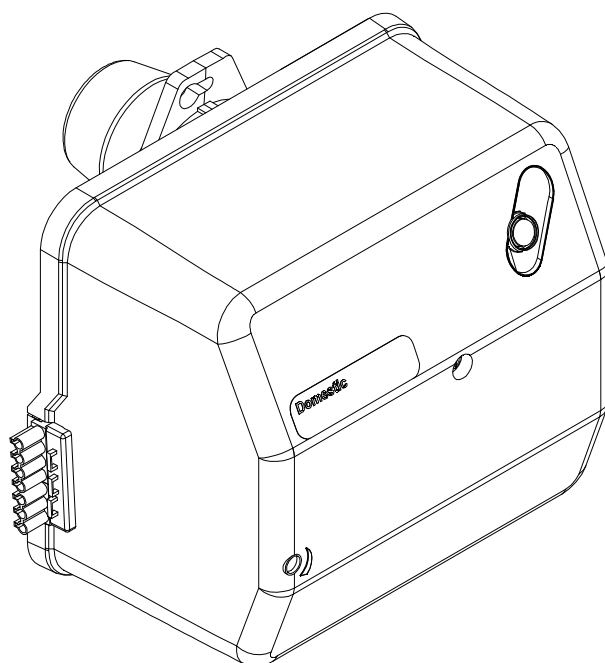


INSTALLATION AND FUNCTIONING INSTRUCTIONS

- ↳ DOMESTIC D3 LN
- ↳ DOMESTIC D4 LN
- ↳ DOMESTIC D4 LN G



ÍNDICE

	<u>Pág.</u>
1.- GENERAL FEATURES	2
2.- MOUNTING.....	2
3.- OIL INSTALLATION	2
4.- START UP OF THE BURNER	2
5.- BURNER COMBUSTION ADJUSTMENT.....	2
6.- SELECTION OF OIL NOZZLE.....	3
7.- DIMENSIONS.....	3
8.- PRIMARY COMBUSTION AIR ADJUSTMENT	4
9.- COMBUSTION LINE ADJUSTMENT	4
10.- CORRECT POSITIONING OF IGNITION ELECTRODES	4
11.- OIL PRESSURE ADJUSTMENT.....	5
12.- OIL INSTALLATION DIAGRAMS.....	5
13.- TECHNICAL DATA.....	6
14.- WORKING DIAGRAM	6
15.- OIL FLOW VERSUS NOZZLE AND PUMP PRESSURE.....	7
16.- ELECTRICAL DIAGRAMS	8
17.- OIL EASY CONNECTION.....	9
18.- BURNER CONTROL OPERATING SEQUENCE	10
19.- BURNER ERROR CODE.....	11

Domestic

1.- GENERAL FEATURES

The burners with CE label are in compliance with the following directives: 2014/30/EC of Electromagnetic Compatibility, 2014/35/EU of Low Voltage and 2006/42/EC of machinery.

WARNING: This manual forms an essential part of the product and it must be given to the user. Read the warnings and recommendations in the manual carefully, as they contain important information on the safety, use and maintenance of the installation.

These burners are to be installed by skilled personnel only, in accordance with the legislation in force and following the manufacturer's instructions.

2.- MOUNTING

Fix the burner support to the boiler. Fix the burner to the support. This allows a correct inclination of the flame tube towards the combustion chamber. Mount the oil aspiration and return tubes, including the oil-filter in the aspiration.

3.- OIL INSTALLATION

"Domestic" burner is equipped with a self-aspiration pump, which allows the aspiration of combustible from the tank which is installed in a lower level than the burner, as long as the pressure measured with a vacuumeter in the pump does not exceed 30 cmHg.

4.- START UP OF THE BURNER

Make sure that there is combustible in the tank, also that the oil valves are open and there is electric connection to the burner. Switch on the main switch. Unscrew the air-drains screw (manometer tap). Then, when the electrovalve opens, take the photocell sensor out of its place and approach it to a luminous source until oil comes out. Disconnect the burner and screw the drains-screw.

5.- BURNER COMBUSTION ADJUSTMENT

Observe the flame. If there is not enough combustion air, it will be dark and it will produce smoke which will close the uptake.

On the other hand, if there is too much combustion air, the flame will be white or white-blue coloured, reducing the efficiency and therefore not fulfilling the anti-pollution norms. Besides, the excess of air may difficult the ignition process.

The flame must be kind of orange coloured.

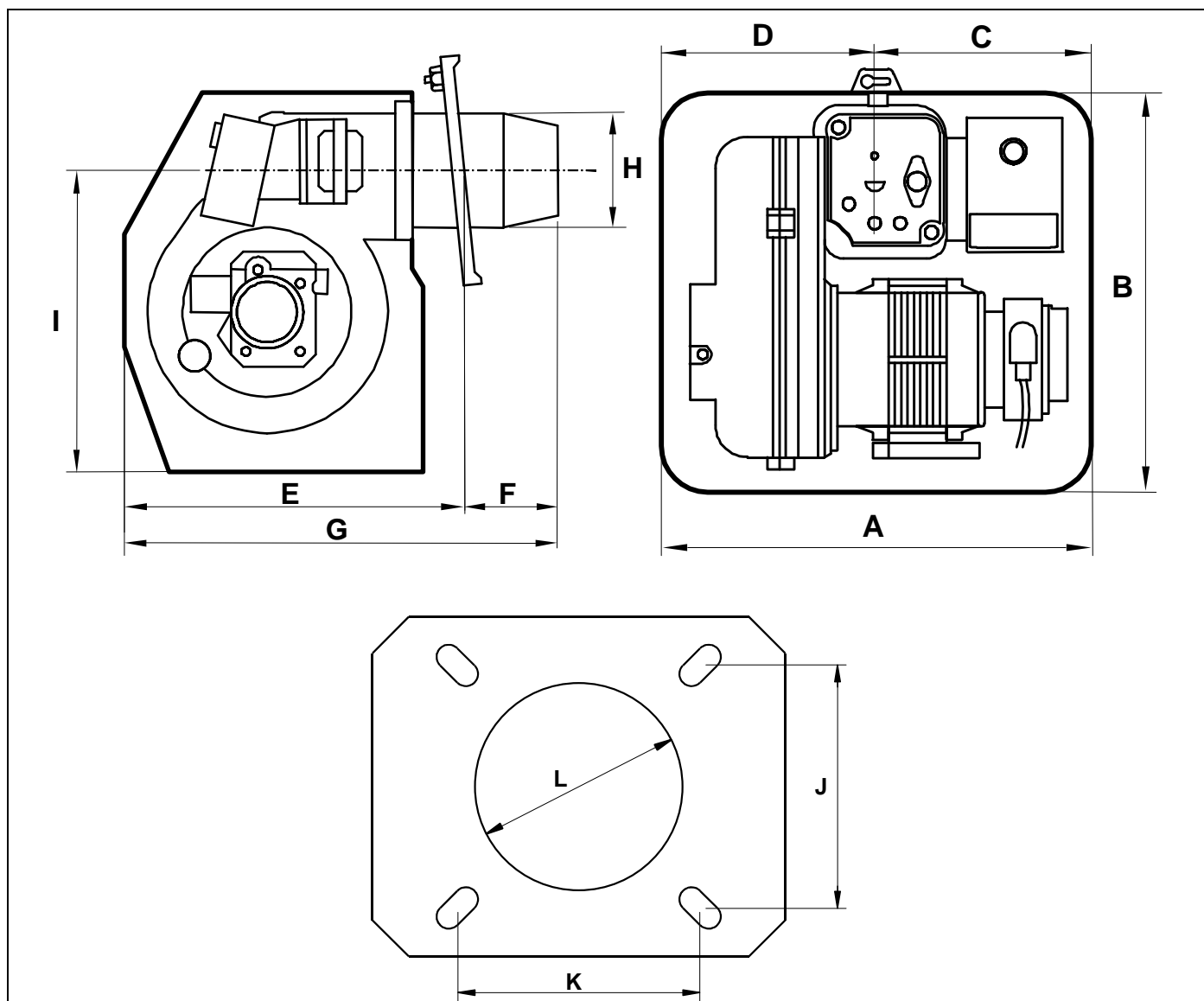
Due to the construction of the boiler, if it is difficult or impossible for you to see its flame, the combustion airflow can be set-up observing the smoke coming out from the chimney. If it is dark, the air in the burner will have to be increased and if it is white, the air in the burner will have to be decreased until there is no smoke at all.

If you are provided with a device, which verifies the composition of the combustion gases, it will be the best guide to adjust the flame, but if you do not have it, follow the preceding indications.

6.- SELECTION OF OIL NOZZLE

Go to the chart shown on page no.7 and select the correct oil nozzle in accordance with the pressure, bearing in mind that 1 Kg/h of oil approximately produces 11.86 kW.

7.- DIMENSIONS



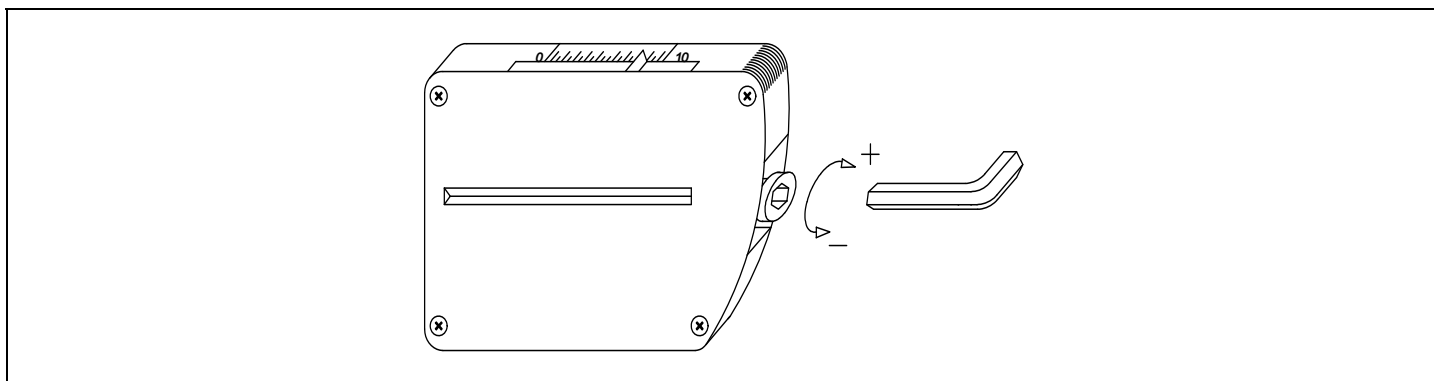
DIMENSIONS TABLE

DIMENSIONS	A	B	C	D	E	F	G	H	I	J	K	L
MEASURE (mm)	292	265	140	152	215	75	290	ø80	205	100	100	ø90

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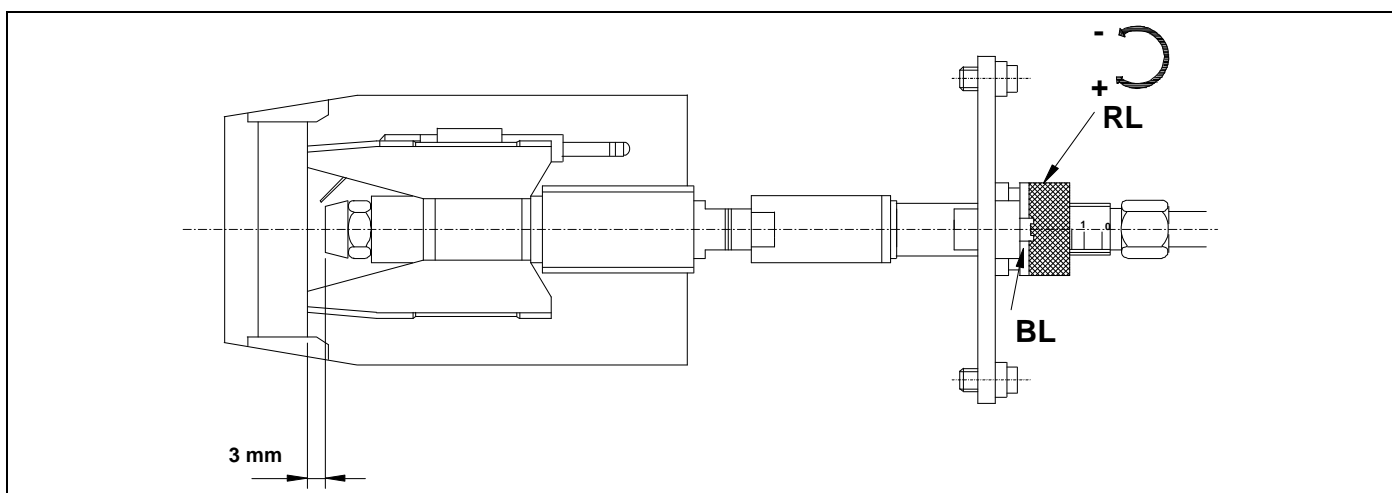
8.- PRIMARY COMBUSTION AIR ADJUSTMENT

To adjust the primary combustion air, turn the screw as shown on the drawing by means of a 6 mm. Allen wrench. To increase the airflow, turn it to the right and to decrease it, turn it to the left.



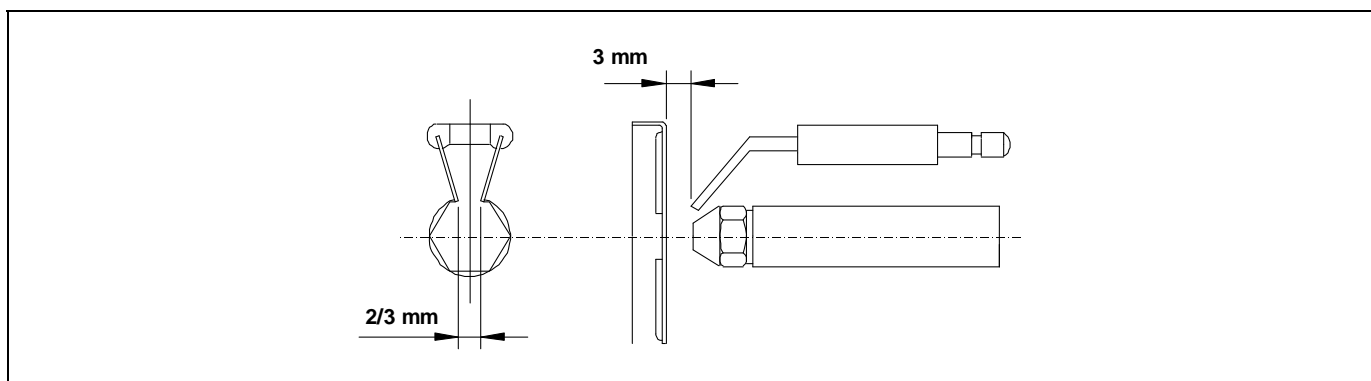
9.- COMBUSTION LINE ADJUSTMENT

To adjust the combustion line, unscrew the combustion line blocking screw "BL". Turn the line adjustment screw "RL" to the right to increase the airflow and to the left to decrease it. After the adjustment has been made, screw the combustion line blocking screw "BL".



10.- CORRECT POSITIONING OF IGNITION ELECTRODES

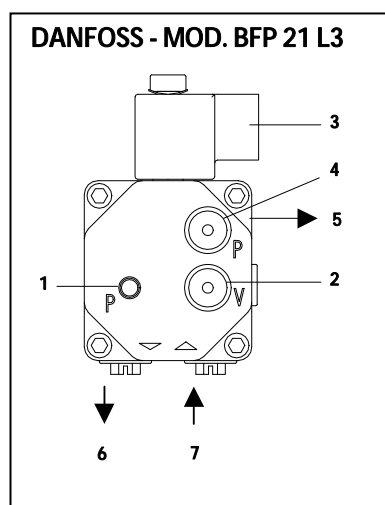
To assure a good ignition of the burner **Domestic**, it is necessary to respect the measures shown in the drawing. Besides, before mounting the flame tube again, make sure that the blocking screws of the electrodes have been fixed.



11.- OIL PRESSURE ADJUSTMENT

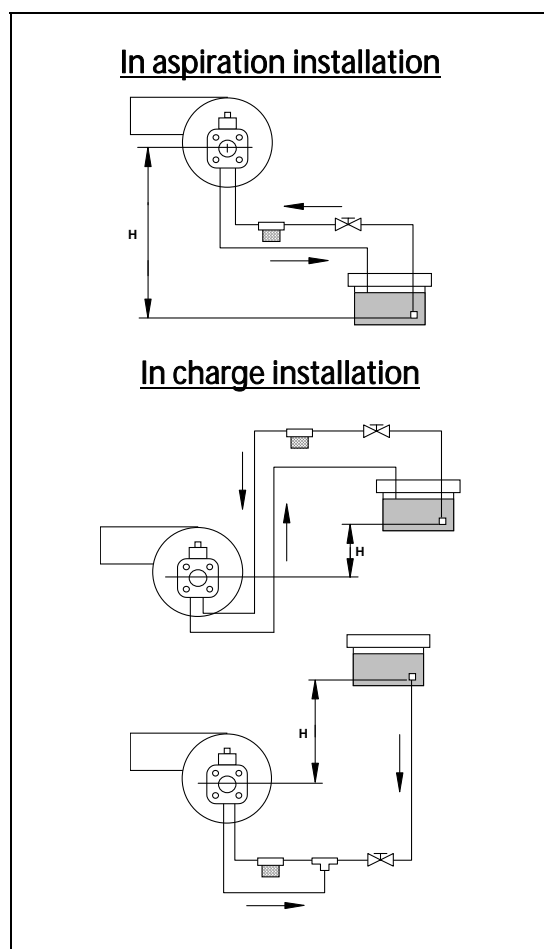
To adjust the pressure of the oil pump, turn the screw (1) to the right in order to increase it and to the left in order to decrease it.

- 1 - Pressure adjustment.
- 2 - Vacuumer nipple.
- 3 - Electrovalve.
- 4 - Manometer nipple.
- 5 - Oil outlet.
- 6 - Oil return.
- 7 - Oil inlet.



12.- OIL INSTALLATION DIAGRAMS

These diagrams and charts belong to oil line installations without reductions and with a perfect hydraulic sealed. It is highly recommended to use copper pipes. Depression of maximum 0,4 bar (30 cmHg) must not be exceeded.



In aspiration installation		
H (m)	Pipes length	
	Øint 8 mm.	Øint 10 mm.
0,0	25	60
0,5	21	50
1,0	18	44
1,5	15	38
2,0	12	32
2,5	10	26
3,0	8	20
3,5	6	16

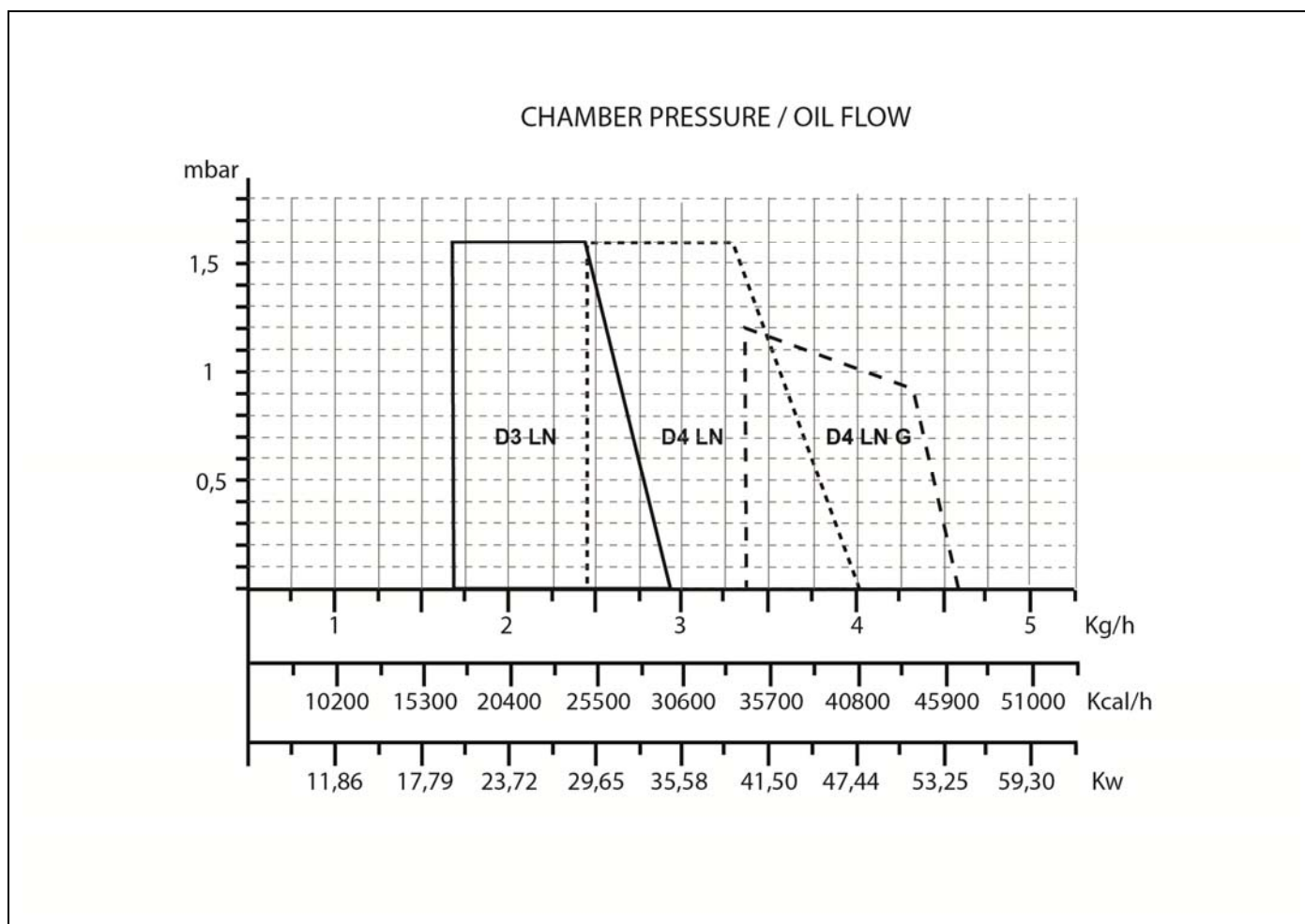
In charge installation		
H (m)	Pipes length	
	Øint 8 mm.	Øint 10 mm.
0,5	10	20
1,0	20	40
1,5	40	80
2,0	60	100

Domestic

13.- TECHNICAL DATA

MODEL	D3 LN	D4 LN	D4 LN G
Min. heat outlet Kg/h	1,7	2,4	3,6
Max. heat outlet Kg/h	2,8	4	4,6
Min. heat outlet Kw min.	20	28,4	42,6
Max. heat outlet Kw max.	33,2	47,5	54,6
Motor power	110 W		
Type of control	Mono-stage		
Electrical power	220 V - 50 Hz		
Weight Kg.	12,5		
Pre-heater	Optional		

14.- WORKING DIAGRAM



15.- OIL FLOW VERSUS NOZZLE AND PUMP PRESSURE

BURNEN MODEL	DANFOSS NOZZLE USgal/h	PUMP PRESSURE (bar)	Kg/h	BURNER POWER kW	LINE ADJUSTMENT	AIR ADJUSTMENT	CO2 Vol.%
D3 LN	0,40-60°-H	13	1.75	20.8	1.5	2.5	12-13
D3 LN	0,40-60°-H	15	1.85	22	1.5	3.5	12-13
D3 LN	0,60-80°-S	8,5	2	23.8	1,5	3	12-13
D3 LN(*)	0,60-80°-S	11.5	2.4	28.5	2	3,5	12-13
D3 LN	0,60-80°-S	12,5	2.6	30.8	3.5	7	12-13
D3 LN	0,60-80°-S	14,5	2.75	32.6	3	9	12-13
D4 LN	0.55-60°-H	13.5	2.4	28.8	1	0.5	12-13
D4 LN	0.55-60°-H	18	2.8	33.2	1.5	1	12-13
D4 LN	0.75-45°-H	11	3	35.6	2	1	12-13
D4 LN (*)	0.75-45°-H	12	3.2	38	1.5	2	12-13
D4 LN	0.75-45°-H	15	3.5	41.5	2	2	12-13
D4 LN	0.85-45°-H	15.5	4	47.5	2	6	12-13
D4 LN G	0.75-45°-H	15	3.5	41.5	2	5	12-13
D4 LN G	1.00-45°-H	11	4	47.4	2	4	12-13
D4 LN G(*)	1.00-45°-H	13	4.4	52.2	3	2.5	12-13
D4 LN G	1.00-45°-H	14	4.6	54.5	3	3.5	12-13

(*): Default setting

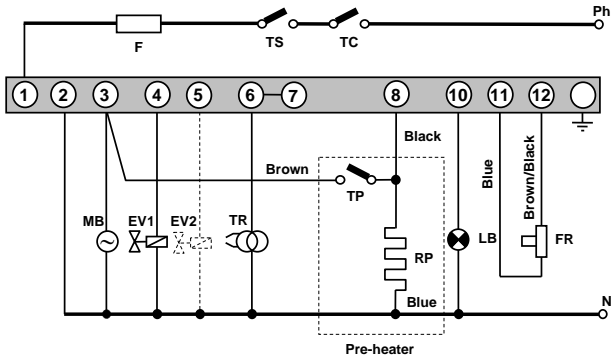
NOTE: - The oil pressure could be different to the indicated values due to the tolerance of the nozzles. The adjustment values shown in the table are orientative, these must be adjusted in each installation.

Domestic

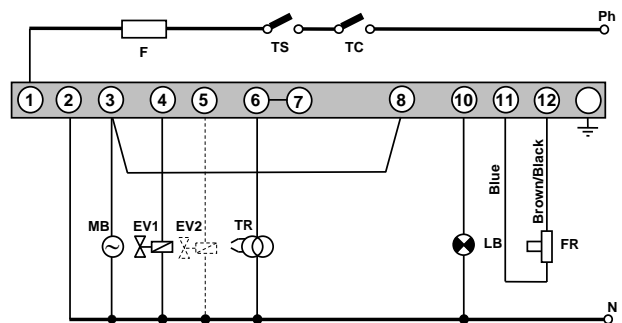
16.- ELECTRICAL DIAGRAMS

WITHOUT CONNECTOR

WITH PRE-HEATER

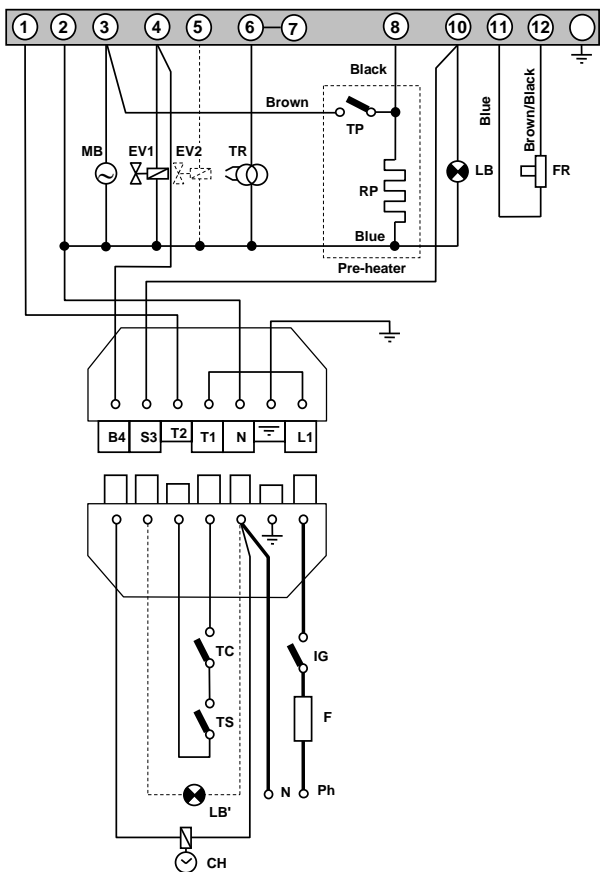


WITHOUT PRE-HEATER

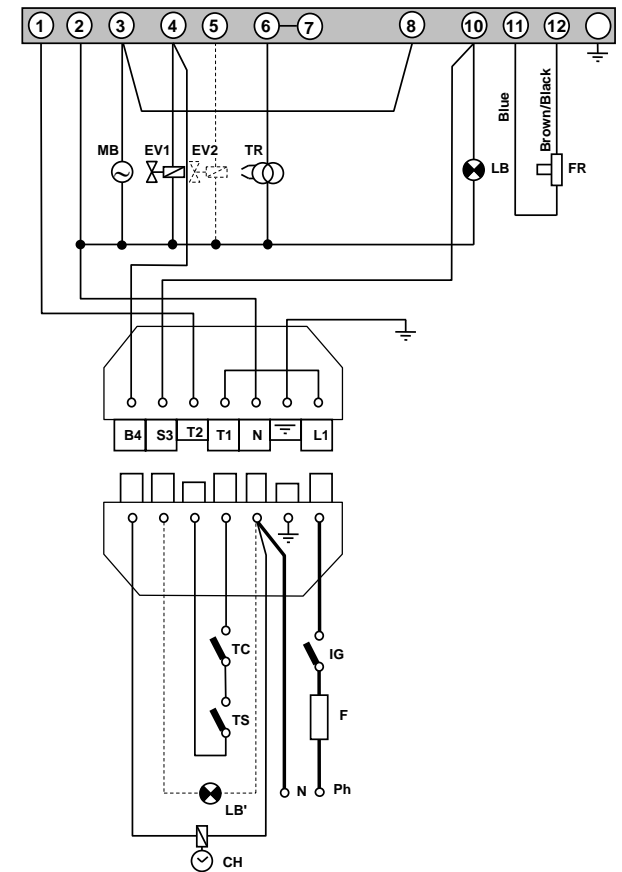


WITH CONNECTOR

WITH PRE-HEATER



WITHOUT PRE-HEATER



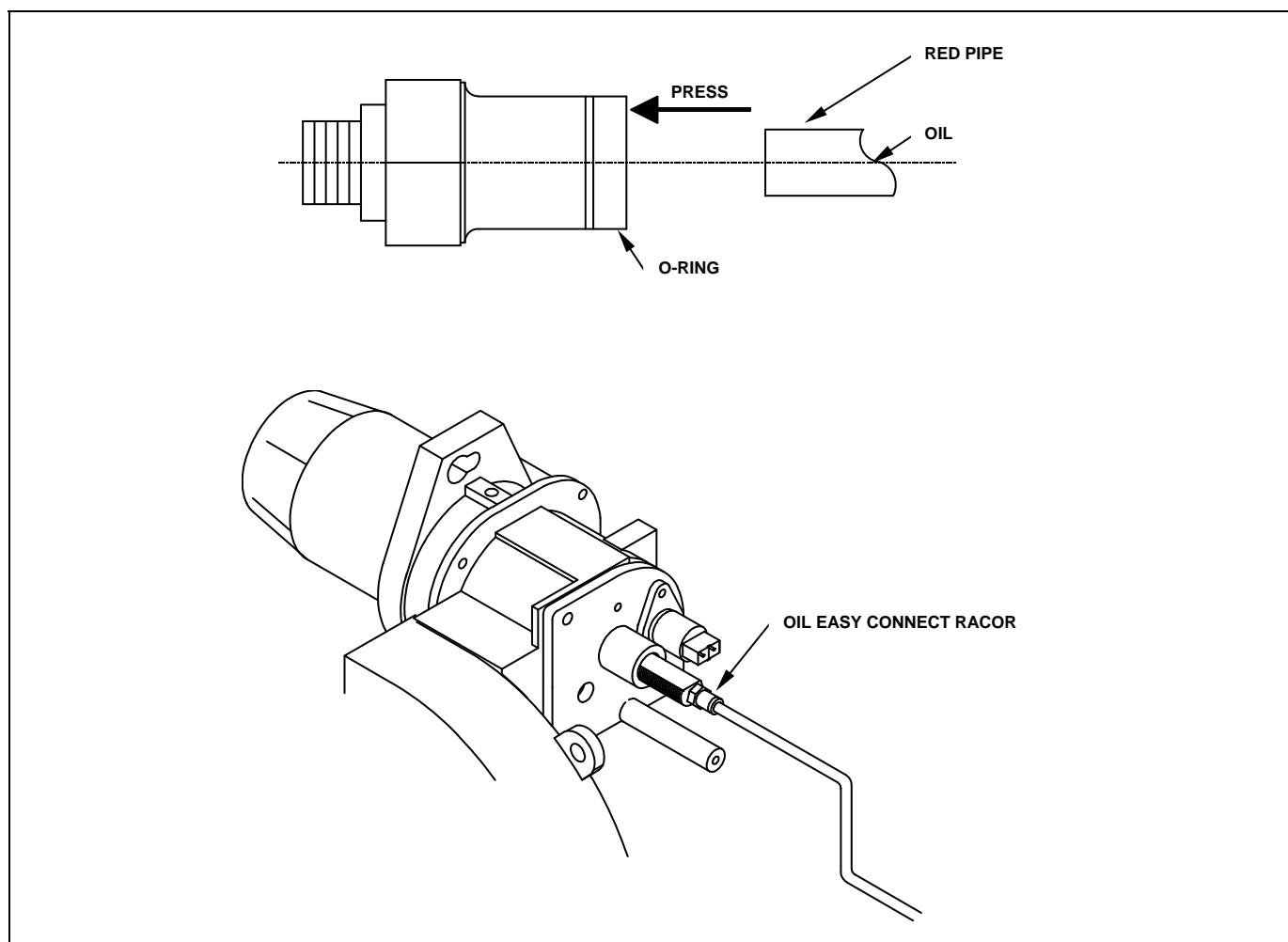
MB: Oil pump.
EV1: Electrovalve 1.
EV2: Electrovalve 2.
TR: Ignition transformer.
TP: Pre-heater thermostat.
RP: Pre-heater resistance.
LB: Blocking lamp.
FR: Photocell sensor.

Ph: Phase.
N: Neutral.
TC: Control thermostat.
TS: Safety thermostat.
LB': External blocking lamp.
CH: Hour-counter.
IG: General switch.
F: Fuse.

17.- OIL EASY CONNECTION

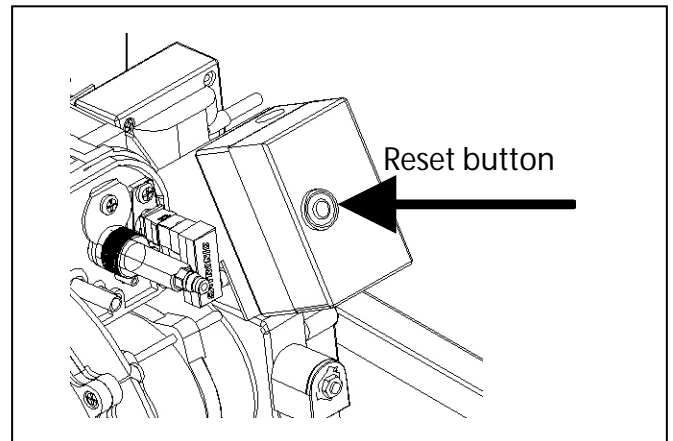
To connect and disconnect the red oil tube to the combustion line, proceed as follows:

- Press the connector o-ring in the direction of the arrow shown below, and simultaneously pull the red tube.



18.- BURNER CONTROL OPERATING SEQUENCE

The burner's LMO control box has a reset button which is the key element for resetting the burner control and activating/deactivating the diagnosis functions. The multi-colour LED on the reset button is the indicator for visual diagnosis. The button and the LED are located under the transparent cover of the reset button. During normal functioning, the various operating statuses are indicated in the form of colour codes (see the colour code table below). During ignition, the indication is as shown in the following table:



Colour code table for multi-colour indicator lights (LEDs)		
Status	Colour code	Colour
Wait time "tw", other stanby statuses	○	Off
Fuel pre-heater on	●	Yellow
Ignition phase, controlled ignition	● ○ ● ○ ● ○ ● ○ ● ○	Flashing yellow
Functioning, flame Ok	□	Green
Functioning, flame not OK	□ ○ □ ○ □ ○ □ ○ □ ○	Flashing green
External light during burner ignition	□ ▲ □ ▲ □ ▲ □ ▲ □ ▲	Red/green
Undervoltage	● ▲ ● ▲ ● ▲ ● ▲ ● ▲	Yellow/red
Failure, alarm	▲	Red
Error code output (see "Error code table")	▲ ○ ▲ ○ ▲ ○ ▲ ○ ▲ ○	Flashing red
Interface diagnosis	▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲	Flashing red light

..... Steady light
○ Off

▲ Red
● Yellow
□ Green

19.- BURNER ERROR CODE

We have already mentioned that the burner is equipped with a cut-out system, indicated by the reset button light. It may cut out accidentally, and in this case the steady red light on this button will come on. You may unblock it by pressing the button for approx. 1 second. When the burner is blocked and the steady red light is on, visual failure diagnosis may be activated, in accordance with the error code table. To enter visual failure diagnosis mode, hold down the reset button for at least three seconds.

Error code table		
Red flashing LED code	"AL" on term. 10	Possible cause
Flashes 2 times	On	No flame established when ignition safety time ends. - Fuel valves defective or dirty - Flame detector defective or dirty - Burner maladjustment, no fuel - Ignition unit defective
Flashes 4 times	On	External light during burner ignition
Flashes 7 times	On	Excessive flame loss during functioning (limited number of repetitions) - Fuel valves defective or dirty - Flame detector defective or dirty - Burner maladjustment
Flashes 8 times	On	Supervision of fuel pre-heater time
Flashes 10 times	On	Cabling fault or internal failure, output contacts, other failures

During the failure diagnosis time, the control outputs are disabled and the burner remains off. To exit failure diagnosis and activate the burner again, reset the burner control. Hold down the reset button for approx. 1 second (<3 s).

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