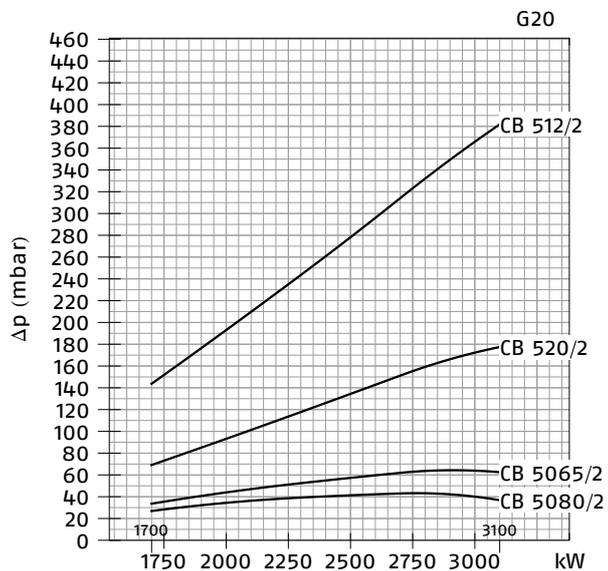


**GAS 7/2 (NATURAL GAS)**



Combustion head + gas butterfly valve + gas train  
 Combustion head + gas butterfly valve

**GAS 9/2 (NATURAL GAS)**



— Combustion head + gas butterfly valve + gas train  
 - - - Combustion head + gas butterfly valve

## Ventilation

The ventilation circuit of GAS/2 burners is inserted in a extremely compact structure and it is provided with a forward blades centrifugal fan, which guarantees high pressure levels at the required air deliveries and permits installation flexibility.

A servomotor adjust the air damper in relation to the fuel burnt.

When the burner is not operating the servomotor closes completely the air damper to reduce heat dispersion from the boiler.

A minimum air pressure switch stops the burner when there is an insufficient quantity of air at the combustion head.



Example of servomotor for air damper adjusting on GAS/2 series of burners

## Combustion Head

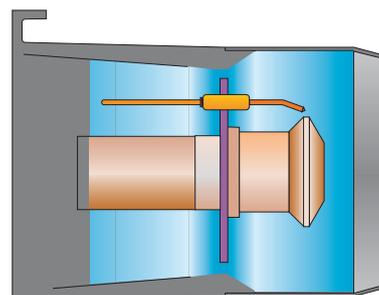
Different combustion head length can be selected for the various models of GAS/2 series of burners.

The choice depends on the thickness of the front panel and type of boiler. Correct head penetration into the combustion chamber depends on the type of heat generator.

These burners are equipped with adjustable combustion head.

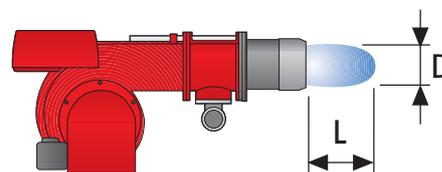
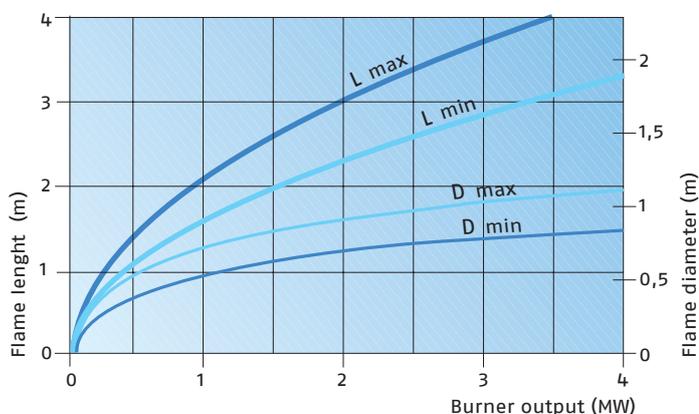
This enables optimum combustion performance throughout the working field, ensuring peak combustion efficiency thus saving on fuel consumption.

The following diagram shows the flame dimensions in relation to the burner output. The lengths and diameter shown in the diagram below should be employed for a preliminary check: if combustion chamber dimensions are different from the values in the diagram, further tests need to be done.



Example of a GAS/2 burner combustion head

### DIMENSIONS OF THE FLAME



Example:  
 Burner thermal output = 2000 kW;  
 L flame (m) = 2.7 m (medium value);  
 D flame (m) = 0.8 m (medium value)

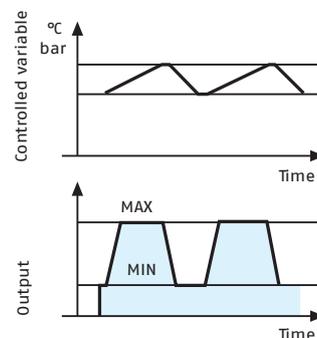
# Operation

## BURNER OPERATION MODE

On "two stage" operation, the burner gradually adapts the output to the requested level, by varying between two pre-set levels.

All GAS/2 series burners are fitted with a new microprocessor control panel for the supervision during intermittent operation. For helping the commissioning and maintenance work, there are two main elements:

## TWO STAGE OPERATION



The lock-out reset button is the central **operating element** for resetting the burner control and for activating / deactivating the diagnostic functions.



The multi-color LED is the central **indication element** for visual diagnosis and interface diagnosis.

Both elements are located under the transparent cover of lock-out reset button, as showed below.

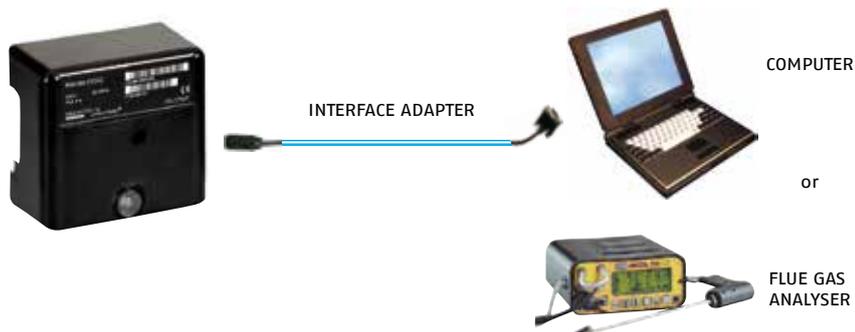


There are two diagnostic choices, for indication of operation and diagnosis of fault cause:

### - visual diagnosis:



### - interface diagnosis:



By the interface adapter and a PC with dedicated software or by a predisposed flue gas analyzer (see paragraph accessories).

**Indication of operation:**

In normal operation, the various status are indicated in the form of colour codes according to the table below. The interface diagnosis (with adapter) can be activated by pressing the lock-out button for > 3 seconds.

Color code table	
Operation status	Color code table
Stand-by	○ ○ ○ ○ ○ ○ ○ ○
Pre-purging	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Ignition phase	☀ ○ ☀ ○ ☀ ○ ☀ ○
Flame OK	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Poor flame	☀ ○ ☀ ○ ☀ ○ ☀ ○
Undervoltage, built-in fuse	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Fault, alarm	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Extraneous light	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀

○ LED off

**Diagnosis of fault causes:**

After lock-out has occurred, the red signal lamp is steady on. In this status, the visual fault diagnosis according to the error code table can be activated by pressing the lock-out reset button for > 3 seconds. The interface diagnosis (with adapter) can be activated by pressing again the lock-out button for > 3 seconds.

The blinkers of red LED are a signal with this sequence:

(e.g. signal with n° 3 blinks – faulty air pressure monitor)

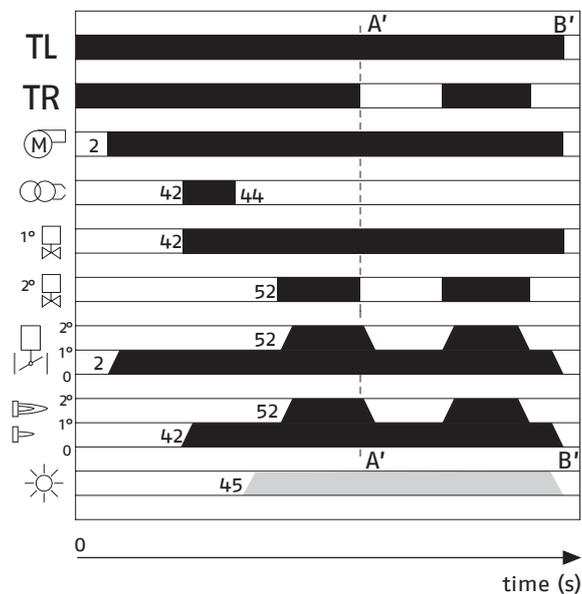


**Error code table**

Blink code	Possible cause of fault
2 blinks ☀ ☀	No flame at the end of safety time: - faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner, no fuel - faulty ignition equipment
3 blinks ☀ ☀ ☀	Faulty air pressure monitor
4 blinks ☀ ☀ ☀ ☀	Extraneous light or simulation of flame on burner start up
7 blinks ☀ ☀ ☀ ☀ ☀ ☀ ☀	Loss of flame during operation : - faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner
10 blinks ☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀	Wiring error or internal fault

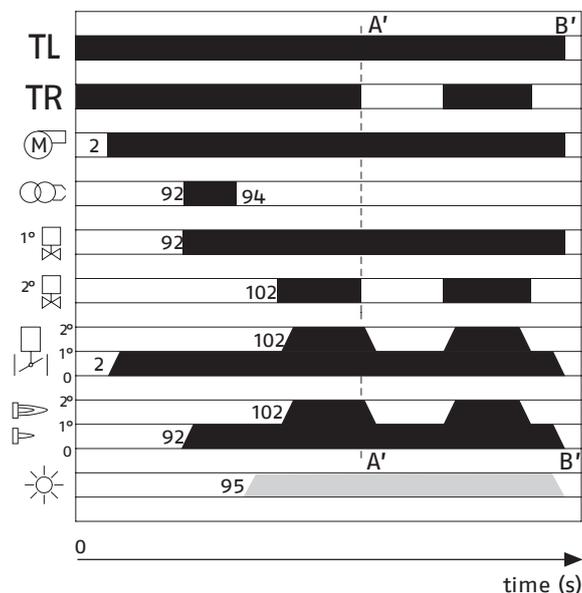
**START UP CYCLE**

**GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2**



- 0 s The burner begins the firing cycle.
- 2 s The motor starts: pre-purge phase.
- 42 s Ignition electrode sparks; safety valve VS and the 1st stage VR1 of the adjustment valve VR open.
- 45 s Lock out signal is activated if flame is not revealed by the flame detector.
- 52 s Output can be increased by second stage valve VR2 and air damper opening; the start up cycle is concluded.

**GAS 9/2**

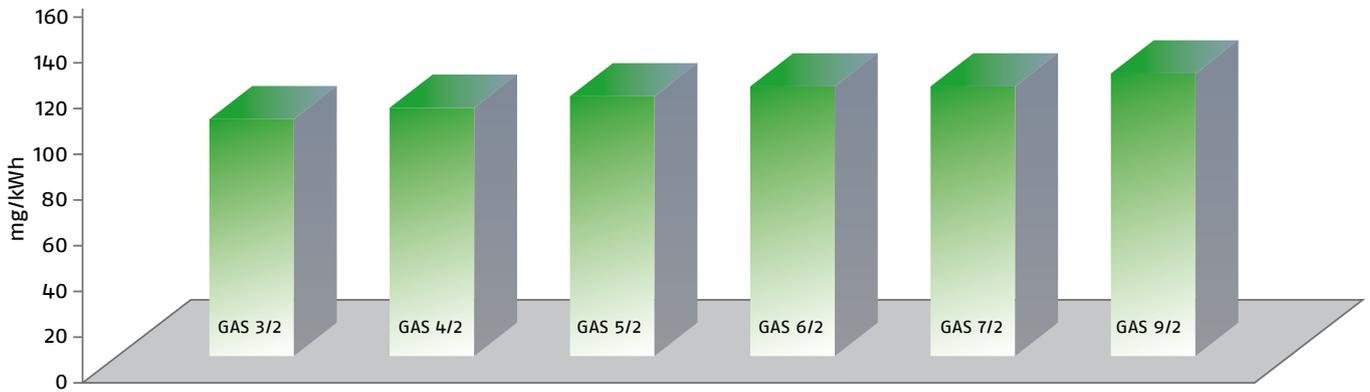


- 0 s The burner begins the firing cycle.
- 2 s The motor starts: pre-purge phase.
- 92 s Ignition electrode sparks; safety valve VS and the 1st stage VR1 of the adjustment valve VR open.
- 95 s Lock out signal is activated if flame is not revealed by the flame detector.
- 102 s Output can be increased by second stage valve VR2 and air damper opening; the start up cycle is concluded.

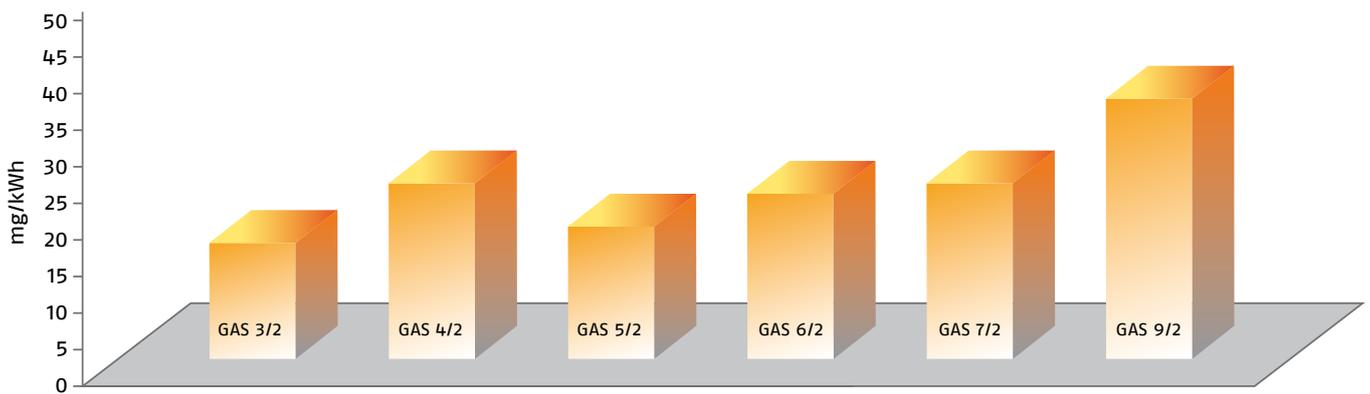
# Emissions

The emission data has been measured in the various models at maximum output, according to EN 676 standard.

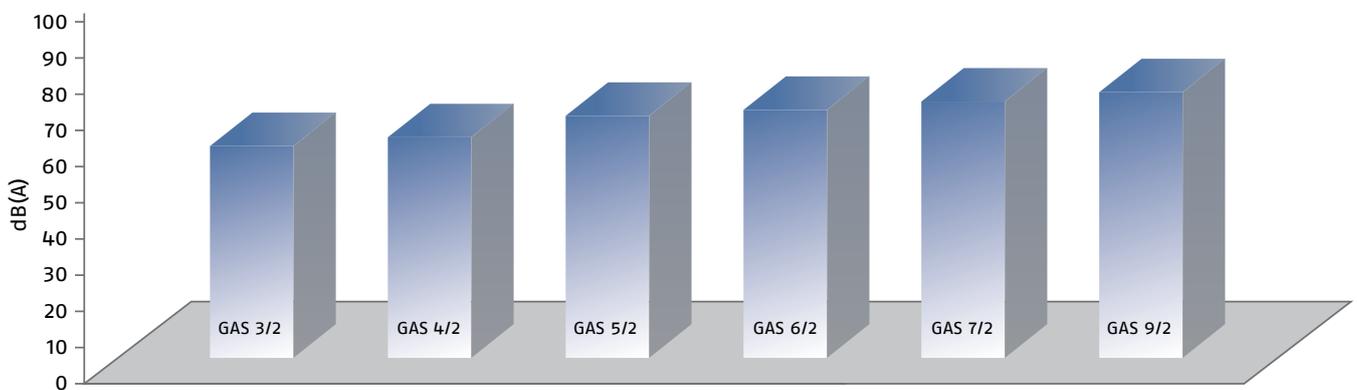
## NO2 EMISSIONS



## CO EMISSIONS (gas G20)



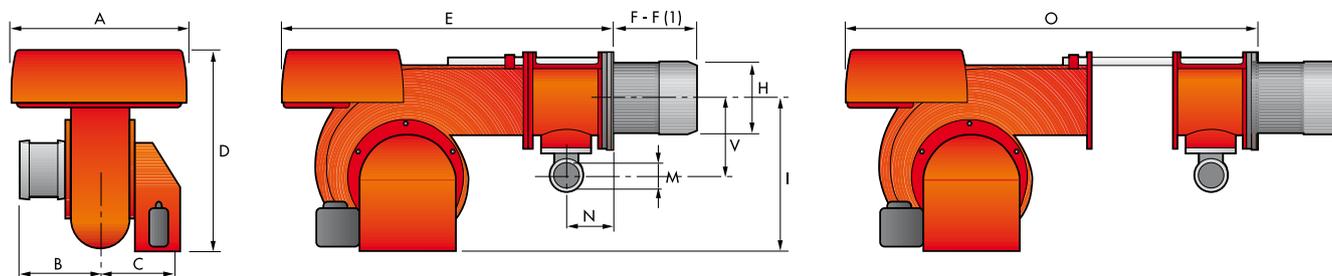
## NOISE EMISSIONS



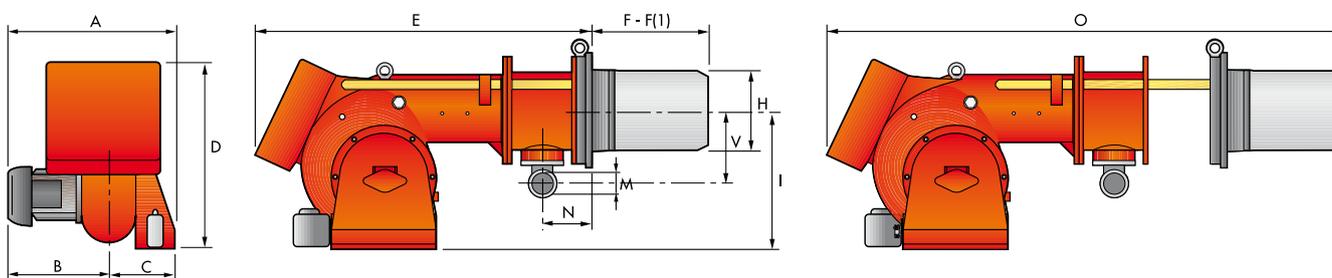
# Overall Dimensions (mm)

## BURNERS

**GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2**

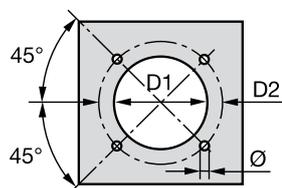


**GAS 9/2**



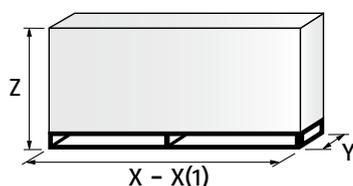
MODEL	A	B	C	D	E	F - F(1)	H	I	M	N	O	V
GAS 3/2	410	205	205	397	610	185 - 320	140	292	1" 1/2	97	775	165
GAS 4/2	410	205	205	397	610	187 - 320	150	292	1" 1/2	97	775	165
GAS 5/2	431	226	205	437	645	207 - 365	155	332	1" 1/2	97	810	165
GAS 6/2	463	258	205	485	770	227 - 360	175	370	2"	131	966	195
GAS 7/2	606	358	248	590	920	240 - 400	220	445	2"	140	1142	245
GAS 9/2	780	445	335	680	1200	444 - 574	295	495	2"	168	1627	210

## BURNER - BOILER MOUNTING FLANGE



MODEL	D1	D2	Ø
GAS 3/2	155	226	M10
GAS 4/2	165	226	M10
GAS 5/2	165	226	M10
GAS 6/2	185	276	M12
GAS 7/2	230	325	M12
GAS 9/2	300	368	M18

## PACKAGING



MODEL	X - X(1)	Y	Z	kg
GAS 3/2	850	545	473	34
GAS 4/2	850	545	473	40
GAS 5/2	895	543	520	43
GAS 6/2	1045	543	555	60
GAS 7/2	1400	850	650	98
GAS 9/2	1870	920	910	240

## Installation Description

Installation, start up and maintenance must be carried out by qualified and skilled personnel. All operations must be performed in accordance with the technical handbook supplied with the burner.

### BURNER SETTING

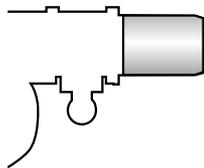
- All the burners have slide bars, for easier installation and maintenance.
- After drilling the boilerplate, using the supplied gasket as a template, dismantle the blast tube from the burner and fix it to the boiler.
- Adjust the combustion head.
- Fit the gas train, choosing this on the basis of the maximum output of the boiler and considering the enclosed diagrams.
- Refit the burner casing to the slide bars.
- Close the burner, sliding it up to the flange.

### ELECTRICAL CONNECTIONS AND START UP

- Make the electrical connections to the boiler following the wiring diagrams included in the instruction handbook.
- Turn the motor to check rotation direction (if it is a three-phase motor).
- Perform a first ignition calibration on the gas train.
- On start up, check:
  - Gas pressure at the combustion head (to max. and min. output)
  - Combustion quality, in terms of unburned substances and excess air.

## Burner Accessories

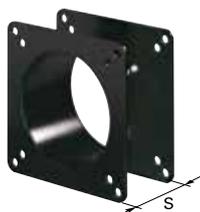
### Extended head kit



“Standard head” burners can be transformed into “extended head” versions, by using the special kit. The KITS available for the various burners, giving the original and the extended lengths, are listed below.

MODEL	Standard head length (mm)	Extended head length (mm)	Kit code
GAS 3/2	185	320	3000605
GAS 4/2	187	320	3000606
GAS 5/2	207	365	3000607
GAS 6/2	227	360	3000608
GAS 7/2	240	400	3000678

### Spacer kit



If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following table.

MODEL	Spacer thickness S (mm)	Kit code
GAS 3/2 - 4/2 - 5/2 - 6/2	142	3000755
GAS 7/2	102	3000722
GAS 9/2	130	3000723

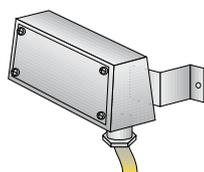
### Continuous ventilation kit



If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table.

MODEL	Kit code
GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2 - 9/2	3010030

### Post-ventilation kit



To prolong ventilation for approximately 5 seconds after opening of thermostats chain, a special kit is available.

MODEL	Kit code
GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2 - 9/2	3010004

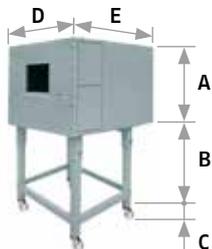
### PC interface kit



To connect the flame control panel to a personal computer for the transmission of operation, fault signals and detailed service information, an interface adapter with PC software are available.

MODEL	Kit code
GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2 - 9/2	3002719

**Sound proofing box**

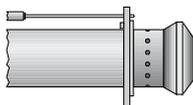


If noise emission needs reducing even further, sound-proofing boxes are available. In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code 20065135. The useful dimensions are 40 mm less than the total dimensions indicated in the table (A, D, E). Not suitable for outdoor use.

MODEL	Box type	A (mm)	B (mm) min-max	C (mm)	D (mm)	E (mm)	[dB(A)] (*)	Kit code
GAS 3/2 - 4/2 GAS 5/2 - 6/2	C1/3	650	372-980	110	690	770	10	3010403
GAS 7/2	C4/5	850	160-980	110	980	930	10	3010404
GAS 9/2	C7	1255	160-980	110	1140	1345	10	3010376

(\*) Average noise reduction according to EN 15036-1 standard

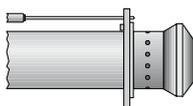
**LPG kit**



For burning LPG gas, a special kit is available to be fitted to the combustion head on the burner, as given in the following table.

MODEL	Kit code for Standard head	Kit code for Extended head
GAS 3/2	3000657	3000807
GAS 4/2	3000658	3000808
GAS 5/2	3000659	3000809
GAS 6/2	3000753	3000810
GAS 7/2	3000806	3000811
GAS 9/2	3000876	3010028

**Town gas kit**



For burning Town gas, a special kit is available to be fitted to the combustion head on the burner, as given in the following table.

MODEL	Kit code for Standard head (*)
GAS 3/2	3000742
GAS 4/2	3000754
GAS 5/2	3000759
GAS 6/2	3000768
GAS 7/2	3000769
GAS 9/2	3010298

(\*) Without CE certification

**Protection kit (electromagnetic interferences)**

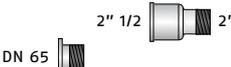
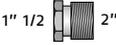
When the burner is installed in a room particularly subject to electromagnetic interference (signals emitted over 10 V/m) due for example to INVERTER presence or in systems where the lengths of the thermostat connections is over 20 meters, this specific protection kit is available as an interface between the thermostatic controls and the burner.

MODEL	Kit code
GAS 3/2 - 4/2 - 5/2 - 6/2 - 7/2 - 9/2	3010386

## Gas Train Accessories

### Adapters

In certain cases, an adapter must be fitted between the gas train and the burner, when the diameter of the gas train is different from the set diameter of the burner. Below are given the available adapters; please see on the Gas Train list the correct adapter codes to select.

ADAPTER	Length (mm)	Adapter code
2"  1" 1/2	70	3000822
3/4"  1" 1/2	31	3000824
DN 65  2" 1/2  1" 1/2	300	3000825
DN 80  2" 1/2  2"	300	3000826
1" 1/2  2"	35	3000843
1/2"  1" 1/2	31	20044756

### Seal control kit



To test the valve seals on the gas train, a special "seal control kit" is available.

MODEL	Gas train	Kit code for 50 Hz operation	Kit code for 60 Hz operation
GAS 3/2	MB 407/2 - 410/2 - 412/2	3010123	20050030
	MB 415/2 - CB 512/2	3010125	20050033
GAS 4/2	MB 410/2 - 412/2	3010123	20050030
	MB 415/2 - 420/2 - CB 512/2 - 520/2	3010125	20050033
GAS 5/2	MB 410/2 - 412/2	3010123	20050030
	MB 415/2 - 420/2 - CB 512/2 - 520/2	3010125	20050033
GAS 6/2	MB 410/2 - 412/2	3010123	20050030
	MB 415/2 - 420/2 - CB 512/2 - 520/2 - 5065/2	3010125	20050033
GAS 7/2	MB 415/2 - 420/2 - CB 512/2 - 520/2 - 5065/2 - 5080/2	3010123	20050030
	MB 420/2	3010125	20050033
GAS 9/2	CB 520/2 - 5065/2 - 5080/2	3809900	20050034

### Stabiliser spring



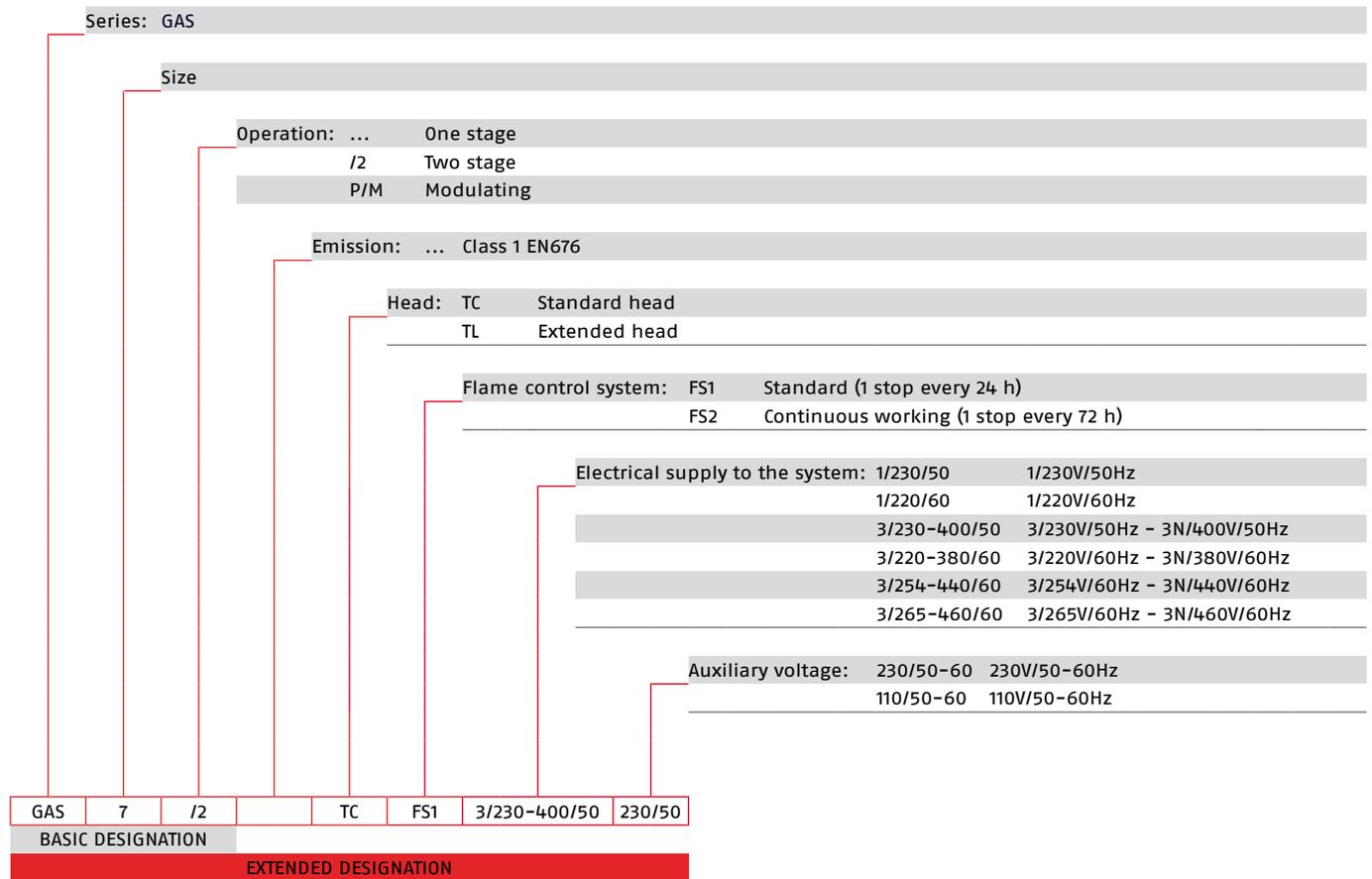
Accessory springs are available to vary the pressure range of the gas train stabilisers.

GAS TRAIN	Spring colour	Spring pressure range mbar	Spring code
CB 512/2	Red	25 - 55	3010131
	Black	60 - 110	3010157
	Pink	90 - 150	3090486
CB 520/2	Red	25 - 55	3010132
	Black	60 - 110	3010158
	Pink	100 - 150	3090487
CB 5065/2 - 5080/2	Red	25 - 55	3010133
	Black	60 - 110	3010135
	Pink	100 - 150	3090456
	Grey	140 - 200	3090992

# Specification

## DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the GAS series. Below is a clear and detailed specification description of the product.



**AVAILABLE BURNER MODELS**

BURNER MODELS				ELECTRICAL SUPPLY		HEAT OUTPUT (kW)		TOTAL ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
							NATURAL GAS (Nm <sup>3</sup> /h)			
GAS 3/2	TC	FS1	1/220/60	220/60	80/130-340	8/13-34	0.4	-		
GAS 3/2	TC	FS1	1/230/50	230/50	80/130-350	8/13-35	0.4	CE 0085AQ0707		
GAS 4/2	TC	FS1	1/230/50	230/50	120/180-470	12/18-47	0.54	CE 0085AQ0707		
GAS 4/2	TC	FS1	3/220-380/60	220/60	115/180-470	11,5/18-47	0.6	-		
GAS 5/2	TC	FS1	3/220-380/60	220/60	155/320-660	15,5/32-66	1.1	-		
GAS 5/2	TC	FS1	3/230-400/50	230/50	155/320-660	15,5/32-66	0.85	CE 0085AQ0707		
GAS 6/2	TC	FS1	3/220-380/60	220/60	300/520-1050	30/52-105	1.9	-		
GAS 6/2	TC	FS1	3/230-400/50	230/50	300/520-1050	30/52-105	1.7	CE 0085AQ0707		
GAS 7/2	TC	FS1	3/220-380/60	220/60	400/800-1760	40/80-176	3.8	-		
GAS 7/2	TC	FS1	3/230-400/50	230/50	400/800-1760	40/80-176	3.4	CE 0085AQ0707		
GAS 9/2	TC	FS1	3/230-400/50	-	1000/1750-3200	100/175-320	9	-		
GAS 9/2	TL	FS1	3/230-400/50	-	1000/1750-3200	100/175-320	9	-		
GAS 9/2	TC	FS1	3/254-440/60	-	1000/1750-3200	100/175-320	9	-		
GAS 9/2	TL	FS1	3/254-440/60	-	1000/1750-3200	100/175-320	9	-		

Natural gas G20 net calorific value: 10 kWh/Nm<sup>3</sup> - Density gas G20: 0,71 kg/Nm<sup>3</sup>

The burners of GAS series are in according to 2006/42/EC - 2009/142/EC - 2014/30/UE - 2014/35/UE Directive and EN 676 Norm.

## PRODUCT SPECIFICATION

### Burner

Monoblock forced draught gas burner, two stage operation, made up of:

- Air suction circuit
- Fan with forward curved blades
- Air damper for air setting
- Combustion head, that can be set on the basis of required output, fitted with:
  - stainless steel end cone, resistant to corrosion and high temperatures
  - ignition electrodes
  - flame stability disk
- Minimum air pressure switch
- Single phase or three phases electrical motor
- Microprocessor-based burner safety control box, with diagnostic function
- Flame inspection window
- Slide bars for easier installation and maintenance
- Protection filter against radio interference
- IP X0D (IP 40) protection level.

### Gas train:

Fuel supply line, in the MULTIBLOC configuration (from a diameter of 3/4" until a diameter 2") or COMPOSED configuration (from a diameter of DN 40 until a diameter of DN 80), fitted with:

- Filter
- Stabiliser
- Minimum gas pressure switch
- Safety valve
- Two stage working valve with ignition gas output regulator

### Standard equipment:

- 1 gas train flange
- 1 flange gasket
- 1 insulating screen
- 8 screws for fixing the burner flange to the boiler
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue

### Conforming to:

- 2014/30 UE Directive (electromagnetic compatibility)
- 2014/35 UE Directive (low voltage)
- 2009/142 EC Directive (gas)
- 2006/42 EC Directive (machine)
- EN 676 (gas burners)

### Available accessories to be ordered separately:

- Extended head kit
- Spacer kit
- Continuous ventilation kit
- Post-ventilation kit
- Sound-proofing box
- LPG kit
- Town gas kit
- PC interface kit
- Gas train adapter
- Stabiliser spring
- Seal control kit



# Riello Burners a world of experience in every burner we sell.

05/2016

TS004.BUK04



[ 1 ]

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.



[ 2 ]

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

[ 1 ] BURNERS PRODUCTION PLANT  
S. PIETRO, LEGNAGO (VERONA) - ITALIA

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