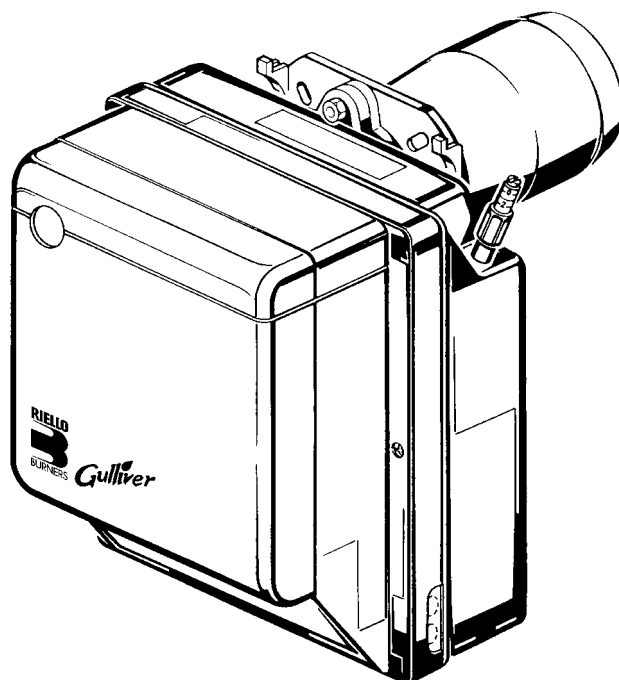


GB Light oil burner

One stage operation



Gulliver



CODE	MODEL	TYPE
3737754	RG2	377 T1

INDEX

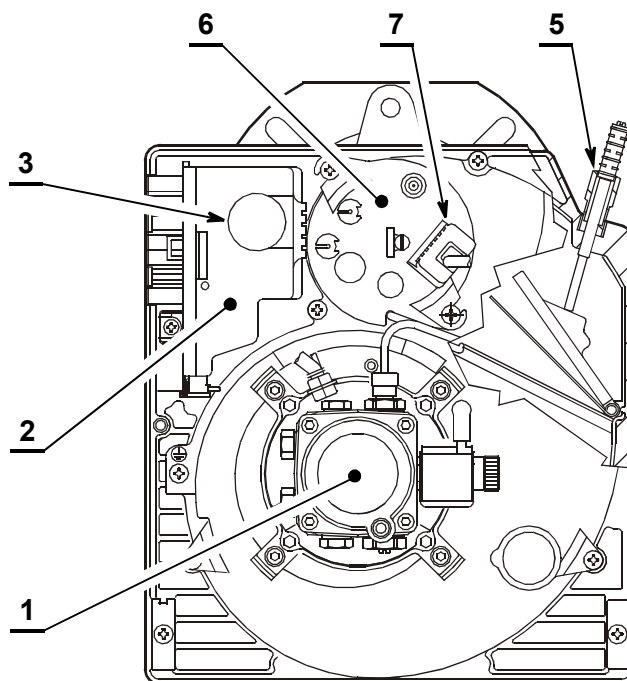
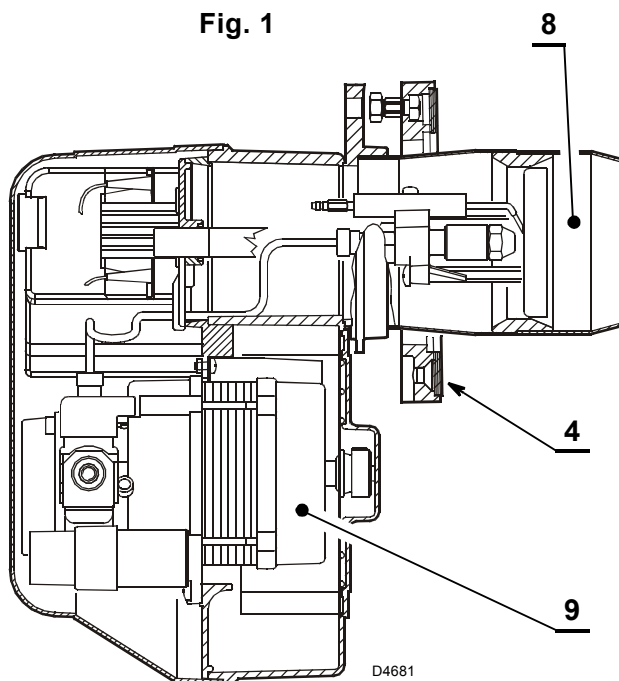
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1. BURNER DESCRIPTION

One stage light oil burner.

- Burner with CE marking in conformity with EEC Directives: EMC 89/336/EEC, Low Voltage 73/23/EEC, Machines 98/37/EEC and Yield 92/42/EEC.
- CE Certification No.: **0036 0344/03** in accordance with 92/42/EEC.
- The burner meets protection level IP X0D (IP 40), as per EN 60529.
- The burner is approved for intermittent operation as per Directive EN 267.

Fig. 1



- 1 – Oil pump
- 2 – Control-box
- 3 – Reset button with lockout lamp
- 4 – Flange with insulating gasket
- 5 – Air damper adjustment assembly

- 6 – Nozzle holder assembly
- 7 – Flame detector
- 8 – Flame tube
- 9 – Motor

1.1 BURNER EQUIPMENT

Flange with insulating gasket	No. 1	Screws and nuts for flange to be fixed to boiler .No. 4
Screw and nuts for flange	No. 1	Flexible oil pipes with nipplesNo. 2
Remote reset connection	No. 1	

1.2 ACCESSORIES

DIAGNOSTIC SOFTWARE KIT

A special kit is available that detects the life of the burner through optical connections with a PC showing the duty hours, number and types of lockout, control box serial number etc...

Do the following to display the diagnostic:

- Connect the kit supplied separately to the appropriate socket on the control box.
The information is read after the software program in the kit is booted.

REMOTE RESET KIT

The burner is fitted with a remote reset kit (**RS**) consisting of a connection to which a button can be connected up to a distance of 20 meters.

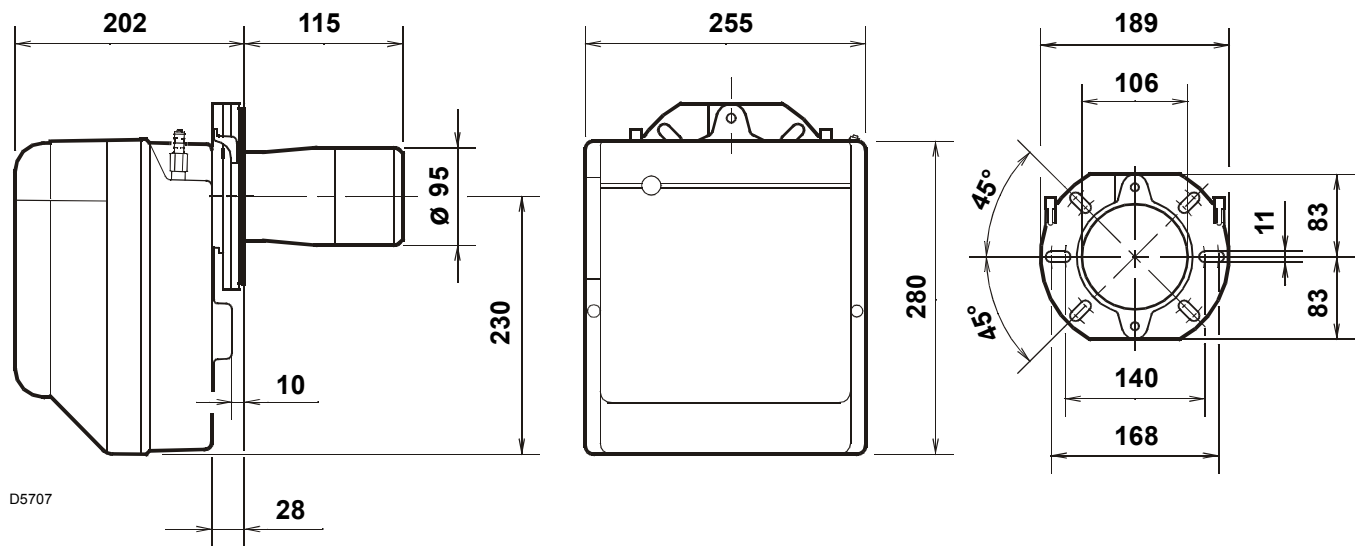
For the installation, remove the protection block installed in the factory and install the block that is supplied with the burner (see wiring diagram on page 6).

2. TECHNICAL DATA

2.1 TECHNICAL DATA

TYPE	377T1
Output – Thermal power	4 – 10 kg/h – 47 – 119 kW
Fuel	Light oil, viscosity 4 – 6 mm ² /s at 20°C
Electrical supply	Single phase, ~ 50Hz 230V ± 10%
Motor	Run current 0.8A – 2750 rpm. – 288 rad/s
Capacitor	4 µF
Ignition transformer	Secondary 8 kV – 16 mA
Pump	Pressure: 8 – 15 bar
Absorbed electrical power	0.18 kW

2.2 OVERALL DIMENSIONS



2.3 FIRING RATE, (as per EN 267)



3. INSTALLATION

THE BURNER MUST BE INSTALLED IN CONFORMITY WITH LEGISLATION AND LOCAL STANDARDS.

3.1 WORKING POSITION

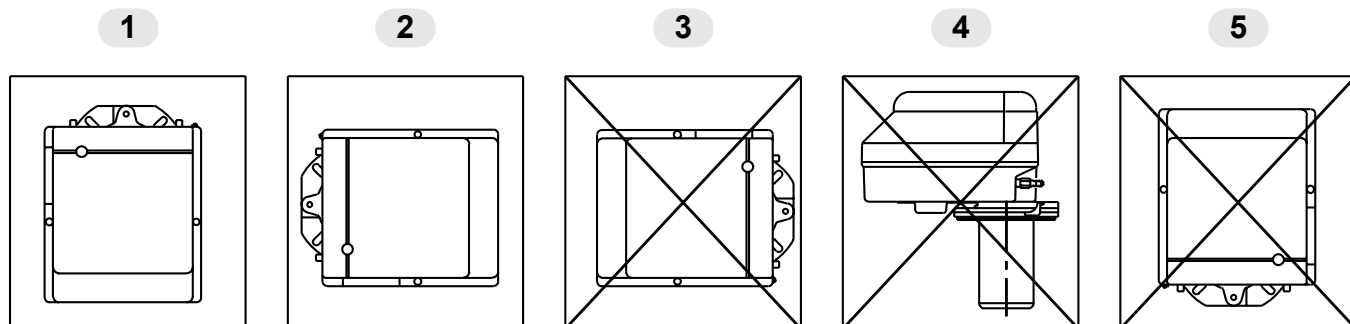
The burner is designed to work only in the positions, **1** and **2**.

Installation **1** is preferable, as it is the only one that allows performing maintenance operations as described in this manual.

Installations **2** allow working operations but not maintenance with hooking to the boiler.

Any other position could compromise the correct working of the appliance.

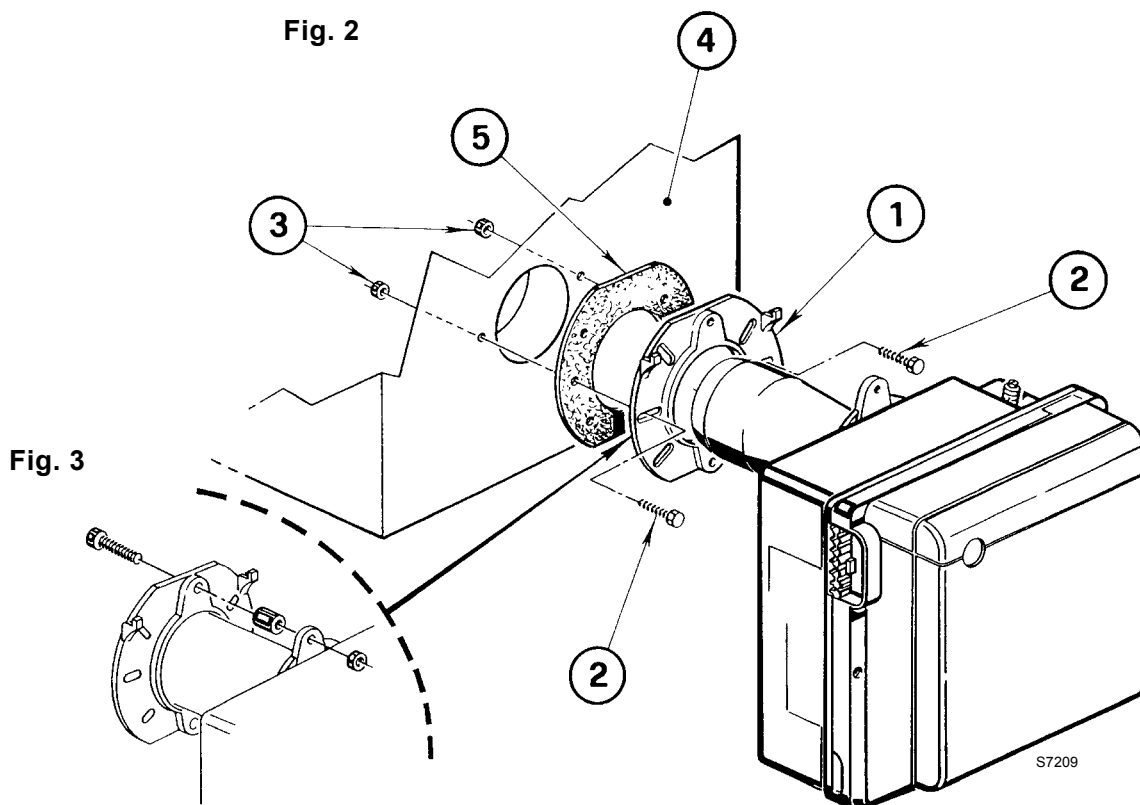
Installations **3**, **4** and **5** are forbidden for safety reasons.



3.2 BOILER FIXING

To install the burner on the boiler, do the following:

- Put on the flange (1) the screw and two nuts (see fig. 3).
- Widen, if necessary, the insulating gasket holes (5 fig.).
- Fix the flange (1) to the boiler door (4) using screws (2) and (if necessary) the nuts (3) interposing the insulating gasket (5), (see fig. 2).



3.3 HYDRAULIC SYSTEMS

ATTENTION:

- The burner is designed to accommodate the installation of light oil supply pipes on either side of the burner.
- It is necessary to install a filter on the fuel supply line.
- The pump is designed for use with a two-pipe system. In order to obtain one-pipe working, it is necessary to unscrew the return plug (2), remove the by-pass screw (3) and then screw the plug (2) up again, (see fig. 4).
- Before starting the burner make sure that the return pipeline is not clogged. An excessive back pressure would cause the damage of the pump seal.

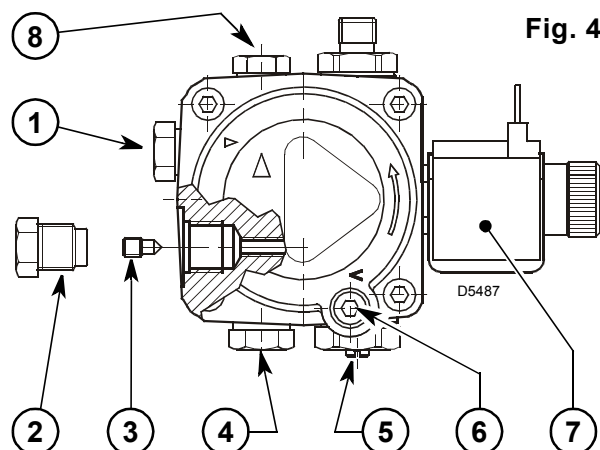
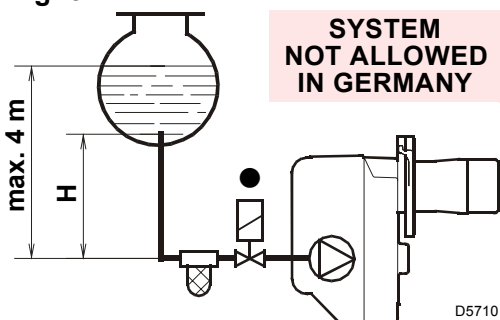


Fig. 4

Fig. 5



H meters	L meters	
	ø i 8 mm	ø i 10 mm
0.5	10	20
1	20	40
1.5	40	80
2	60	100

- 1 - Suction line
- 2 - Return line
- 3 - By-pass screw
- 4 - Gauge connection
- 5 - Pressure adjuster
- 6 - Vacuumeter connection
- 7 - Valve
- 8 - Auxiliary pressure socket

PRIMING PUMP

On the system in fig. 5 it is sufficient to loosen the suction gauge connection (5, fig. 4) and wait until oil flows out.

On the systems in fig. 6 and 7 start the burner and wait for the priming. Should lockout occur prior to the arrival of the fuel, await at least 20 seconds before repeating the operation.

The pump suction should not exceed a maximum of 0.4 bar (30 cm Hg). Beyond this limit gas is released from the oil. Oil pipes must be completely tight. In the vacuum systems (fig. 7) the return line should terminate within the oil tank at the same level as the suction line. In this case a non-return valve is not required. Should however the return line arrive over the fuel level, a non-return valve is required. This solution however is less safe than previous one, due to the possibility of leakage of the valve.

H meters	L meters	
	ø i 8 mm	ø i 10 mm
0	35	100
0.5	30	100
1	25	100
1.5	20	90
2	15	70
3	8	30
3.5	6	20

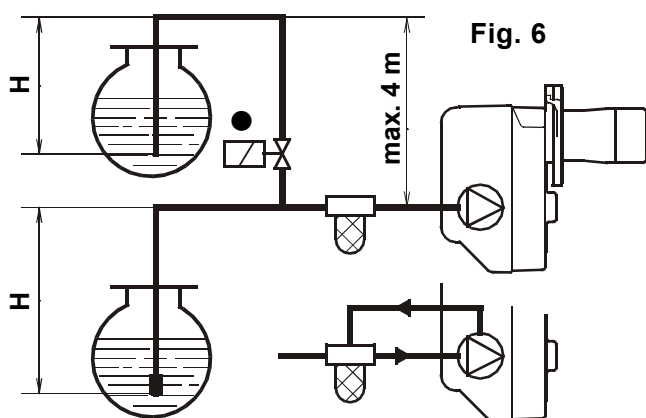


Fig. 6

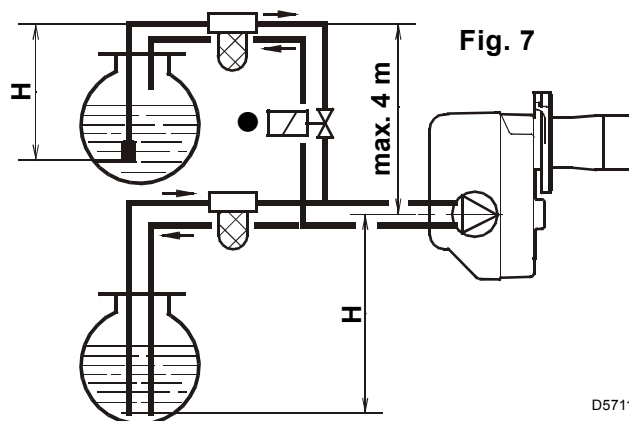


Fig. 7

D5711

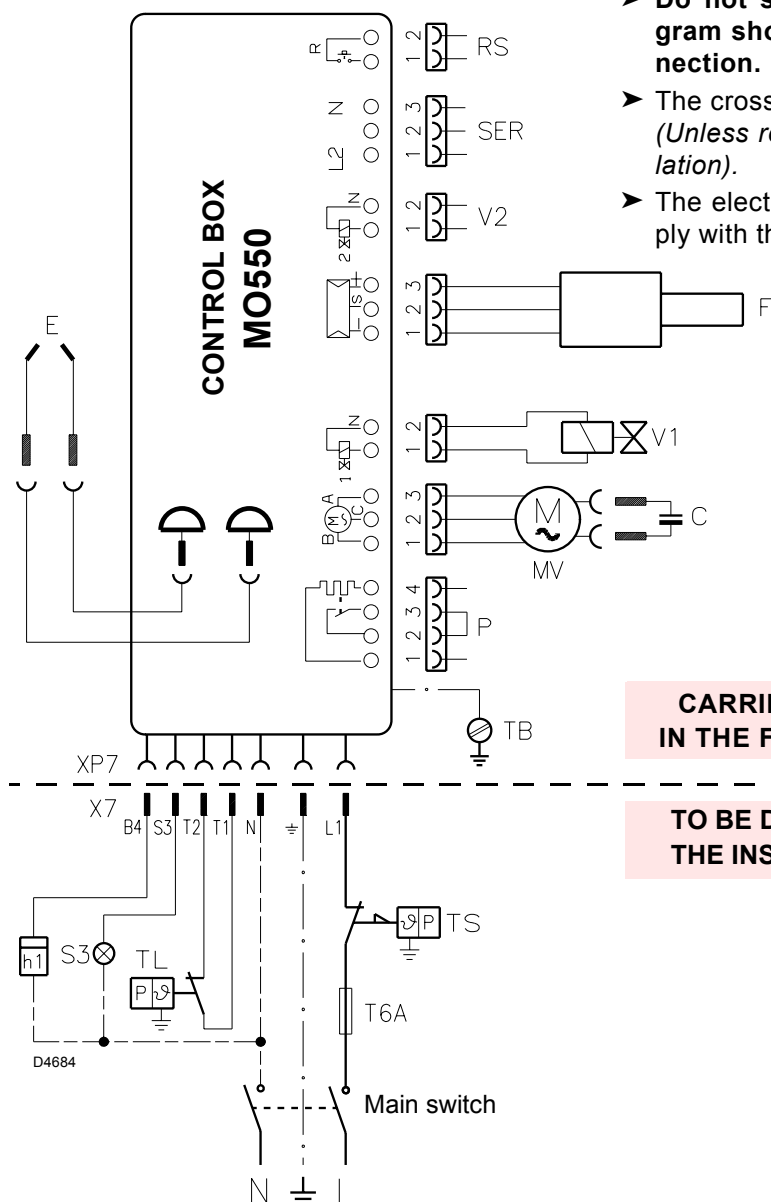
● **ONLY FOR ITALY:** Automatic cut-off device as per Ministry of Internal Affairs' regulation n° 73 dated 7/29/71.

H = difference of level;

L = max. length of the suction line;

ø i = internal diameter.

3.4 ELECTRICAL WIRING



WARNING:

- Do not swap neutral and phase over, follow the diagram shown carefully and carry out a good earth connection.
- The cross section of the wires must be at least 1 sq. mm. (Unless requested otherwise by local standards and legislation).
- The electrical wiring carried out by the installer must comply with the rules in force in the country.

TESTING

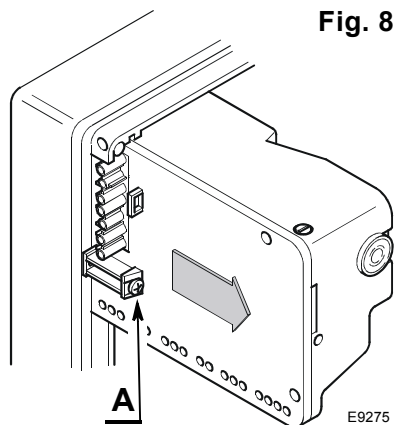
- Check the burner has stopped by opening the thermostats.
- Check the burner's lockout during operation by interrupting the flame detector.

KEY TO LAY-OUT:

- C – Capacitor
- E – Electrode
- F – Flame detector
- h1 – Hour counter
- MV – Motor
- P – Bridge socket
- RS – Remote reset
- SER – Safety lockout device
- S3 – Remote lockout signal
- T6A – Fuse
- TB – Burner earth
- TL – Limit thermostat
- TS – Safety thermostat
- V1 – Oil valve
- V2 – Safety lockout device
- X7 – 7 pin plug
- XP7 – 7 pole socket

230V ~ 50Hz

Fig. 8



CONTROL BOX, (see fig. 8)

To extract the control box from the burner it is necessary:

- to disconnect all the connectors connected to it, the 7 pin plug, and the earth wire (TB);
- undo the screw (A) and pull out the control box in the direction of the arrow.

For the installation of the control box it is necessary:

- to tighten up the screw (A) with a torque of 1 to 1.2 Nm;
- connect all the connectors that were previously connected.

NOTE:

The burners have been approved for intermittent operation.

This means that they must stop once every twenty four hours to permit the electrical control box to check its efficiency at start up.

Normally the boiler's limit thermostat (TL) ensures the stopping of the burner. If this is not the case, it is necessary to apply in series with (TL) a timer switch that turns off the burner at least once every twenty-four hours.

4. BURNER OPERATION

⚠ ATTENTION

QUALIFIED PERSONNEL WITH THE RIGHT INSTRUMENTS MUST HANDLE THE BURNER'S START-UP.

4.1 COMBUSTION ADJUSTMENT

In conformity with Efficiency Directive 92/42/EEC, the application of the burner on the boiler, adjustment and testing must be carried out by observing the instruction manual of the boiler, including verification of the CO and CO₂ concentration in the flue gases, their temperatures and the average temperature of the water in the boiler. To suit the required appliance output, choose the proper nozzle and adjust the pump pressure, the setting of the combustion head, and the air damper opening in accordance with the following schedule. The values shown in the table are measured on a CEN boiler (as per EN 267), and they refer to 12.5% CO₂ at sea level and with light oil and room temperature of 20 °C.

Nozzle		Pump pressure	Burner output	Combustion head adjustment	Air damper adjustment
GPH	Angle	bar	kg/h \pm 4%	Set-point	Set-point
1.00	60°	12	4.0	0	0.9
1.10	60°	12	4.4	1	3.1
1.25	60°	12	5.0	2	3.4
1.50	60°	12	6.0	3	3.8
1.75	60°	12	7.0	4	4.5
2.00	60°	12	8.0	5	4.9
2.25	60°	14	9.8	6	6.0

4.2 RECOMMENDED NOZZLES

Delavan W - B type; Danfoss S - B type;
Monarch R type; Steinen S - Q type.

For nozzles of 1.75 - 2.00 - 2.25 GPH, it is advisable to use full cones.

4.3 PUMP PRESSURE

It leaves the factory set at 12 bar. To change it act on pump pressure screw (4, fig. 4, page 5).

4.4 ELECTRODE ADJUSTMENT, (see fig. 9)

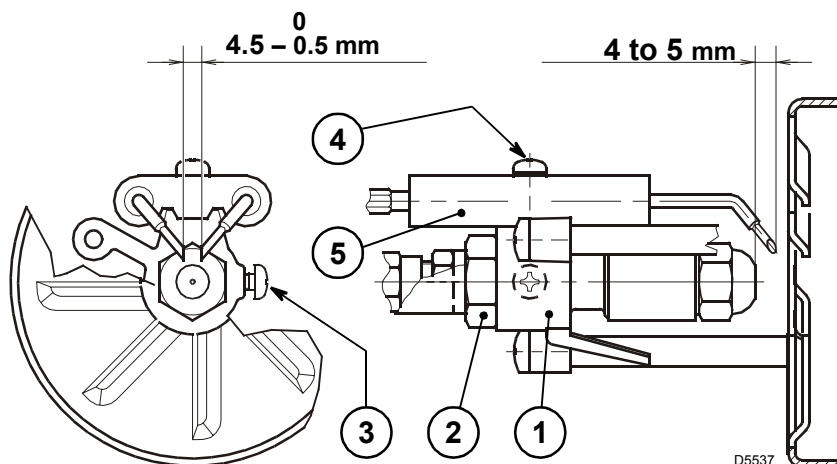
Fig. 9

ATTENTION **MEASURES MUST BE RESPECTED**

Lean the diffuser disc-holder assembly (1) on the nozzle-holder (2) and lock it by screw (3).

For prospective adjustments loosen screw (4) and move the electrode assembly (5).

To access the electrodes do the following described in chapter “**4.5 MAINTENANCE POSITION**” (page 8).



4.5 MAINTENANCE POSITION, (fig. 10 and 11)

ACCESSIBILITY TO THE NOZZLE, THE DIFFUSER DISC AND THE ELECTRODES IS MADE EASY IN 2 WAYS:

- Unscrew and remove the fixing nuts to the flange and remove the burner from the boiler.
 - Hook the burner onto flange (1), loosen the screws (3) and remove the nozzle (2).
 - Remove the small cables (4) from the electrodes, loosen the screw (3 fig. 9 page 7) and remove the diffuser disc-holder assembly (5) from the nozzle-holder assembly (7).
 - Screw up the nozzle (6) holding the nozzle support with a spanner.
 - Refit following the operations in the reverse order to the one described above.
- Undo the wires (4) from the control box, the flame detector (8) and undo the nut (9) from the pump.
 - Loosen the screws (10) and extract the nozzle holder assembly (7) by turning to the right.
 - Remove the small cables (4) from the electrodes, loosen the screw (3 fig. 9 page 7) and remove the diffuser disc-holder assembly (5) from the nozzle-holder assembly (7).
 - Screw up the nozzle (6) holding the nozzle support with a spanner.
 - Refit following the operations in the reverse order to the one described above.

Fig. 10

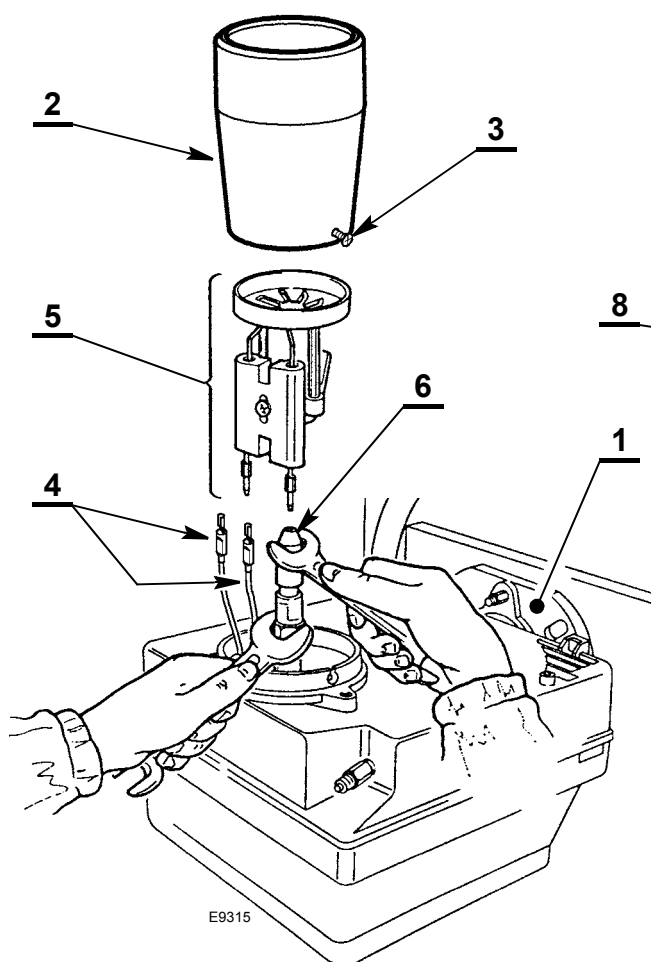


Fig. 11

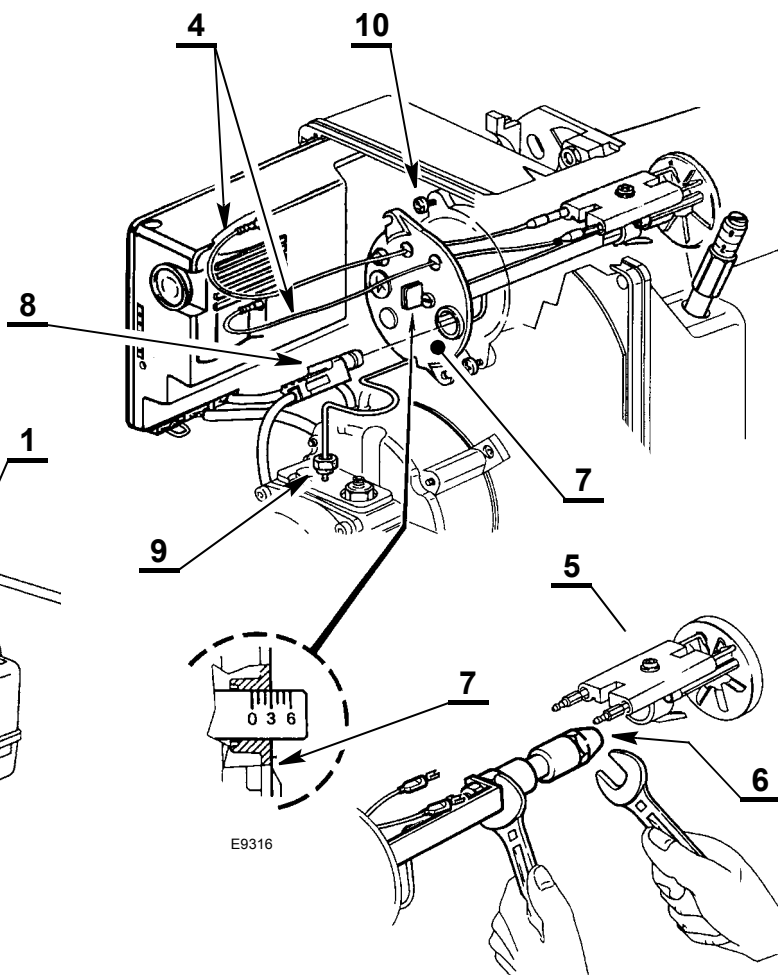
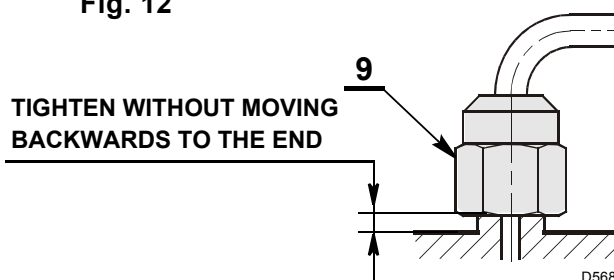


Fig. 12



ATTENTION

During the reassembly of the nozzle-holder assembly screw the nut (9) as shown in fig. 12.

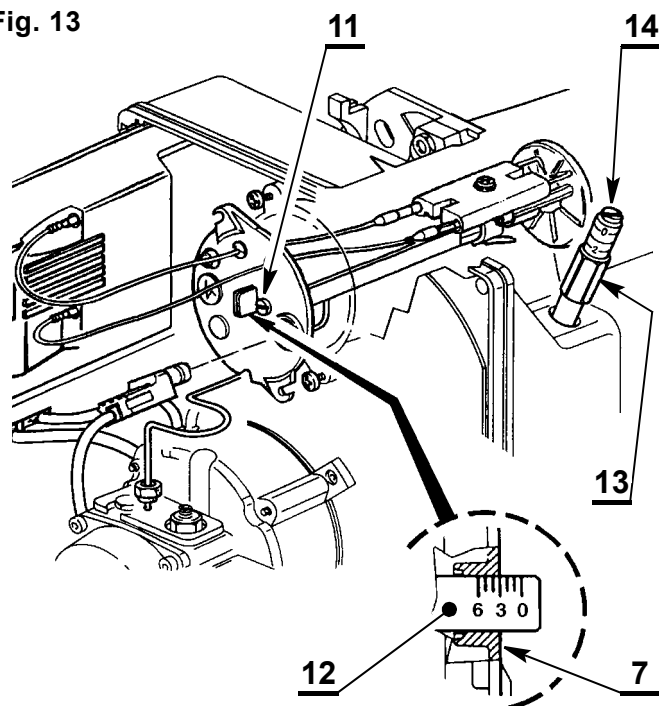
4.6 COMBUSTION HEAD ADJUSTMENT, (see fig. 13)

The adjustment of the combustion head varies depending on the burner output.

Do the following to adjust it:

- Rotate the setting screw (11) clockwise or counterclockwise until the set-point marked on the regulating rod (12) is level with the outside plane of the nozzle-holder assembly (7).
- In the example the regulating rod (12) is set at notch 3; this means that the burner is regulated for an output of 6 Kg/h with pump pressure at 12 bar and with the use of a nozzle of 1.50 GPH, as indicated in the reference table.

Fig. 13

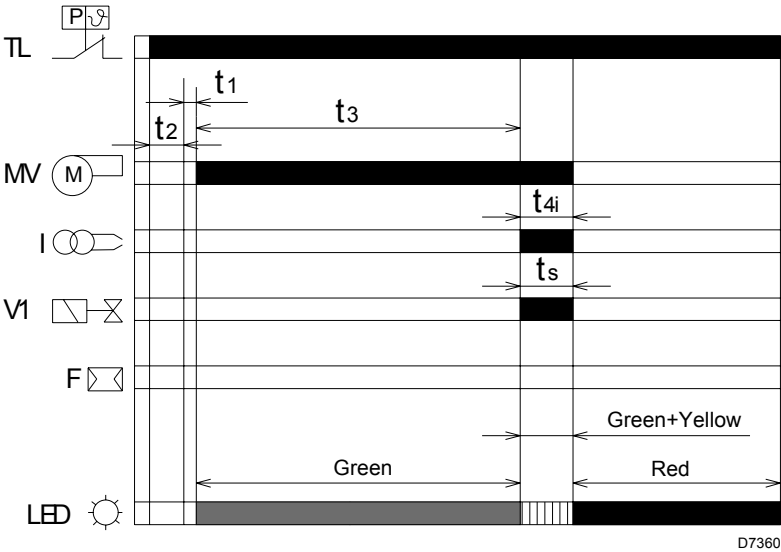


4.7 AIR DAMPER ADJUSTMENT, (see fig. 13)

To regulate the air damper, do the following:

- Loosen the nut (13) and set the air damper by turning the screw (14).
- When burner shuts down the air damper automatically close still a max. chimney depressure of 0.5 mbar.
- When the adjustment is completed do the nut (13) up again.

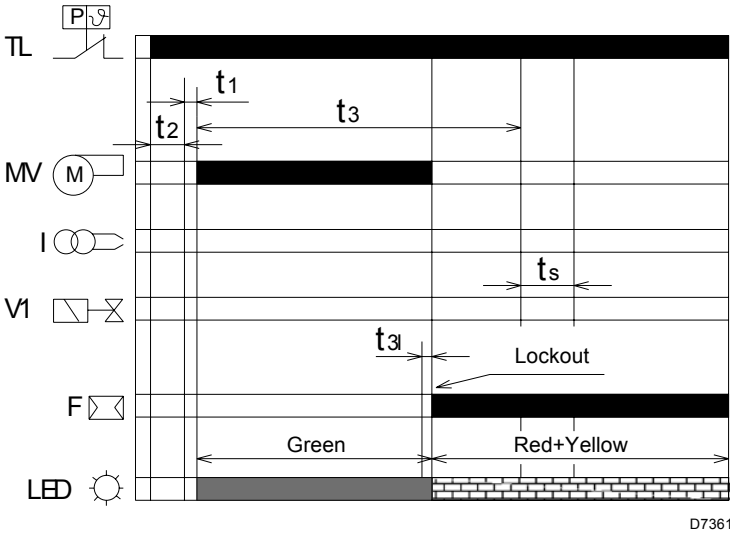
4.8.2 LOCKOUT DUE TO FIRING FAILURE



- KEY TO LAY-OUT**
- F** – Flame detector
 - I** – Ignition transformer
 - LED** – Reset button LED indicating operating status
 - MV** – Fan motor
 - TL** – Limit thermostat
 - V1** – Oil valve

- Red
- Green + Yellow slow blinking
- Green + Yellow fast blinking
- Green
- Green + Yellow medium blinking
- Red + Yellow fast blinking
- Yellow fast blinking

4.8.3 LOCKOUT DUE TO EXTRANEEOUS LIGHT DURING PRE-PURGING



OPERATING TIMES

t1	max	1
t1l	max	30
t2	-	3
t3	-	15
t3l	max	1
ts	-	5

t4i	-	8
t5i	-	3
t4l	max	1
t6	max	360
t6l	max	30
t7	-	120

Time is expressed in seconds

COLOUR CODE OF THE CONTROL BOX RESET BUTTON LED

Operating status		LED colour codes	Blinking speed	ON Seconds	OFF
Wait	○	Led unlit			
Pre-purging	●	Green			
Long pre-purging	●	Green			
Transformer turn on	●	Green + Yellow blinking	Fast	0.3	0.3
Regular flame	● ●	Green + Yellow blinking	Slow	0.3	2
Post-purging	● ●	Green + Yellow			
Recycle	● ●	Green + Yellow blinking	Medium	2	1
Continuous purging (*)	●	Green			
Extraneous light during standby	●	Yellow blinking	Fast	0.3	0.3
Extraneous light during post or continuous purging (*)	● ●	Green + Yellow blinking	Fast	0.3	0.3
Extraneous light during lockout	● ●	Red + Yellow blinking	Fast	0.3	0.3
Lockout	●	Red			
Lockout with continuous purging (*)	● ●	Red + Green			

(*) only for applications provided for.

4.8.4 LOCKOUT TYPES AND TRIGGERING TIMES IN CASE OF BURNER MALFUNCTION

DESCRIPTION OF THE FAULT TYPES	BLOCK
Extraneous light when the burner is turned on and off	After max. 30 seconds
Extraneous light detected during pre-purging	Within 1 second
Extraneous light detected during post-purging or continuous purging (*)	After max. 30 seconds
Flame goes out during operation	After 3 recycles
No flame is detected after safety time	Immediate

(*) only for applications provided for.

4.8.5 CONTROL BOX RESET

To reset the control box, proceed as follows:

- Press and hold the reset button for between 1 and 2 seconds. If the burner does not restart, you must make sure the limit thermostat (TL) is closed.
- **If the control box reset button continues to blink signalling the cause of the failure (RED LED), it is necessary to press the button again for no more than two seconds.**

4.8.6 RECYCLE FUNCTION

The control box allows a recycle, i.e. complete repetition of the start-up programme, making up to 3 attempts, in the event the flame goes out during operation.

If the flame goes out again, this will cause the burner to lock out. If there is a new demand for heat during the recycle, the 3 attempts are reset when the limit thermostat (TL) switches.

4.8.7 LOGGING OF BURNER OPERATING PARAMETERS

With this control box, data - i.e. the number of blocks that have occurred, the type of block that has occurred (just the last one) and the oil valve opening operating time - can be logged even when there is no power supply. That way, you can determine how much fuel has been consumed during operation.

To display these parameters, it is necessary to connect the software diagnosis kit as described in paragraph (1.2) page 2.

4.9 ADDITIONAL, PROGRAMMABLE CONTROL BOX FUNCTIONS

4.9.1 POST-PURGING FUNCTION (t6)

Post-purging is a function that keeps air purging on even after the burner switches off. The burner switches off when the limit thermostat (TL) opens, consequently cutting off the fuel supply to the valves. To use this function the reset button must be pressed when the limit thermostat is not switched over (**burner switched off**).

Post-purging time can be set to a maximum of **6 minutes**, proceeding as follows:

- Press and hold the reset button for at least 5 seconds till the LED indicator changes to red.
- Set the desired time by pressing the button the appropriate times: **once = post-purging for 1 minute**.
- After 5 seconds the control box automatically shows the minutes set by the red LED blinking: **1 led pulse = post-purging for 1 minute**.

To reset this function, press and hold the button for at least 5 seconds at least, till the LED indicator changes to red then release it without carrying out any operation, then wait for 20 seconds for the burner to start again.

If during post-purging there is a new request for heat, post-purging time is halted and a new burner operating cycle starts when the limit thermostat (TL) switches.

If during post-purging there is an extraneous light the burner blocks after thirty seconds.

The control box's factory settings are as follows: **0 minutes = no post-purging**.

4.9.2 CONTINUOUS PURGING FUNCTION, (only for applications in which this is provided for)

Continuous purging is an operation that maintains the air purging regardless of whether there is a request for the burner to turn on or not. From the moment it is set, the motor keeps running whether the limit thermostat (TL) has not been switched (burner off), or when the burner is blocked.

Only when the limit thermostat (TL) is switched does the motor stop for the standby time of four seconds (stand-by position = $t_2 + t_1$).

The function can be set from the reset button when the limit thermostat (TL) is not switched (burner off), by following the procedure in the post-purging function paragraph 4.9.1 by pressing the button **7 times = continuous purging**.

To reset this function, press and hold the button for at least 5 seconds at least, till the LED indicator changes to red then release it without carrying out any operation, then wait for 20 seconds for the burner to start again.

If when the limit thermostat (TL) switches, there is an extraneous light the motor stops as long as the extraneous light is there followed by the block.

The control box's factory settings are as follows: **0 minutes = no continuous post-purging**.

4.9.3 LONG PRE-PURGING (t7) FUNCTION

The long pre-purging makes it possible too lengthen the purging of the air by the switching of the limit thermostat (TL) on the ignition of the flame for up to two minutes. The function can be set from the reset button when the limit thermostat (TL) is not switched (burner off), by following the procedure in the post-purging function paragraph 4.9.1 by pressing the button **8 times = long pre-purging**.

To reset this function, press and hold the button for at least 5 seconds at least, till the LED indicator changes to red then release it without carrying out any operation, then wait for 20 seconds for the burner to start again. The control box's factory settings are as follows: **0 minutes = no long pre-purging**.

4.9.4 FUNCTION SETTING PROCEDURE USING RESET BUTTON

Control box function CONTROL BOX	Action with the reset button	Reset button inabled status
Reset	1 to 2 seconds	After control box lockout
Visual diagnostics of lockout causes (5.1)	3 seconds	After control box lockout
Post-purging (4.9.1)	5 seconds then press once = 1 minute	With limit thermostat (TL) not switched (burner off)
Continuous purging (4.9.2) (only for applications provided for).	5 seconds then press 7 times = continuous purging	With limit thermostat (TL) not switched (burner off)
Long pre-purging (4.9.3)	5 seconds then press 8 times = long pre-purging	With limit thermostat (TL) not switched (burner off)
Resetting set functions	5 seconds	With limit thermostat (TL) not switched (burner off)
Resetting operating parameters	5 seconds	With limit thermostat (TL) switched during pre-purging

5. MAINTENANCE

Before carrying out any cleaning or control operation, cut off the electricity supply to the burner using the system's main switch and close the oil cut off valve.

The burner requires periodic maintenance carried out by a qualified and authorised technician in conformity with legislation and local standards.

Periodic maintenance is essential for the reliability of the burner, avoiding the excessive consumption of fuel and consequent pollution.

THE BASIC CHECKS ARE:

- Check that there are no obstructions or kinks in the supply or return oil pipes, in the air intake regions and the combustion product discharge tubes.
- Check the proper positioning of the combustion head and its fixing to the boiler.
- Clean the combustion head in the oil outlet area.
- Clean the filter in the oil suction line and in the pump.
- Check that the electrical wiring of the burner have been made properly.
- Clean the flame detector.
- Check the correct oil consumption.
- Check that the combustion head (fig. 13 page 9) and the air damper (fig. 13, page 9) have been regulated properly.
- Replace the nozzle (fig. 10 and 11, page 8) if necessary and check the correct position of electrodes (fig. 9, page 7).
- Clean the fan.

Leave the burner working without interruptions for 10 min. and set all the components stated in this manual properly. **Then carry out the analysis of the scale combustion by checking:**

- Smoke index as per Bacharach;
- CO₂ Percentage (%);
- CO Content (ppm);
- NO_x content (ppm);
- Smoke temperature at the chimney.

5.1 VISUAL DIAGNOSTICS CONTROL BOX

The control box features a diagnostics function through which any causes of malfunctioning can be identified (indicator: **RED LED**).

To use this function, you must press and hold the reset button for at least 3 seconds once it has entered the safety condition (**lockout**).

The control box generates a sequence of led pulses, which is repeated at constant 2-second intervals.

RED LED illuminated press reset for 3 sec.	Pulses	Interval 2s	Pulses
	• • • • •		• • • • •

The sequence of led pulses issued by the control box identifies the possible types of malfunction, which are listed in the table below.

SIGNAL	PROBABLE CAUSE
2 pulses • •	The flame does not stabilise at the end of the safety time: <ul style="list-style-type: none">– flame detector faulty or dirty;– oil valve faulty or dirty;– faulty ignition transformer;– poor burner regulation.
4 pulses • • • •	Light present in the chamber before the burner's switching on or off: <ul style="list-style-type: none">– presence of extraneous light before or after the limit thermostat switching over;– presence of extraneous light during pre-purging;– presence of extraneous light during post-purging.

SIGNAL	PROBABLE CAUSE
7 pulses ● ● ● ● ● ● ●	Loss of flame during operation: – poor burner regulation; – oil valve faulty or dirty; – flame detector faulty or dirty.
8 pulses ● ● ● ● ● ● ● ●	Check and monitor oil heater (if fitted): – check the correct position of the bridge socket "P".

ATTENTION To reset the control box after the diagnostics display, press the lockout-reset button.

6. FAULTS / SOLUTIONS

Here below you can find some causes and the possible solutions for problems that could cause a failure to start or a bad working of the burner.

A fault usually makes the lockout lamp light which is situated inside the reset button of the control box (3, fig. 1, page 2).

When lock out lamp lights the burner will attempt to light only after pushing the reset button. After this if the burner functions correctly, the lockout can be attributed to a temporary fault. If however the lock out continues, the cause must be determined and the remedies shown in the following table adopted.

6.1 START-UP PROBLEMS

FAULT	POSSIBLE CAUSES	SOLUTION
The burner does not start when the limit thermostat closes.	Lack of electrical supply.	Check presence of voltage in the L1 - N clamps of the 7 pin plug.
		Check the conditions of the fuses.
		Check that safety thermostat is not lock out.
	Bridge socket "P" missing or disconnected.	Connect it up properly.
	The connections in the control box are wrongly inserted.	Check and connect completely all the plugs.
The burner goes in safety lockout before or during the pre-purging.	The flame detector sees extraneous light.	Eliminate the light.
Burner runs normally in the prepurge and ignition cycle and locks out after 5 seconds ca.	The flame detector is dirty.	Clear it.
	The flame detector is faulty.	Replace it.
	Flame moves away or fails.	Check pressure and output of the fuel.
		Check air output.
		Change nozzle.
		Check the coil of solenoid valve.

FAULT	POSSIBLE CAUSES	SOLUTION
Burner starts with an ignition delay.	The ignition electrodes are wrongly positioned.	Adjust them according to the instructions of this manual.
	Air output is too high.	Set the air output according to the instructions of this manual.
	Nozzle dirty or worn.	Replace it.

6.2 OPERATING IRREGULARITIES

FAULT	POSSIBLE CAUSES	SOLUTION
Burner locks out during operation.	Flame disappears four times.	Clean or replace the flame detector.
		Replace the dirty or deteriorated nozzle.
	Does not shut down.	Check efficiency of flame detector.
		Check efficiency pressure regulator's piston.
		Check efficiency of pump's on-off valve.

7. SAFETY WARNINGS

The dimension of the boiler's combustion chamber must respond to specific values, in order to guarantee a combustion with the lowest polluting emissions rate.

You are therefore advised to consult the Technical Assistance Department before choosing this type of burner for the combination with a boiler. Qualified personnel are those with the professional and technical requirements indicated by law no. 46 dated March 5, 1990 n° 46.

The commercial organisation has a widespread network of agencies and technical offices whose personnel participates periodically in instructional and refresher courses at the company training centre.

This burner must only be used for the purposes it has specifically been designed for.

All contractual and other liability on the part of the manufacturer is excluded for injury caused to people, animals or damage caused to property due to faulty installation, calibration, adjustment, maintenance or improper use.

7.1 BURNER IDENTIFICATION

The Identification Plate on the product gives the serial number, model and main technical and performance data. Tampering with, removal or absence of the Identification Plate will mean it is not possible to identify the product with certainty and therefore make any installation or maintenance difficult and/or dangerous.

7.2 BASIC SAFETY RULES

- Children or inexperienced persons must not use the appliance.
- Under no circumstances must the intake grids, dissipation grids and ventilation vents in the installation room be covered up with cloths, paper or any other material.
- Unauthorised persons must not attempt to repair the appliance.
- It is dangerous to pull or twist the electric leads.
- Cleaning operations must not be performed if the appliance is not disconnected from the main power supply.
- Do not clean the burner or its parts with inflammable substances (e.g. petrol, alcohol, etc.). The cover must be cleaned with soapy water.
- Do not place anything on the burner.
- Do not block or reduce the size of the ventilation vents in the installation room.
- Do not leave containers and inflammable products in the installation room.



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