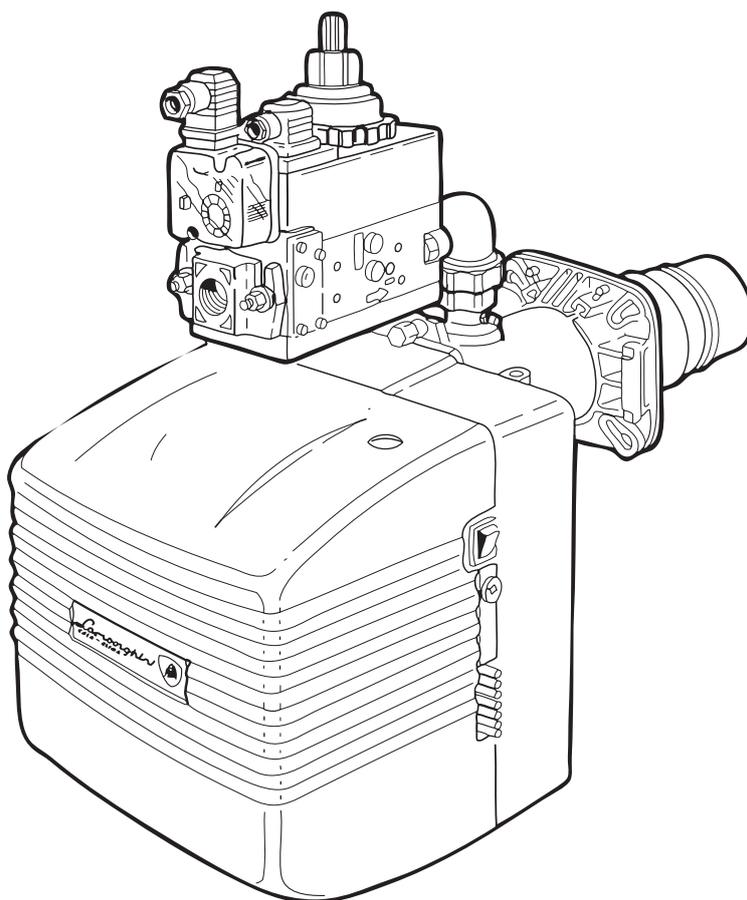




*Lamborghini*  
**CALORECLIMA**

**UNI EN ISO 9001 CERTIFIED COMPANY**



SINGLE-STAGE GAS BURNERS FOR STANDARD AND PRESSURIZED BOILERS

**EM 16 / EM 26 UK (VC)**

INSTALLATION AND  
MAINTENANCE  
MANUAL



Read all warnings and instructions contained in this manual carefully as they give important safety instructions regarding installation, use and maintenance. Keep this manual for future reference. Installation must be carried out by qualified personnel who will be responsible for observance of safety standard in force.

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## Congratulations...

... on your excellent choice.

Thank you for choosing our products.

LAMBORGHINI CALORECLIMA is daily committed to seeking innovative technical solutions to satisfy every need.

Constant presence of our products on the Italian and international markets is assured by a widespread network of Agents and Dealers assisted by "LAMBORGHINI SERVICE" (Technical Service) who assures qualified service and maintenance of the boiler.

## CONFORMITY

The EM burners are in conformity with:

- Electromagnetic Compatibility Directive 2004/108/CE
- Low Voltage Directive 2006/95/CE

For the production serial number, refer to the technical data plate of the boiler.



## GENERAL INSTRUCTIONS

- This booklet constitutes an integral and essential part of the product and should be supplied to the installer. Read the instructions contained in this booklet carefully as they give important directions regarding the safety of installation, use and maintenance. Preserve this booklet with care for any further consultation. The installation of the burner must be carried out in compliance with current regulations, according to the instructions of the manufacturer and by qualified personnel. An incorrect installation can cause injury or damage to persons, animals and objects, for which the manufacturer cannot be held responsible.
- This appliance should only be used for the purpose it has been designed for. Any other use is to be considered improper and therefore dangerous. The manufacturer cannot be considered responsible for any damages caused by improper, erroneous or unreasonable use.
- Before carrying out any cleaning or maintenance operation, disconnect the appliance from the power supply, by using the main system switch or through the appropriate interception devices.
- In case of failure and/or malfunctioning, switch off the equipment and refrain from trying any repair or direct intervention. Call in qualified personnel only. Any repair must be carried out by a servicing centre authorised by the manufacturing firm, one using original replacements exclusively. Non-observance of the above could compromise the safety of the appliance. In order to guarantee the efficiency of the appliance and its proper operation it is indispensable to keep to the manufacturer's directions, by ensuring the periodical servicing of the appliance is carried out by professionally qualified personnel.
- As soon as one decides not to use the appliance further, one should take care to render innocuous those parts liable to be potential sources of danger.
- The transformation from a gas (natural gas or liquid gas) to a gas of another group must be made exclusively by qualified personnel.
- Before starting up the burner ask qualified personnel to check:
  - a) that the data on the information plate corresponds to that required by the gas, and electrical supply networks;
  - b) that the calibration of the burner is compatible with the boiler output;
  - c) that the comburent air flow and the fumes evacuation take place properly in accordance with the regulations in force.
  - d) that correct aeration and maintenance are possible.
- After each reopening of the gas cock wait a few minutes before restarting the burner.
- Before carrying out whatever intervention which foresees the dismantling of the burner or the opening of any of the accesses for inspection, disconnect the electrical current and close off the gas cocks.
- Do not deposit containers of inflammable substances in the location where the burner is situated.
- On noticing the smell of gas do not touch any electrical switch. Open all doors and windows. Shut off the gas cocks. Call qualified personnel.
- The room where the burner is located must have the openings required by local regulations in force. Should you have any doubts as to the circulation of the air in the room, then you should first measure the CO<sub>2</sub> value with the burner working at its maximum delivery and with the room ventilated solely by means of the openings that feed air to the burner; a second CO<sub>2</sub> measurement should then be taken with the door open. The CO<sub>2</sub> value should not vary very much from the first to the second reading. Should there be more than one burner and one fan in the same room, then this test must be carried out with all the appliances working at the same time.
- Never cover up the burner room's air vents, the burner's fan's air-intake openings or any existing air ducts or air gratings, thus avoiding:
  - the formation of poisonous/explosive mixtures of gases in the burner room;
  - combustion with insufficient air, which would be dangerous, costly and cause pollution.
- The burner must at all times be protected from rain, snow and freezing.

- The room where the burner is housed should be kept clean at all times, and there should be no volatile substances in the vicinity, substances which could be sucked into the fan and could block up the internal ducts of the burner or combustion head. Dust can be extremely harmful, particularly when it gets onto the fan blades as this can reduce ventilation and lead to pollution during combustion. Dust can also build up on the rear of the flame stability disk inside the combustion head, leading to a poor air-fuel mixture.
- The burner must be fed with the type of fuel for which it was designed, as indicated on the data plate and in the technical characteristics given in this manual. The fuel feed line must be sealed and must be of the rigid variety, with an interposed metal expansion coupling with either a flange joint or a threaded joint. Furthermore, the feed line must be equipped with all the adjustment and safety devices required by the local regulations in force. Particularly ensure that no foreign bodies get into the feed line during installation.
- Ensure that the electrical power supply used conforms to the technical characteristics indicated on the data plate and in this manual. The burner must be connected to an effective system earthed in accordance with the current regulations. Should there be any doubts, the verification should be made by qualified persons.
- Never exchange neutral and phase wires.
- The burner can be connected up to the mains supply using a plug connection only if the latter is of the kind that does not allow neutral and phase wires to be reversed. Install a main switch for the heating system on the control panel, as required by current regulations.
- The entire electrical system, and in particular cable cross-sections, should conform to the maximum absorbed capacity indicated on the appliance data plate and in this manual.
- Should the burner's mains cable be found faulty, it must only be replaced by qualified persons.
- Do not touch the burner with parts of the body which are wet or when in bare feet.
- Do not pull (stretch) the mains cables and keep them well away from heat sources.
- The length of the cables used must enable the burner to be opened, as well as the boiler door.
- The electrical connections must be made exclusively by qualified experts and the relative regulations in force must be scrupulously applied.
- After removing the packaging materials, check the content integrity and make sure that no damages have occurred during transportation. In case of doubt, do not use the burner and contact the supplier. The packaging material (wooden cages, cartons, plastic bags, foam, clips, etc...) are potential sources of pollution and danger, if left lying around; they should be collected up and disposed of in the correct way (in a suitable place).

## DESCRIPTION

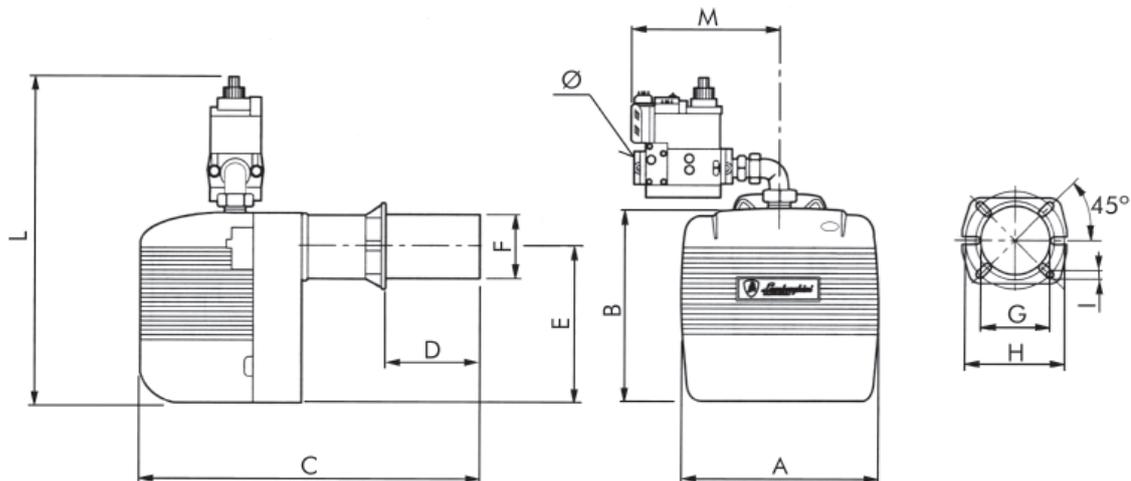
These are forced-draught burners, with gas/air mix at the combustion head, in a single ignition stage. The burners are completely automatic and equipped with controls assuring maximum safety. They can be combined with any type of chamber whether in negative or positive pressure, within the foreseen working range.

The burners are supplied without a gas train and must therefore be completed with the train most suitable for the system in which the burner is to be fitted. The gas train is therefore chosen by consulting the diagram (pages 29-40); this illustrates pressure loss as a function of mains gas pressure, required gas delivery at the appliance and the back-pressure in the combustion chamber.

All the components can be easily inspected without having to disconnect from the main gas supply. The burners are equipped with a cover which means they are particularly compact, soundproof and safeguarded.



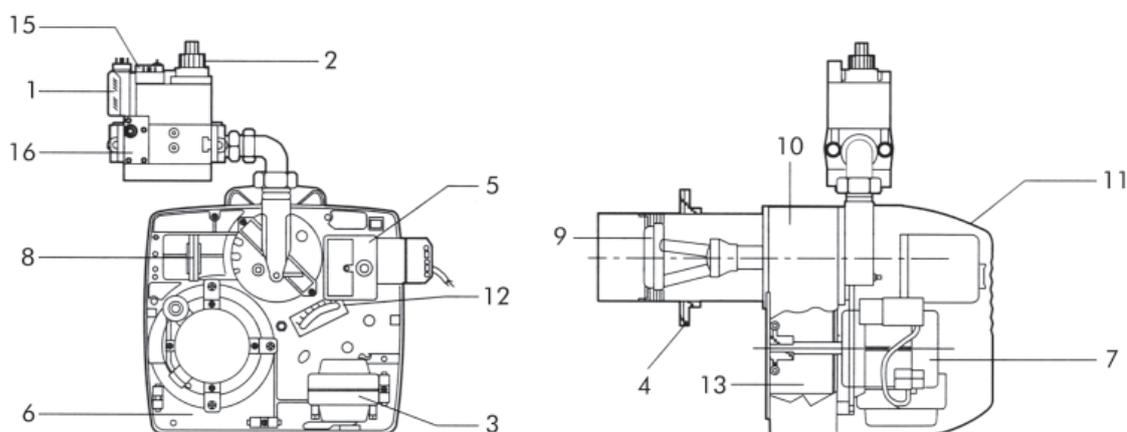
## DIMENSIONS mm



Model	A	B	C	D		E	Ø F	Ø G	Ø H		I	L*	M*	Ø*
				min.	max.				min.	max.				
EM 16-E	310	282	480	60	150	215	108	115	150	200	M8	465	210	3/4"
EM 26-E	360	350	750	100	265	275	140	155	170	225	M10	550	240	1"

\* The dimensions refer to a burner with a 20 mbar gas train fitted.

## MAIN COMPONENTS



### Legend

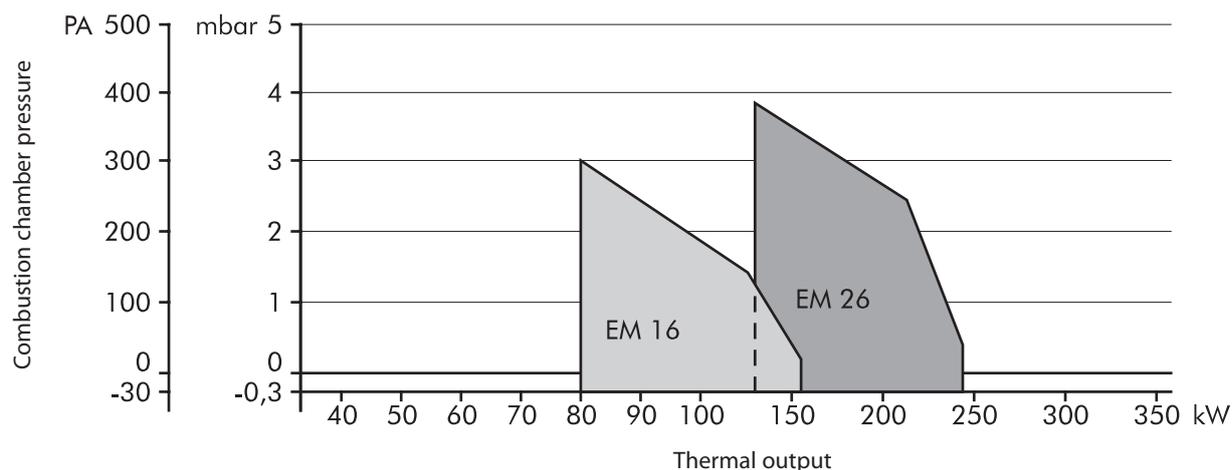
- |                            |                       |                       |
|----------------------------|-----------------------|-----------------------|
| 1 Gas pressure switch      | 7 Motor               | 13 Fan                |
| 2 Operation valve          | 8 Air pressure switch | 14 Hinge flange       |
| 3 Ignition transformer     | 9 Combustion head     | 15 Safety valve       |
| 4 Boiler connecting flange | 10 Burner body        | 16 Stabilizing filter |
| 5 Control box              | 11 Cover              |                       |
| 6 Components plate         | 12 Air gate           |                       |

## TECHNICAL FEATURES

Modello		EM 16 UK (VC)	EM 26 UK (VC)	
Methane delivery	min	8	12,9	m <sup>3</sup> /h
	max	16,1	24,5	m <sup>3</sup> /h
B/P delivery	min	2,8	4,6	m <sup>3</sup> /h
	max	5,7	8,7	m <sup>3</sup> /h
Thermal output	min	80	129	kW
	max	160	258,5	kW
Motor		110	220	W
Transformer		2x7,5/48		kV/mA
Max. absorbed power		258	320	W
Methane pressure		20		mbar
B/P pressure		30		mbar
Weight		21	32	kg
Power supply		230V-50/60Hz single-phase		
Category		II 2H 3P		
Electric protection rating		20		IP
Noise level (*)		71	74	dB(A)

(\*) Sound pressure measured in the manufacturer's combustion laboratory, with burner operating on a test boiler and at maximum output.

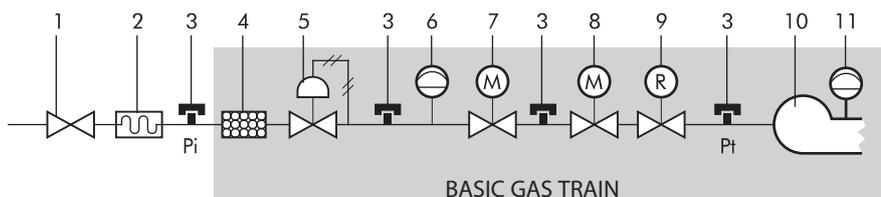
## PRESSURE CURVES



The pressure curves indicate the output in kW according to the backpressure in the combustion chamber, in mbars.

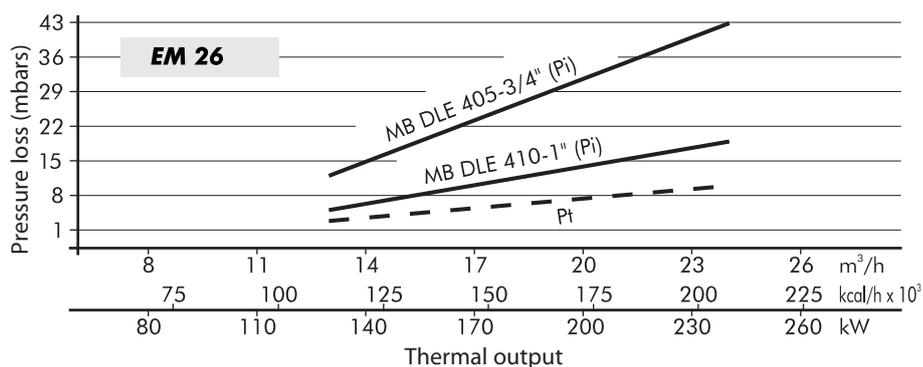
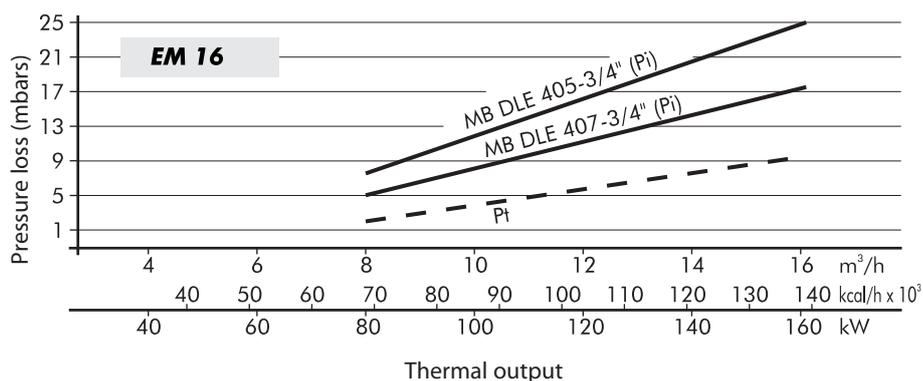
## PRESSURE CURVES/GAS DELIVERY

These curves show the gas pressure, in millibars, (at points Pi and Pt along the gas train) necessary to produce a given delivery in m<sup>3</sup>/h. The pressures have been measured with the burner working and with a pressure of 0 mbar in the combustion chamber. If the chamber is pressurized, the gas pressure necessary will be that given in the diagram plus that in the combustion chamber.



### Legend

- |   |   |
|---|---|
| 1 Interception cock - airtight at 1 bar and pressure loss ≤ 0,5 mbar. | 7 Class A solenoid safety valve. Closure time Tc ≤ 1".  |
| 2 Vibration-damping joint   | 8 Class A solenoid safety valve. Closure time Tc ≤ 1". Ignition power between 10% and 40% of rated thermal power. |
| 3 Gas pressure point for pressure reading                             | 9 Gas delivery regulator, normally incorporated in either solenoid valve 7 or 8.                                  |
| 4 Gas filter  | 10 Combustion head.   |
| 5 Gas pressure regulator  | 11 Minimum air pressure control device (pressure switch)  |
| 6 Minimum gas pressure control device (pressure switch)               |   |

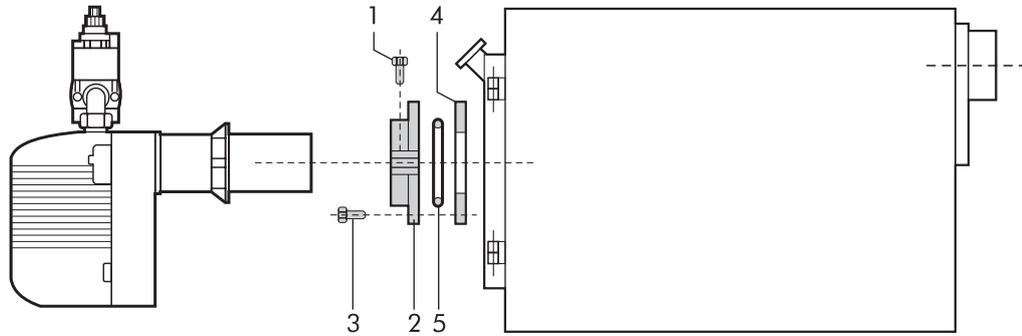


### Legend

- Pi Inlet pressure  
(combustion head + gas train)  
Pt Pressure at combustion head

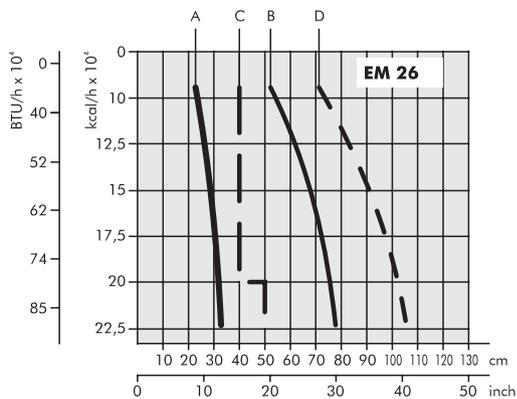
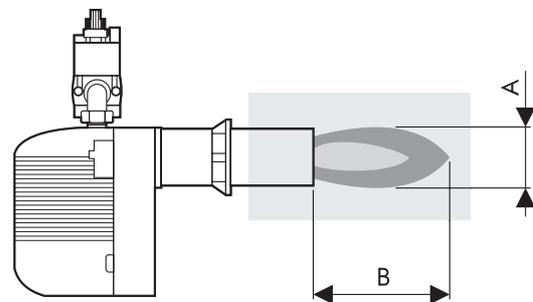
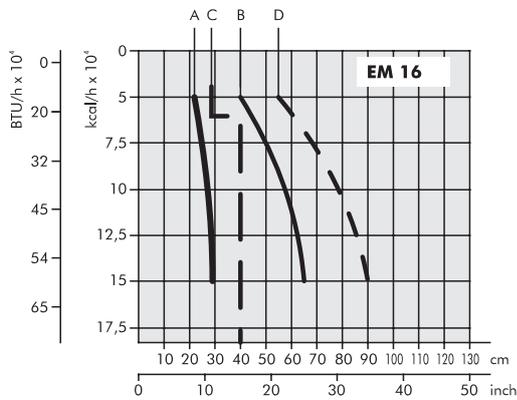


## ASSEMBLY ONTO THE BOILER



Fix flange 2 to the boiler using 4 screws 3 interposing the insulation gasket 4 and the possible insulating cord 5. Insert the burner in the flange so that the draught tube penetrates into the combustion chamber by the length suggested by the boiler manufacturer. Tighten screw 1 to lock the burner in position.

## FLAME DIMENSIONS



The dimensions are indicative only being influenced by:

- excessive quantity of air;
- combustion chamber shape;
- development of gas path in the boiler (direct/reverse);
- combustion chamber pressure.

- A Flame diameter
- B Flame length
- C Test tube diameter
- D Test tube length

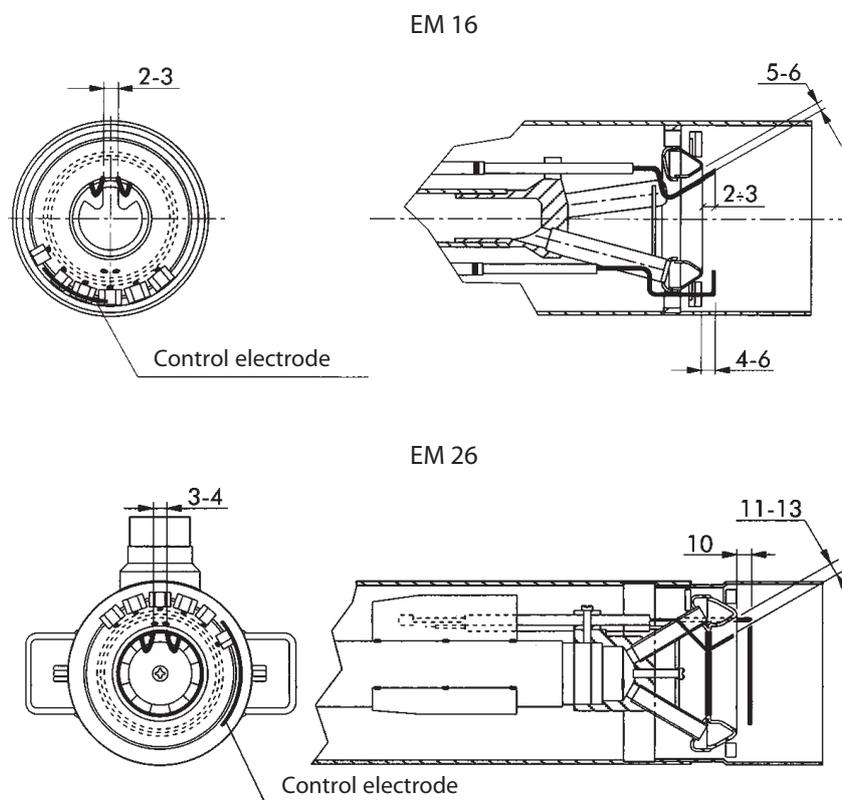


## ELECTRODES ADJUSTMENT

Two ignition electrodes and a control electrode have been fitted. They should be positioned according to the indications supplied in the figure below.

**IMPORTANT:** the ignition electrodes and the control electrode must never touch the diffuser, the draught tube or other metallic parts. If this were to happen they would no longer work, thus impairing operation of the burner itself.

The position of the electrodes should always be checked after any work on the combustion head.



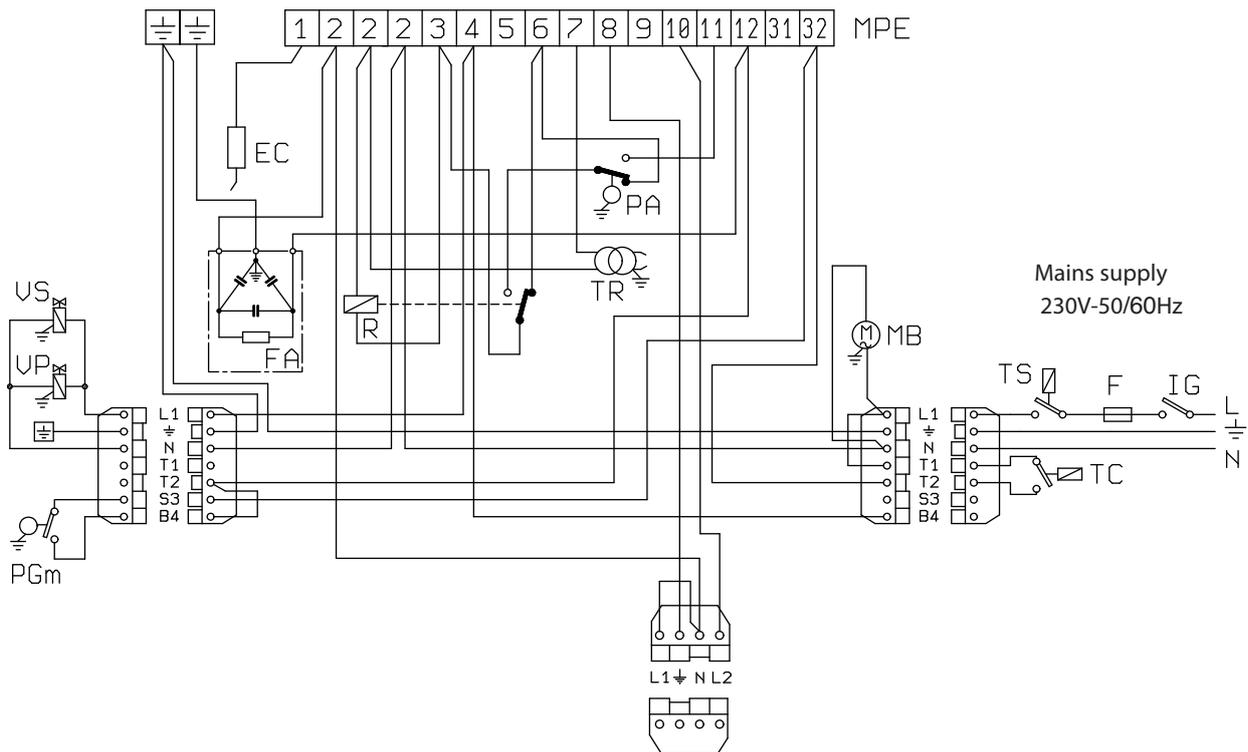


## WIRING DIAGRAMS

### WIRING DIAGRAM - EM 16 UK (VC) BURNER

The connections to be carried out by the installer are:

- Main supply line
- Thermostatic line
- Lock-out lamp at terminal S3 (if present)
- Hour counter at terminal B4 (if present)



#### Legend

EC	Control electrode	MPE	Control box terminal board	TR	Ignition transformer
F	Fuse	PA	Air pressure switch	TS	Safety thermostat
FA	Anti-interference filter	PGm	Minimum gas pressure switch	VP	Main safety valve
IG	Main switch	R	Relay	VS	2nd safety valve
MB	Burner motor	TC	Boiler thermostat		

NOTE: Always make sure that no more than two wires are connected to each terminal.

#### Warning:

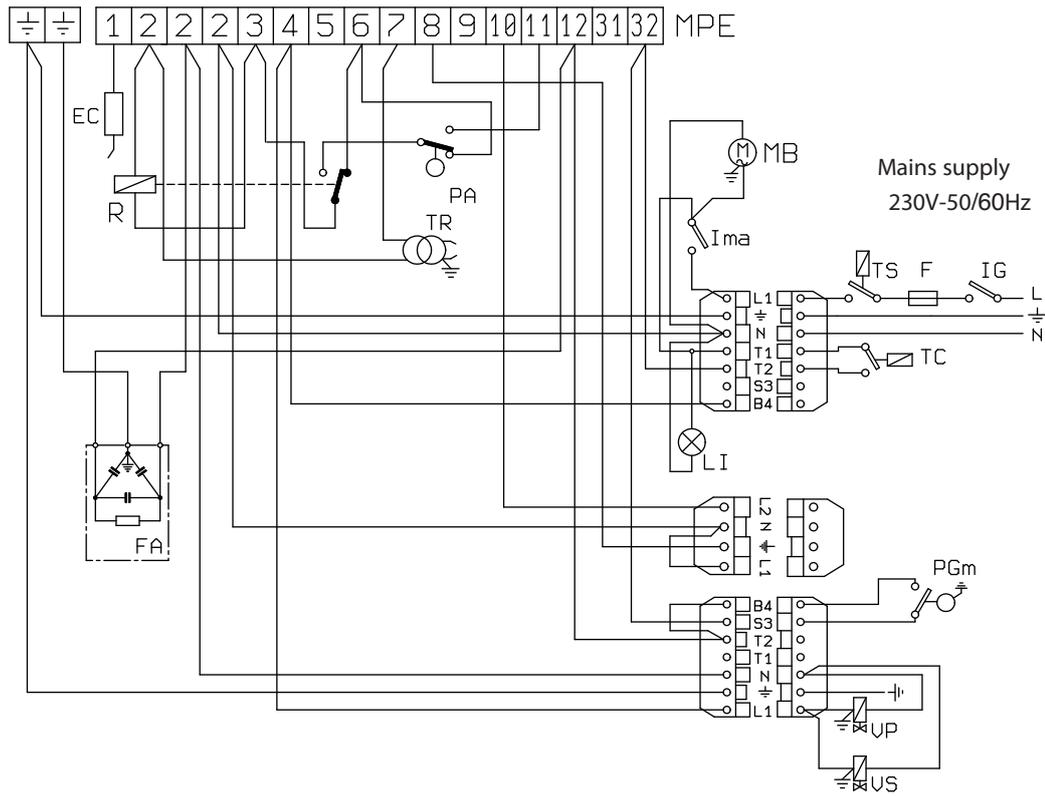
- Do not invert the neutral with the phase.
- Make the connection to an efficient earthing system.
- The electrical power line to the burner must be fitted with an omnipolar switch with an opening of at least 3 mm between the contacts.
- The earth connection to the terminal board of the burner must be made with a cable at least 20 mm longer than the phase and neutral cables.
- Must be workmanlike performed and comply with the regulations in force.



WIRING DIAGRAM - EM 26 UK (VC) BURNER

The connections to be carried out by the installer are:

- Main supply line
- Thermostatic line
- Lock-out lamp at terminal S3 (if present)
- Hour counter at terminal B4 (if present)



Legend

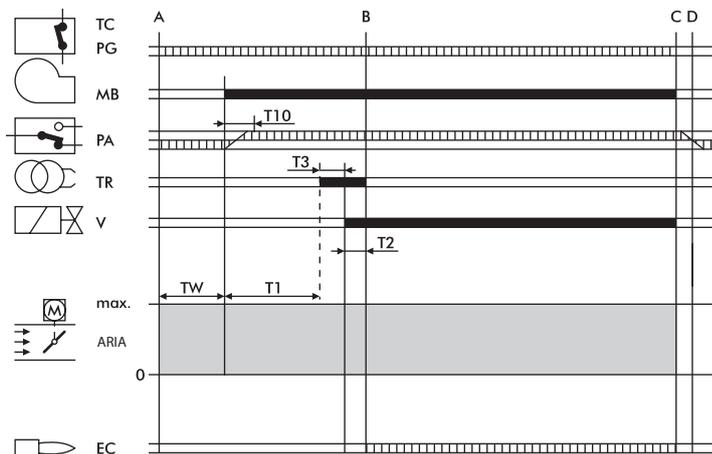
EC	Control electrode	MB	Burner motor	TC	Boiler thermostat
F	Fuse	MPE	Control box terminal board	TR	Ignition transformer
FA	Anti-interference filter	PA	Air pressure switch	TS	Safety thermostat
IG	Main switch	PGm	Minimum gas pressure switch	VP	Main safety valve
Ima	ON/OFF switch	R	Relay	VS	2nd safety valve
LI	Switch light				

NOTE: Always make sure that no more than two wires are connected to each terminal.

Warning:

- Do not invert the neutral with the phase.
- Make the connection to an efficient earthing system.
- The electrical power line to the burner must be fitted with an omnipolar switch with an opening of at least 3 mm between the contacts.
- The earth connection to the terminal board of the burner must be made with a cable at least 20 mm longer than the phase and neutral cables.
- Must be workmanlike performed and comply with the regulations in force.

## OPERATING CYCLE



- TW Begins with the closure of the thermostatic line or the PG. The PA must be in the rest position. This is the waiting and self-test time lasting for 2,5 seconds.
- T10 Begins when the motor starts up and with the pre-purge phase; it lasts for 5 seconds, within which the PA air pressure switch must give the go-ahead.
- T1 Pre-purge time, which lasts for at least 30 seconds, ending when the transformer starts up.
- T3 Pre-ignition phase, it ends when the gas valve opens, and it lasts for 2 seconds.
- T2 Safety time, within which the flame signal must reach the EC electrode; it lasts for 3 seconds.

-  Necessary input signals
-  Output signals
- A Begin start up
- B Flame present
- B-C Operation
- C Control stop
- C-D Air gate closure + post-purge

- TC-PG Thermostats/Gas pressure switch line
- MB Burner motor
- PA Air pressure switch
- TR Ignition transformer
- V Gas valve
- EC Control electrode

## LME EQUIPMENT

The release pushbutton on the equipment is the main component for accessing all the diagnostic functions (activation and deactivation) as well as for releasing the control and checking device. The release pushbutton has a multicoloured led which indicates the state of the control and checking device during operation and when the diagnostic function is in use.

### EQUIPMENT STATE INDICATORS

Description

Condition	Colour sequence
Standby, other intermediate states	No light
Ignition stage	Yellow, flashing
Correct operation	Green
Incorrect operation, current level of flame detector below permitted minimum	Green, flashing
Drop in voltage	Alternating yellow red
Burner lock out	Red
Fault (see table)	Red, flashing
Stray light before burner ignition	Alternating green red
Rapid flashing for diagnostics	Red, rapid flashing

If the burner is locked out, there will be a steady red light on the lock out pushbutton.  
 By pressing the transparent pushbutton, the control and checking device will be released.  
 By pressing it for more than 3 seconds, the diagnosis stage will be activated (red light flashes rapidly).  
 The table below describes the causes of the lock out or fault in relation to the number of flashes (always red).  
 The diagnosis function is interrupted by pressing the release button for at least 3 seconds.

#### DIAGNOSIS OF LME EQUIPMENT FAULTS AND LOCK OUT

Description of operating anomalies	
Visual indication	Possible causes
2 flashes Y Y	No flame signal - Faulty fuel valves - Faulty flame detector - Incorrect burner setting, no fuel - No ignition
3 flashes Y Y Y	- Air pressure switch failure - Air pressure switch loss of signal after T10 - Air pressure switch contact open
4 flashes Y Y Y Y	Stray light on ignition
5 flashes Y Y Y Y Y	Not used
6 flashes Y Y Y Y Y Y	Not used
7 flashes Y Y Y Y Y Y Y	No flame signal during operation - Faulty fuel valves - Faulty flame detector - Incorrect burner setting, no fuel
8 flashes Y Y Y Y Y Y Y Y	Not used
9 flashes Y Y Y Y Y Y Y Y Y	Not used
10 flashes Y Y Y Y Y Y Y Y Y Y	Incorrect electrical connection or damage to equipment
14 flashes Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Open thermostats switch line

## GAS CONNECTION

The system must be equipped with all the accessories required by current regulations. We recommend the following: always include a filter, do not apply mechanical strain to the components and, therefore install a flexible joint as well as a pressure stabilizer and an interception cock at the heating system inlet. The pipes must be laid using rigid pipes. Any flexible pipes must be type approved.

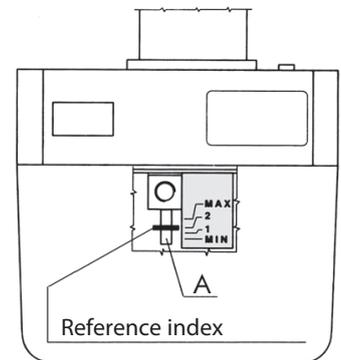
Also bear in mind the necessary space required for carrying out maintenance operations on the burner and the boiler. After fitting the valve unit on the burner, check that there are no gas leaks during the first ignition stage.



## ADJUSTMENTS

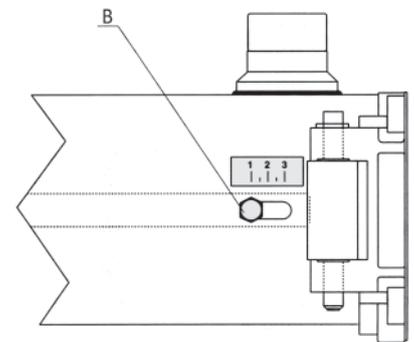
### COMBUSTION HEAD ADJUSTMENT EM 16

Adjust the combustion head by acting on the screw A according to the indications shown on the index.



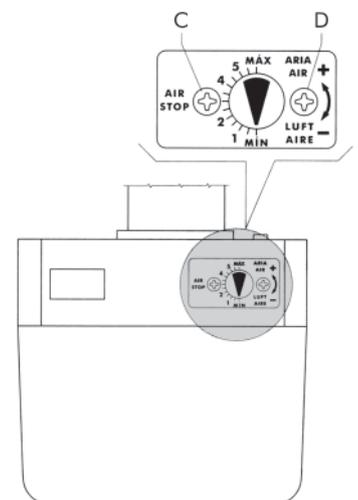
### COMBUSTION HEAD ADJUSTMENT EM 26

- Loosen the knobs B.
- Acting on these modifies the position of the draught tube with respect to the combustion head. Lining knobs up with values 1, 2 or 3 gives minimum, medium and maximum burner delivery respectively.
- Once adjustment has been completed tighten the knobs B.



### COMBUSTION AIR ADJUSTMENT

Adjustment of combustion air is effected from the outside of the cover. After loosening screw C act on air adjustment screw D refer to the label. Once adjustment has been completed tighten screw C.

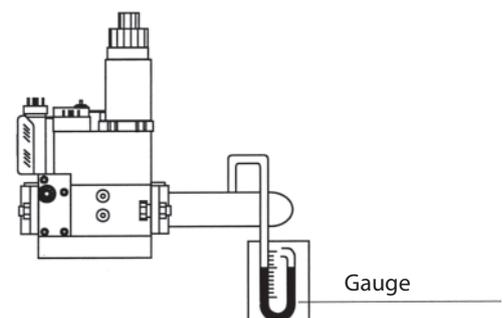


### GAS VALVE ADJUSTMENT

The maximum delivery and the start up delivery must be set.

### MAXIMUM DELIVERY ADJUSTMENT

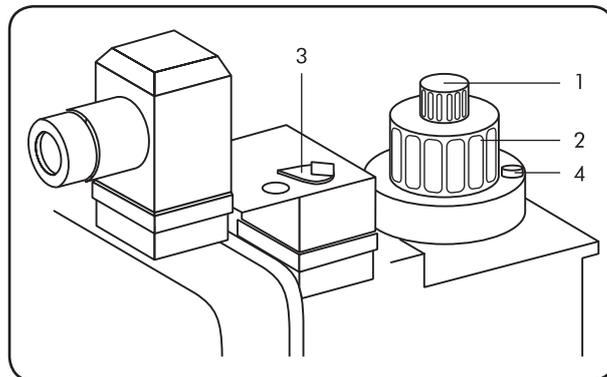
- Assemble a gauge to measure the gas pressure at the burner head.
- Open the gas valve to the maximum.
- While the burner is working, act on the stabilizer until the required delivery is reached (read the meter): read the pressure value on the gauge.
- Act on the valve adjustment by turning the valve towards off until the pressure on the gauge just hints at decreasing. At this point the maximum delivery required is set and controlled by both the stabilizer and the gas valve.



### VALVE ADJUSTMENT MULTIBLOC MB-DLE.../B01

- 1 Opening speed adjustment
- 2 Delivery adjustment
- 3 Stabilizer adjustment
- 4 Locking screw

After loosening screw 4, turn the locknut 2 clockwise to obtain minimum delivery, anticlockwise for maximum delivery. Once adjustment is completed block screw 4 again.



### CHECKING THE QUANTITY OF GAS AT IGNITION

To check the quantity of gas at ignition, apply the following formula:

$$T_s \times Q_s \leq 100$$

where  $T_s$  = Safety time in seconds  
 $Q_s$  = Energy freed in safety time expressed in kW

The  $Q_s$  value is obtained from:

$$Q_s = \frac{Q_1}{T_{s1}} \times \frac{3600}{1000} \times \frac{8127}{860} \times 100$$

where  $Q_1$  = delivery expressed in liters freed in no. 10 startups in safety time.  
 $T_{s1}$  = total safety time of 10 startups  
 $Q_n$  = Rated output

To obtain  $Q_1$ , proceed as follows:

- Detach the lead from the control electrode (ionization electrode).
- Read the gas meter before the test.
- Perform 10 burner startups; these correspond to 10 safety lock-outs. Read the gas meter again; by subtracting the first reading, the  $Q_1$  value is obtained.

Example:

First reading	00006,682 liters
Final reading	00006,947 liters
total $Q_1$	00000,265 liters

- By performing these operations, we can find  $T_{s1}$  by timing no. 1 startup (safety lock-outs) by the no. of startups.

Example:

Actual safety time=	1"95
$T_{s1}$	= 1"95 x 10 = 19"5

- If, at the end of this checkup, the value is above 100, regulate the opening speed of the main valve.

#### CALIBRATION OF AIR PRESSURE SWITCH

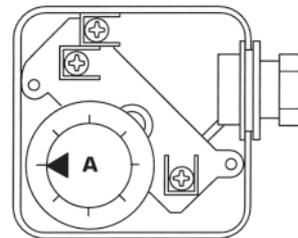
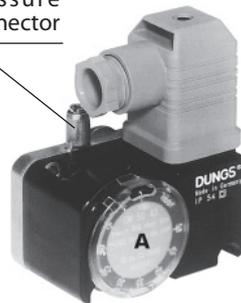
The air pressure switch places the burner in safety mode or shuts it down should there be a drop in combustion air pressure. It will be calibrated at a pressure below 1st stage rated-flow on-burner air pressure, checking that CO values do not exceed 10,000 p.p.m..

#### CALIBRATION OF MINIMUM GAS PRESSURE SWITCH

The minimum gas pressure switch serves to prevent the burner from being started up or to shut it down if the gas pressure falls below the minimum required level. This setting should be 40% lower than the gas pressure obtained with the burner operating at maximum delivery.

PRESSURE SWITCH  
Type: LGW 3 A2  
LGW 3 A2P  
LGW 10 A2P  
GW 150 A2  
GW 150 A5  
Remove the cover and  
adjust dial A

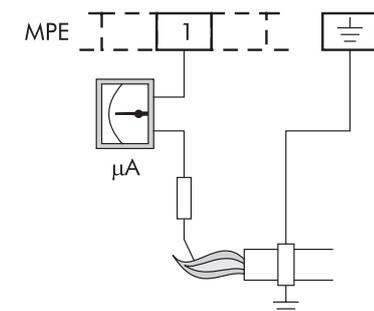
Pressure  
connector



MODEL	Air pressure switch DUNGS type	Setting range mbars	Gas pressure switch DUNGS type	Setting range mbars
EM 16	LGW 3 A2	0,4 - 3	GW 150 A2 GW 150 A5	5 - 150
EM 26	LGW 3 AP	0,4 - 3		5 - 120

#### CHECKING CONTROL BOX IONIZATION CURRENT

The minimum value of 3  $\mu\text{A}$  should be observed,  
and large oscillations are to be avoided.



MICROAMPEREMETER CONNECTION

## CHECKING COMBUSTION

In order to obtain optimum combustion efficiency and to safeguard the environment, we recommend to check, and regulate combustion using the appropriate instruments.

The most important levels to be checked are:

**CO<sub>2</sub>.** The level of CO<sub>2</sub> indicates the excess of air during combustion. If the quantity of air is increased, then the CO<sub>2</sub>% level decreases, while a decrease in combustion air leads to an increase in CO<sub>2</sub>. Acceptable values would be: 8.5-10% METHANE, 11-12% B/P.

**CO.** This indicates the presence of unburnt gas. CO, as well as lowering the combustion efficiency, is also a danger, being a poisonous gas. The presence of CO is thus an indication of imperfect combustion, and is usually a sign that there is a lack of air during combustion. Maximum acceptable value is CO = 0.1% volume.

**Flue gas temperature.** This represents the loss of heat through the chimney. The higher is the temperature, the greater is the loss of heat and the lower is the combustion efficiency. If the temperature is too high, then it is necessary to decrease the amount of gas burnt. Acceptable temperature levels range between 160°C and 220°C.

**NOTE:** Certain countries may have different regulations, and thus different admissible levels from those given above.

## START UP

Check the position of the ignition electrode tips and the position of the control electrode. Check the correct operation of the gas and air pressure switches. When the thermostatic line and the gas pressure switch close the control box gives consent for the motor to be started. During this period the control box conducts a self-test of its correct working order. If the test is positive then the cycle continues and at the end of the pre-purge period (TPR - combustion chamber purge) the consent is given to the transformer for the spark at the electrodes, and to the solenoid valve for opening.

Within the safety time (TS) flame stabilization should occur, otherwise the system goes in lock-out mode.

## PROLONGED SWITCHING OFF

If the burner should remain inactive at length close the gas cock and remove the electrical current from the appliance.

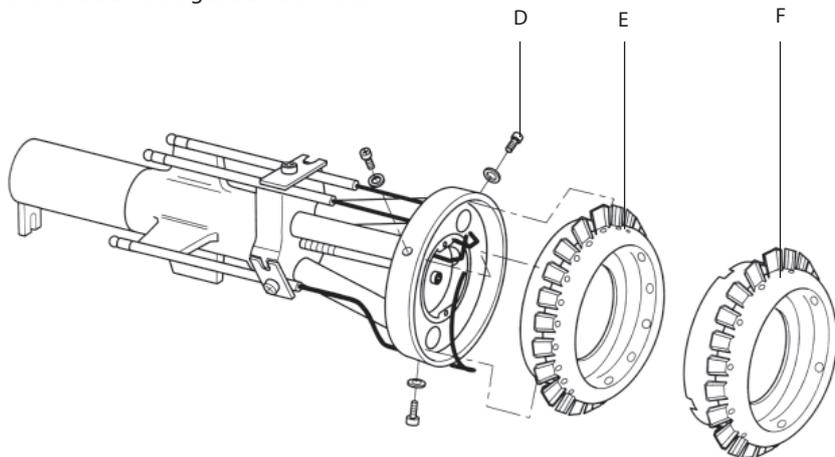
## OPERATION WITH DIFFERENT TYPES OF GAS

### CONVERSION FROM NATURAL GAS TO B/P

A specific burner is not previewed. Should you wish to adapt a natural gas burner for combustion of other gases observe the following instructions.

#### EM 16

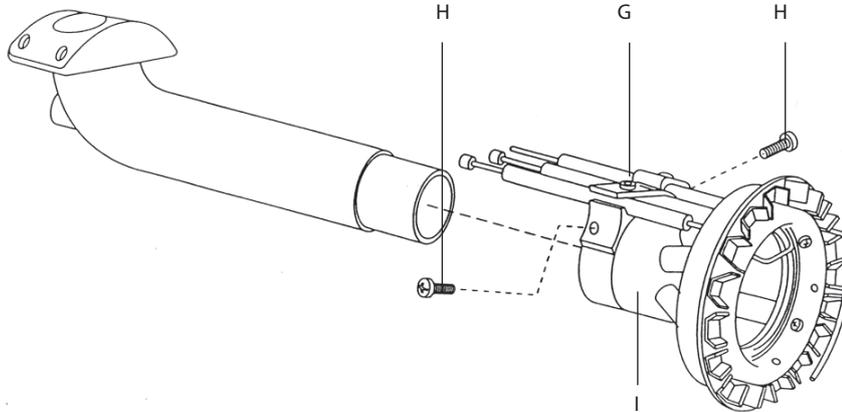
Loosen the screws D, remove the diffuser ring E and replace it with another ring of type F, which differs from type E in that there are less gas outflow holes.





**EM 26**

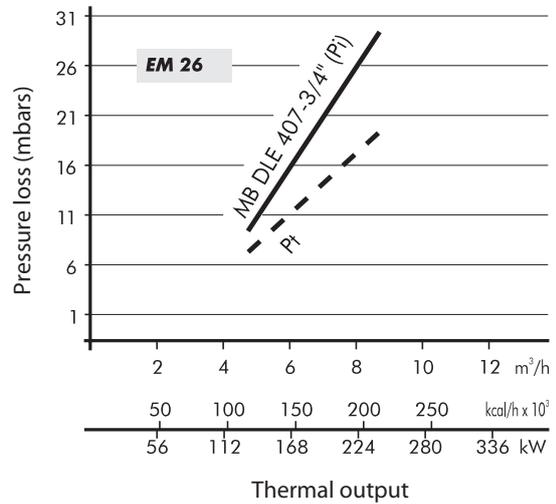
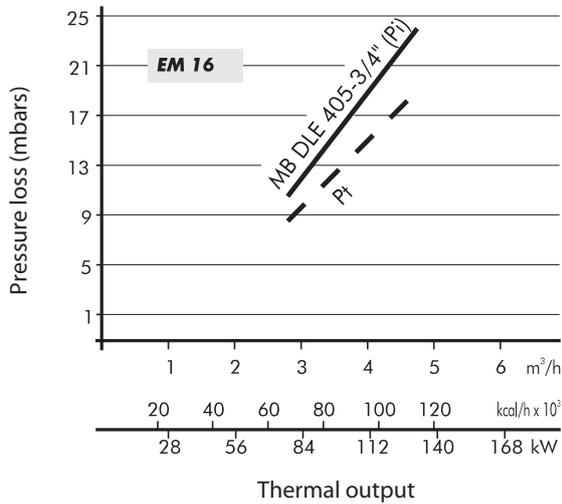
Remove the electrodes G from the head assembly. Loosen the screws H and replace the head assembly I. Fit the electrodes as per the instructions given in the manual.



**GAS DELIVERY**

Per quanto riguarda la portata del gas, mancando in genere la possibilità di controllo diretto (contatore), si può empiricamente procedere attraverso i valori della temperatura fumi della caldaia.

**PRESSURE CURVES - B/P GAS DELIVERY**



**Legend**

Pi Inlet pressure (combustion head + gas train)

Pt Pressure at combustion head



## MAINTENANCE

Skilled staff has to perform yearly the following operations:

- Check the valve inside tightness.
- Filter cleaning.
- Fan and head cleaning.
- Check the position of the ignition electrode tips as well as the control electrode.
- Calibrate the air and gas pressure switches.
- Check the combustion by means of CO<sub>2</sub>-CO-FUMES TEMPERATURE bearings.
- Check all the gaskets and seal tightness.

### EM 16

To gain access to the main components, remove the cover, as shown in (Fig.1).

Combustion head maintenance should be made as follows:

- Close the gas cock and disconnect the gas train. Unscrew the screws 1 and remove the cover 2 (fig.1).
- Unscrew the screws 3 and the central pin 4 (fig.2).
- Hang the component holder plate into the service position 5 and effect combustion head maintenance (fig.3).

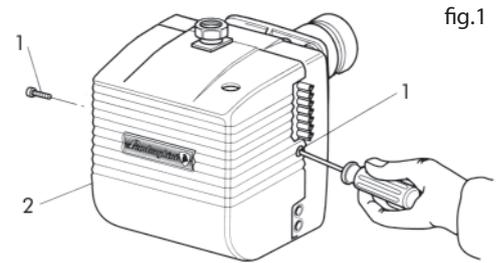


fig.1

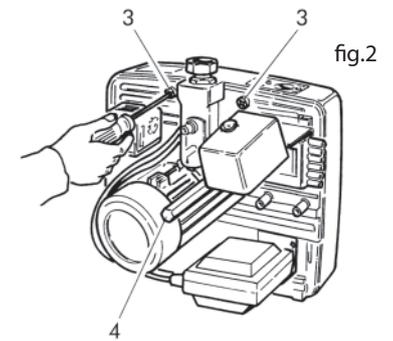


fig.2

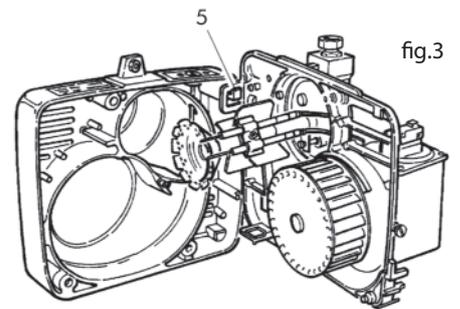


fig.3

### EM 26

To gain access to the main components, remove the cover (fig.4).

Combustion head maintenance should be made as follows:

- Unscrew the screws 1 and remove the cover 2 (fig.4).
- Unscrew the screws 3 and the central pin 4 (fig.4).
- Hang the component holder plate into the service position 5 (fig.5-5A).
- To gain access to the draught tube and to the electrodes, remove the hinge screw 6 and the screws 7 (fig.6).

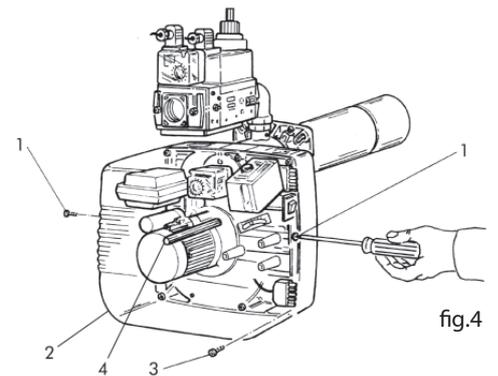


fig.4

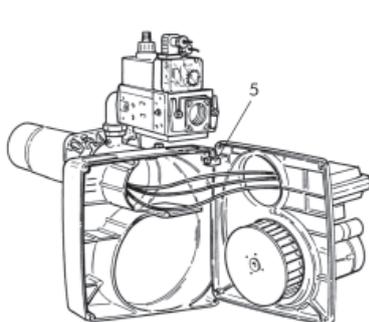


fig.5

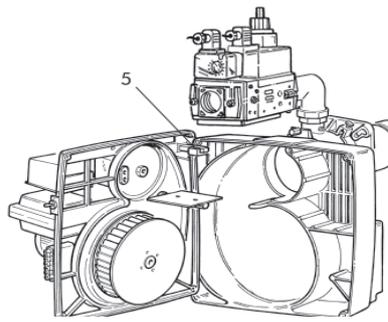


fig.5A

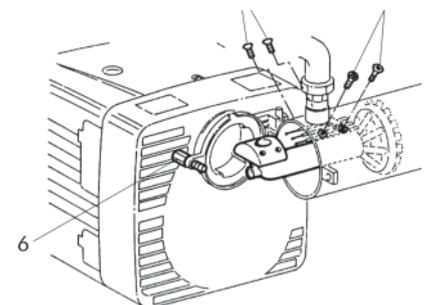


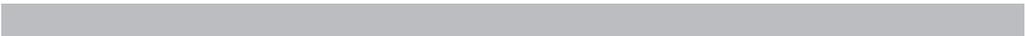
fig.6

## FAULT-FINDING CHART

FAULT	CAUSE	REMEDY
1 THE BURNER DOES NOT START.	A. No electricity. B. Gas fails to reach the burner.	A. Check the main fuses. Check the control box fuse. Check thermostats line and gas pressure switch. B. Check that the interception devices positioned along the feed pipe open properly.
2 THE BURNER STARTS, THERE IS NO FLAME FORMATION, THEN IT LOCKS OUT.	A. Gas valves do not open. B. There is no spark between the electrodes tips. C. Air pressure switch does not give its enabling signal.	A. Check valves operation. B. Check ignition transformer operation, check the electrode tips position. C. Check the calibration and the operation of the air pressure switch.
3 THE BURNER STARTS, THERE IS FLAME FORMATION, THEN IT LOCKS OUT.	A. The control electrode either fails to detect the presence of the flame or it does so inadequately.	A. Check the control electrode position. Check ionization current level.



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ENGLISH

The illustrations and data given are indicative and not binding. Lamborghini Caloreclima reserves the right to make all modifications it deems appropriate for improvement of the product without forewarning.



The unit and its accessories must be appropriately disposed of in compliance with current regulations.

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