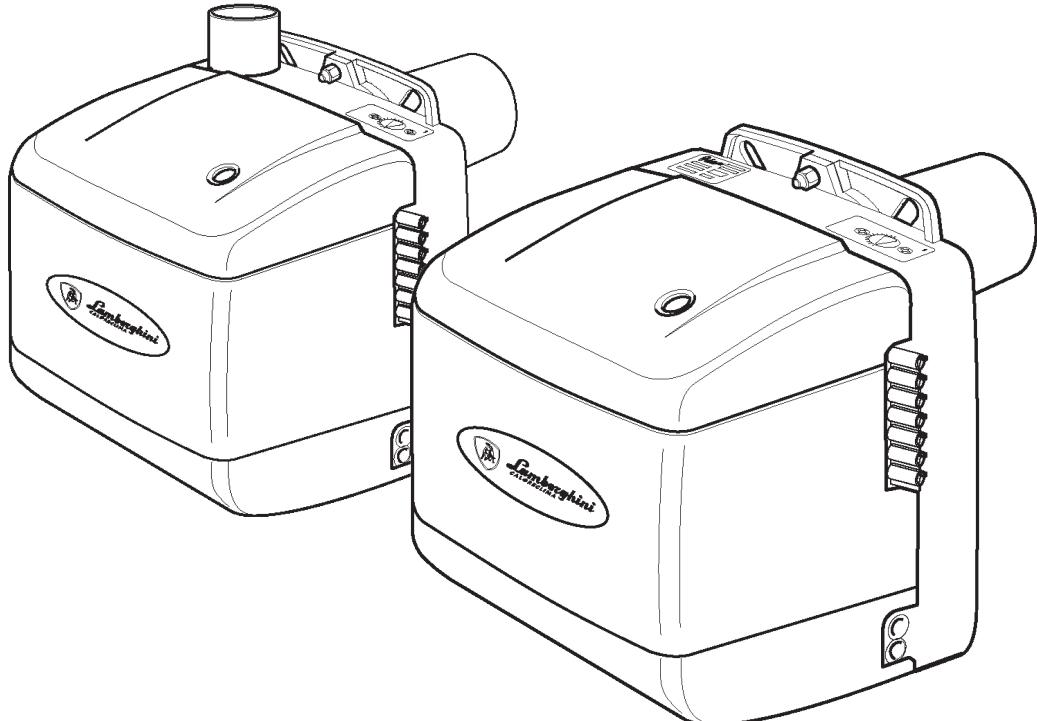




Lamborghini
CALORECLIMA

AZIENDA CERTIFICATA UNI EN ISO 9001
UNI EN ISO 9001 CERTIFIED COMPANY
СЕРТИФИЦИРОВАННАЯ КОМПАНИЯ UNI EN ISO 9001



BRUCIATORE DI GASOLIO
LIGHT OIL BURNERS
BRULEUR FIOUL DOMESTIQUE
ÖLBRENNER
QUEMADORES PARA GASÓLEO
ГОРЕЛКА НА ДИЗЕЛЬНОМ ТОПЛИВЕ

CE

ECO
3 - 3R - 3 ST - 3R ST - 5 N
5R N - 5 R N ST - 7R - 7/2

IT	UK
FR	DE
ES	RU

MANUALE DI INSTALLAZIONE E MANUTENZIONE
INSTALLATION AND MAINTENANCE MANUAL
NOTICED'INSTALLATION ET D'ENTRETIEN
INSTALLATIONS-UNDWARTUNGSSANLEITUNG
MANUAL PARA LA INSTALACIÓN Y EL MANTENIMIENTO
РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ И ТЕХНИЧЕСКОМУ
ОБСЛУЖИВАНИЮ



GENERAL STANDARDS

This manual is an integral and essential part of the product and must be given to the installer.

Read the warnings given in this manual as they supply important indications regarding installation, use and maintenance safety. Keep this manual carefully for future reference. The burner must be installed in compliance with the Standards in force, according to the manufacturer's instructions and by qualified staff. Incorrect installation can cause injury/damage to persons, animals or objects, for which the manufacturer cannot be held responsible.

This appliance must only be destined for the use for which it was expressly declared. Any other use must be considered improper and therefore dangerous. The manufacturer is not liable for any damage caused by improper, incorrect or unreasonable use.

Before carrying out any cleaning or maintenance, disconnect the appliance from the mains power supply by acting on the system switch or via the relevant shut-off elements.

In the case of breakdown and/or bad functioning of the appliance, deactivate it and do not attempt repairs or direct interventions.

Only contact qualified professional staff. Any product repairs must only be performed by an after-sales centre authorised by the manufacturer, using original spare parts. Failure to comply with the above can compromise appliance safety. In order to guarantee the efficiency of the appliance and its correct functioning, it is indispensable to follow the manufacturer's indications.

Have qualified professional staff perform periodic maintenance of the appliance. Whenever the appliance is no longer to be used, the parts that may become a potential source of danger must be made harmless.

Before commissioning the burner, have qualified staff check:
a) that the plate data are those requested by the gas electricity mains supplies;
b) that burner calibration is compatible with boiler power;
c) that the flow of combustion agent air and the evacuation of flue gases take place correctly according to Standards in force;
d) that aeration and normal maintenance of the burner are guaranteed.

Before performing any intervention that envisions disassembly of the burner or opening of the inspection access points, disconnect the electric current.

Do not deposit containers of inflammable substances in the room where the burner is situated.



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The burner room must have openings towards the outside in compliance with local Standards in force. If in doubt relative to the circulation of air, first of all we recommend that the CO₂ value is measured, with the burner functioning at maximum flow rate and the room ventilated, only via the apertures destined to feed air to the burner and then by measuring the CO₂ value again, with the door open. The value of CO₂ measured in both cases must not change in a significant manner. If there are more than one burner and fan in the same room, this test must be performed with all appliances functioning simultaneously.

Never obstruct the air apertures of the burner room, the burner fan intake apertures and any air duct or ventilation grid and external dissipations, with the purpose of preventing:- the formation of toxic/explosive gas mixtures in the air of the burner room; combustion with insufficient air, from which dangerous, costly and polluting functioning occurs.

The burner must always be protected from rain, snow and freezing.

The burner room must always be kept clean and free from volatile substances, which could be sucked inside the fan and block the interior pipes of the burner and the combustion head. Dust is extremely dangerous, especially if this can deposit on the fan blades, where it will reduce ventilation and produce pollution during combustion. The dust can also accumulate on the rear part of the flame stability disc in the combustion head and cause a poor air/fuel mixture.

The burner must be fed with the type of fuel for which it has been set-up as indicated on the data plate and in the technical features supplied in this manual. Moreover, it must be supplied with all control and safety devices requested by local regulations in force. Pay great care that no external material enters the line during installation.

Make sure that the electric power supply used for the connection is in compliance with the features indicated on the data plate and in this manual. Make an electric plant with an effective connection to an earth plant, in compliance with Standards in force. The earth cable must be a couple of cm. longer than the phase and neutral wire.

If in doubt regarding efficiency, it must be checked and controlled by qualified staff. Never exchange the neutral and phase cables. The burner can be connected to the mains electricity with a plug-socket connection only if this is equipped in a way that the coupling configuration prevents the inversion of phase and neutral. Install an omnipolar switch with opening between contacts of at least 3mm upstream from the appliance as requested by the existing legislation.

The entire electric system and in particular all cable sections, must be suitable for the maximum absorbed power value indicated on the appliance data plate and in this manual.

UK

If the burner power supply cable is faulty, it must only be replaced by qualified staff.



Never touch the burner with wet body parts or without wearing shoes.

Never stretch (force) power supply cables and keep them away from heat sources. The length of the cables used must allow the burner and any boiler door to be opened.

The electric connections must be made exclusively by qualified staff and the regulations in force on the subject of electricity must be respected. After all packaging material has been removed, control the contents and ensure that these have not been damaged in any way during transport.

If in doubt, do not use the burner and contact the supplier.

The packaging materials (wooden cages, cardboard, plastic bags, expanded materials, staples, etc...) represent a form of pollution and potential risk if left everywhere. Collect them and dispose of them in a suitable manner (in a suitable place).

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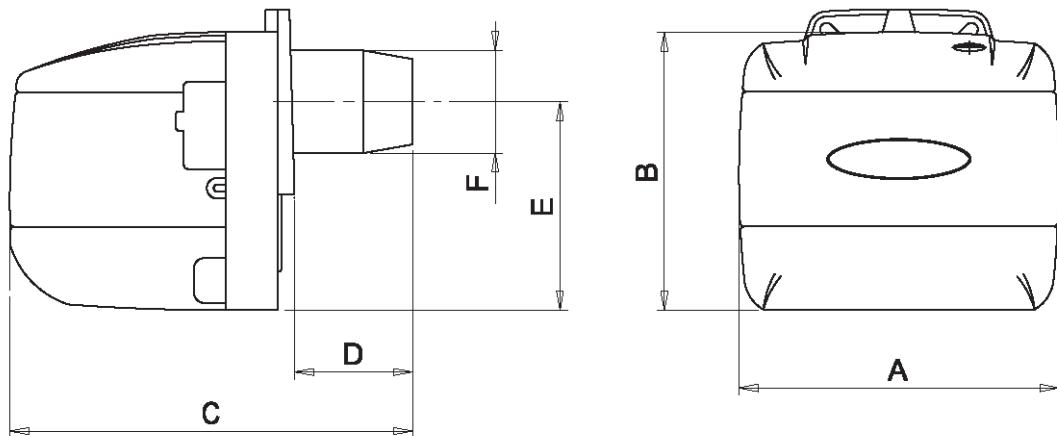
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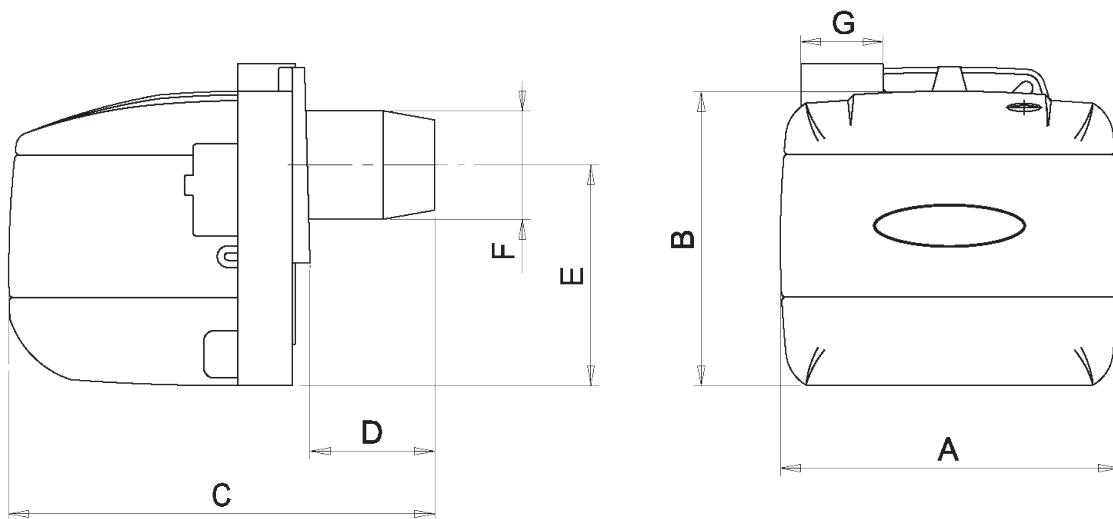
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DIMENSIONS

ECO 3 -3R - 5 N - 5 N R - 7 R - 7/2



ECO 3 ST -3R ST - 5 N ST - 5 N R ST



	A	B	C	D		E	Ø F	Ø G
				MIN	MAX			
ECO 3 ECO 3R	250	215	320	-	90	160	80	-
ECO 3 - ST ECO 3R - ST	250	215	335	-	90	160	80	60
ECO 5 N ECO 5R N	280	247	342	-	90	195	80	-
ECO 5 R N - ST	280	247	342	-	90	195	80	60
ECO 7 R - 7/2	280	247	410	40	140	195	90	-



TECHNICAL DATA

Model		ECO 3 ECO 3 ST	ECO 3 R ECO 3 R ST	ECO 5 N	ECO 5 R N ECO 5R N ST
Heat output	KW	16,6 - 35,6	14,2 - 35,6	29,6 - 59,3	30,8 - 59,3
Flow rate	kg/h	1,4 - 3,0	1,2 - 3,0	2,5 - 5,0	2,6 - 5,0
Motor electric power supply	W	100	100	100	100
Preheater	W	-	110	-	110
Max current consumption	A	2,0	2,5	1,0	2,8
Weight	kg	10,5	10,7	11,3	11,5
Functioning type		On / Off			
Fuel		Light oil			
Max. viscosity at 20°C		1,5 °E - 6 CSt - 41 sec; R1			
Power supply	V / Hz	230 / 50-60			
Ignition transformer power supply	V / A	230-240 / 0,25 (50/60 Hz)		230-240 / 0,15 (50/60 Hz)	
Ignition transformer (voltage / secondary current)	kV/mA	15 / 40		26/35	

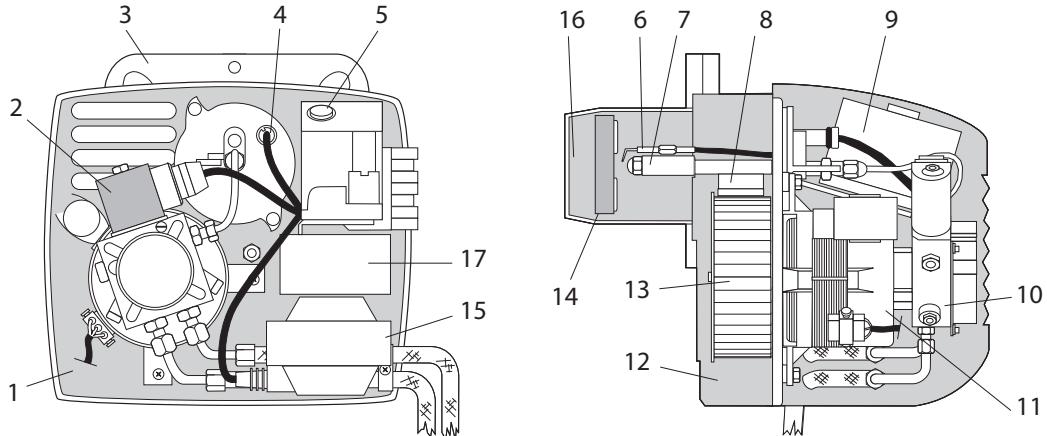
Modello		ECO 7 R	ECO 7/2
Heat output	KW	52,2 - 86,6	47,4 - 86,6
Flow rate	kg/h	4,4 - 7,3	4,0 - 7,3
Motor electric power supply	W	100	
Preheater	W	110	--
Max current consumption	A	2,8	2,3
Weight	kg	12	15,8
Functioning type		On / Off	Two stages
Fuel		Light oil	
Max. viscosity at 20°C		1,5 °E - 6 CSt - 41 sec; R1	
Power supply	V / Hz	230 / 50-60	230 / 50
Ignition transformer power supply	V / A	230-240 / 0,15 (50/60 Hz)	230-240 / 1,2 (50 Hz)
Ignition transformer (voltage / secondary current)	kV/mA	26/35	10 / 20

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MAIN COMPONENTS

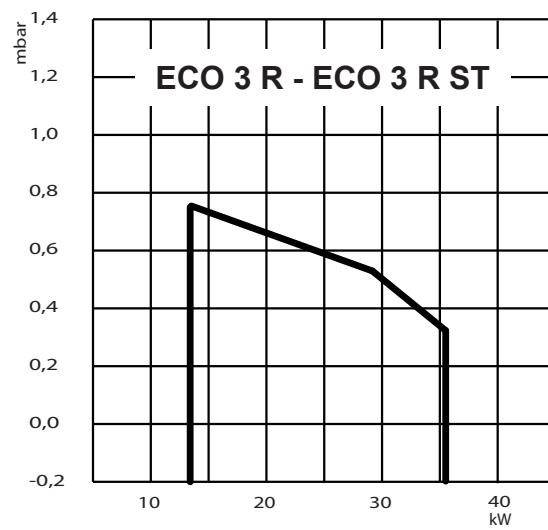
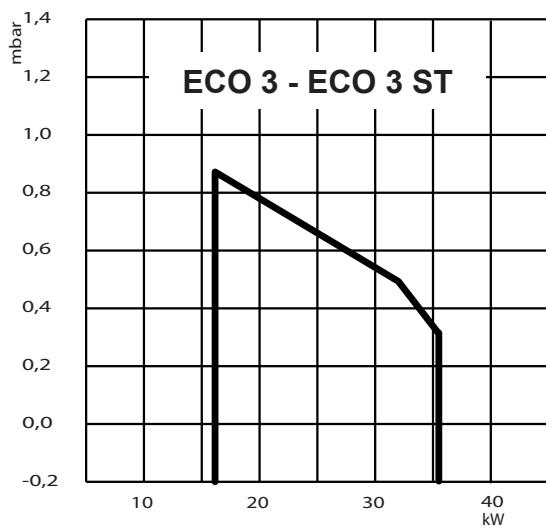


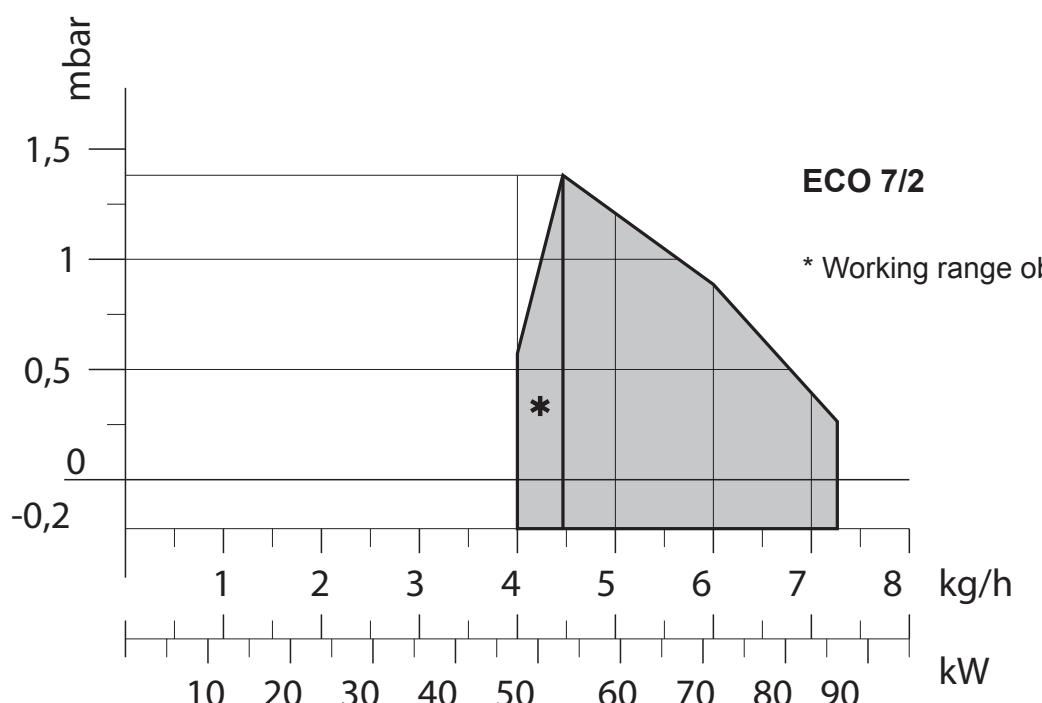
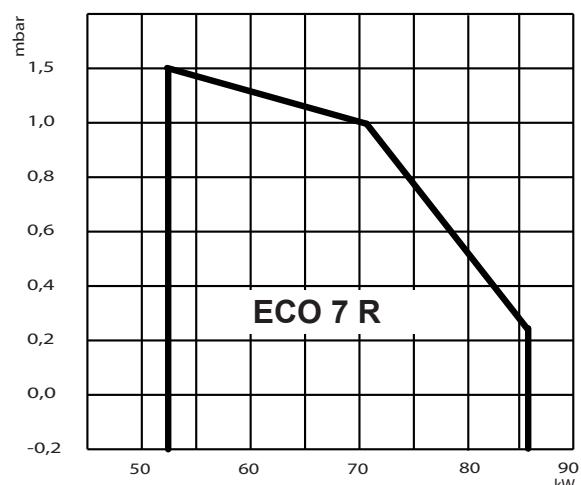
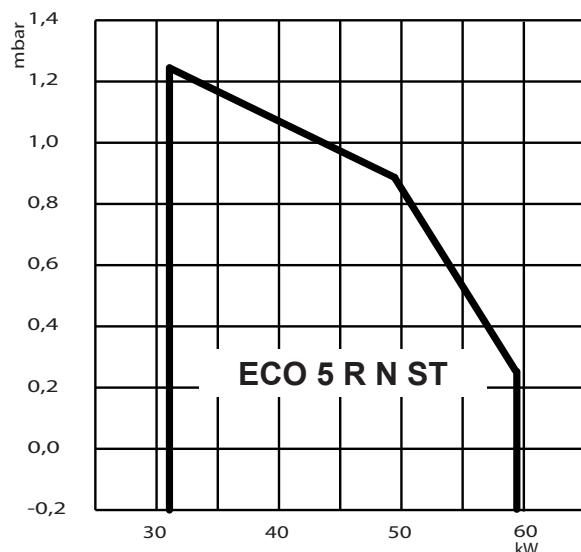
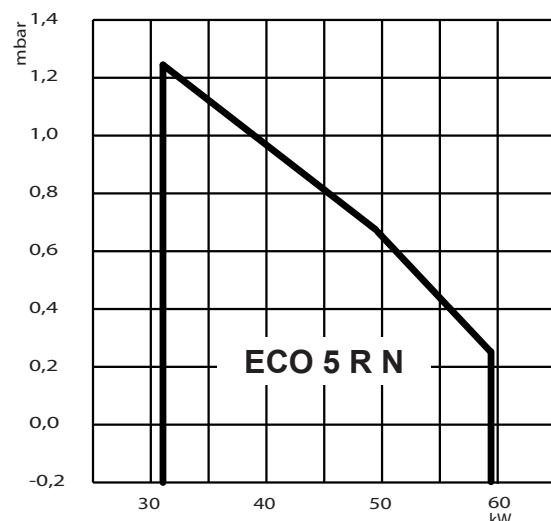
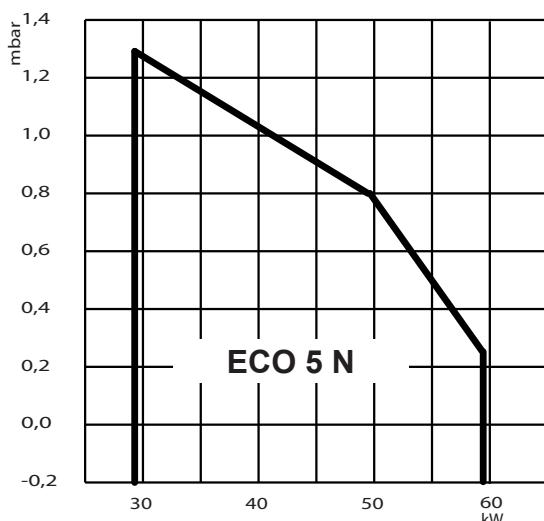
LEGENDA

- | | | |
|--|--------------------|---------------------------------|
| 1 Components plate | 8 Air damper | 15 Transformer |
| 2 Solenoid valve | 9 Control unit | 16 Flow nozzle |
| 3 Mounting flange | 10 Pump | 17 Air servomotor
(only 7/2) |
| 4 Photoresistance | 11 Motor | |
| 5 Reset button | 12 Burner body | |
| 6 Electrodes | 13 Fan | |
| 7 Nozzle line (with preheater mod. R.) | 14 Combustion head | |

WORK CURVES

The curves shown in the diagram were obtained by performing combustion tests in accordance with the specifications and characteristics of fire required by law.




ECO 7/2

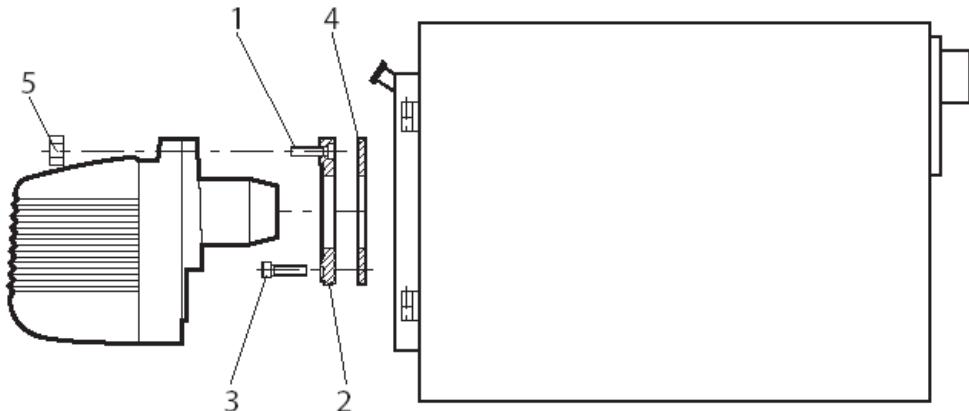
 * Working range obtainable in
 1st stage.



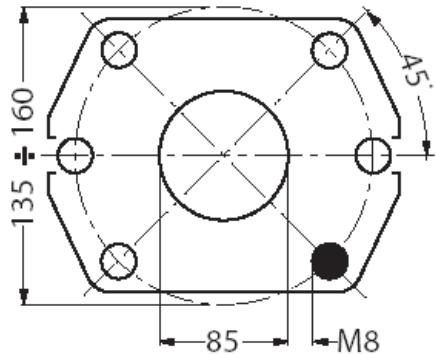
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BOILER ASSEMBLY

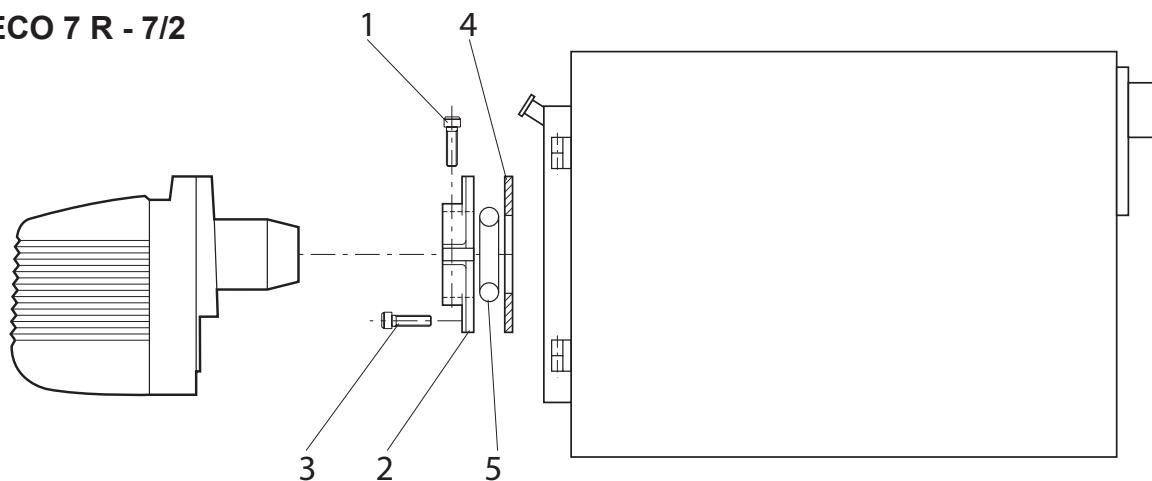
ECO 3 - 3 R - 3 ST - 3 R ST - 5 N - 5N R - 5 N R ST



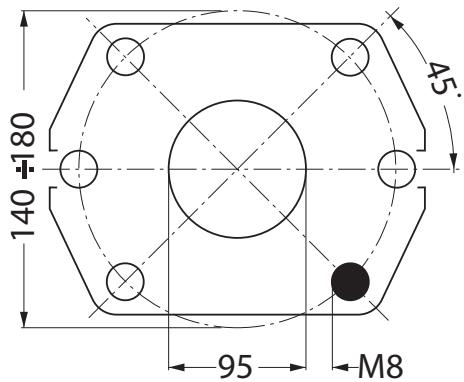
Insert screw 1 (M8 x 30) in flange 2 - Fasten flange 2 onto Boiler with screws 3 (N° 4 screws M8 x 20) placing the insulation gasket 4. Insert burner into flange/boiler and fasten to screw 1 with nut 5.



ECO 7 R - 7/2



Fix the flange 2 to the boiler with 4 screws 3 (M8 x 25), interposing the insulating seal 4 and the insulating cord 5 as shown. Fit the burner to the flange/boiler and tighten the screw 1 on the flange thus locking the burner.



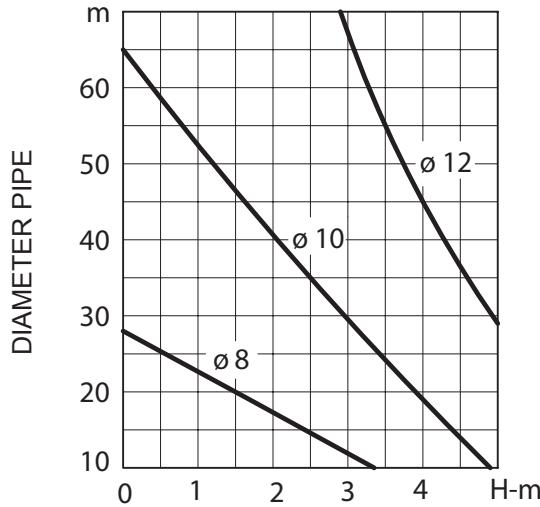
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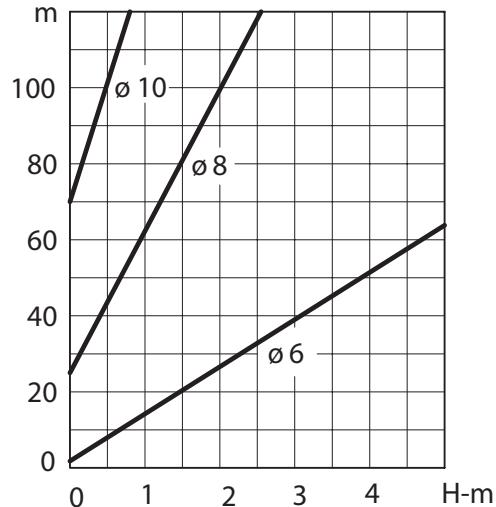
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FUEL FEED PIPES

ASPIRATED SYSTEM



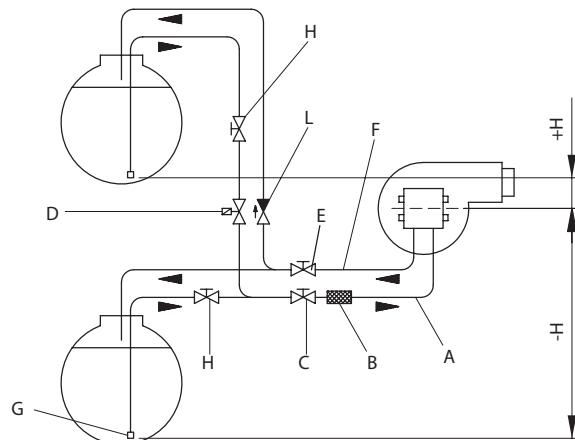
GRAVITY-DROP SYSTEM



Diagrams refer to light oil with max viscosity 1.5°E (6 cSt) at 20°C.

Key

- A Fuel aspiration line
- B Fuel filter
- C Fuel aspiration line gate
- D Flow-stop solenoid valve
- E Return line gate
- F Return line
- G Bottom valve
- H Rapid on-off gate with remote control
- L One-way check valve



LMO 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.

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EQUIPMENT STATE INDICATORS

Description

Condition	Colour sequence
Standby, other intermediate states	No light
Fuel preheating "on", waiting time 5s.max	Yellow
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	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 LMO EQUIPMENT FAULTS AND LOCK OUT

List operating anomalies	
Visual indication	Possible causes
2 flashes **	No flame signal - Faulty fuel valves - Faulty flame detector - Incorrect burner setting, no fuel - No ignition
3 flashes ***	Not used
4 flashes ****	Stray light on ignition
5 flashes *****	Not used
6 flashes *****	Not used
7 flashes *****	No flame signal during operation - Faulty fuel valves - Faulty flame detector - Incorrect burner setting, no fuel
8 flashes *****	Anomalies in fuel preheating time
9 flashes *****	Not used
10 flashes *****	Incorrect electrical connection or damage to equipment



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WIRING DIAGRAM

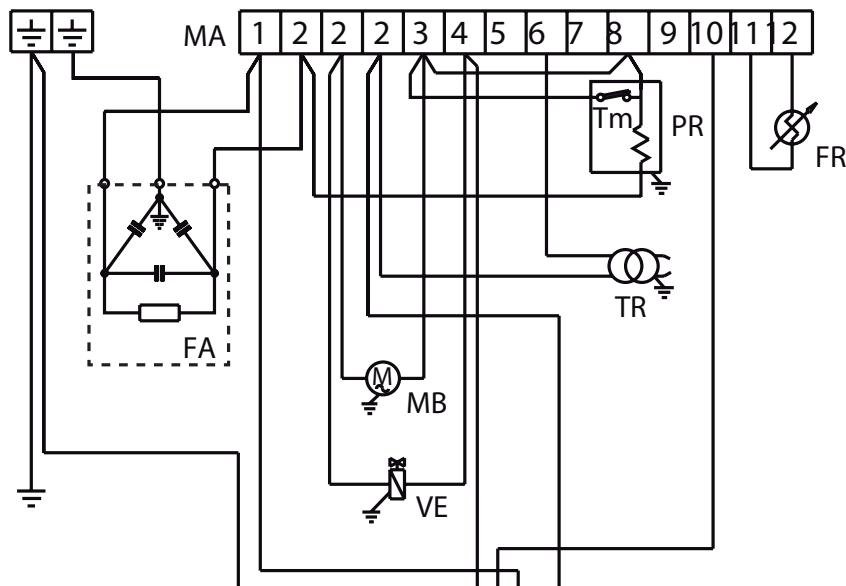
The wiring scheme to be carried out by technician are:

- Power Supply Line
- Thermostats Line
- Eventual blocking lamp and/or hour-meter

WARNING:

- Do not invert the neutral with the phase.
- Make the connection to an efficient earthing system.
- Bridge 3-8 on base is found only on versions without preheater.

ECO 3 - 3R - 3 ST 3 3 R ST - 5 N - 5 R N - 5 R N ST - 7 R



Key

CO Hour-meter (possible)

F Fuse

FA Anti-interference filter

FR Photoresistance

IG Main switch

LS Lock-out warning light (possible)

MA Control unit terminal board

MB Burner motor

PB Burner connector

PR Preheater (only mod.R)

SC Plug

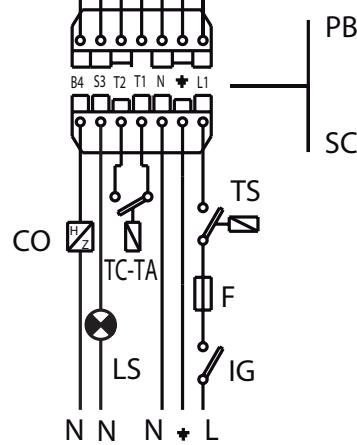
TA-TC Boiler environment thermostat

TR Ignition transformer

TS Safety thermostat

Tm Minimum thermostat

VE Solenoid valve

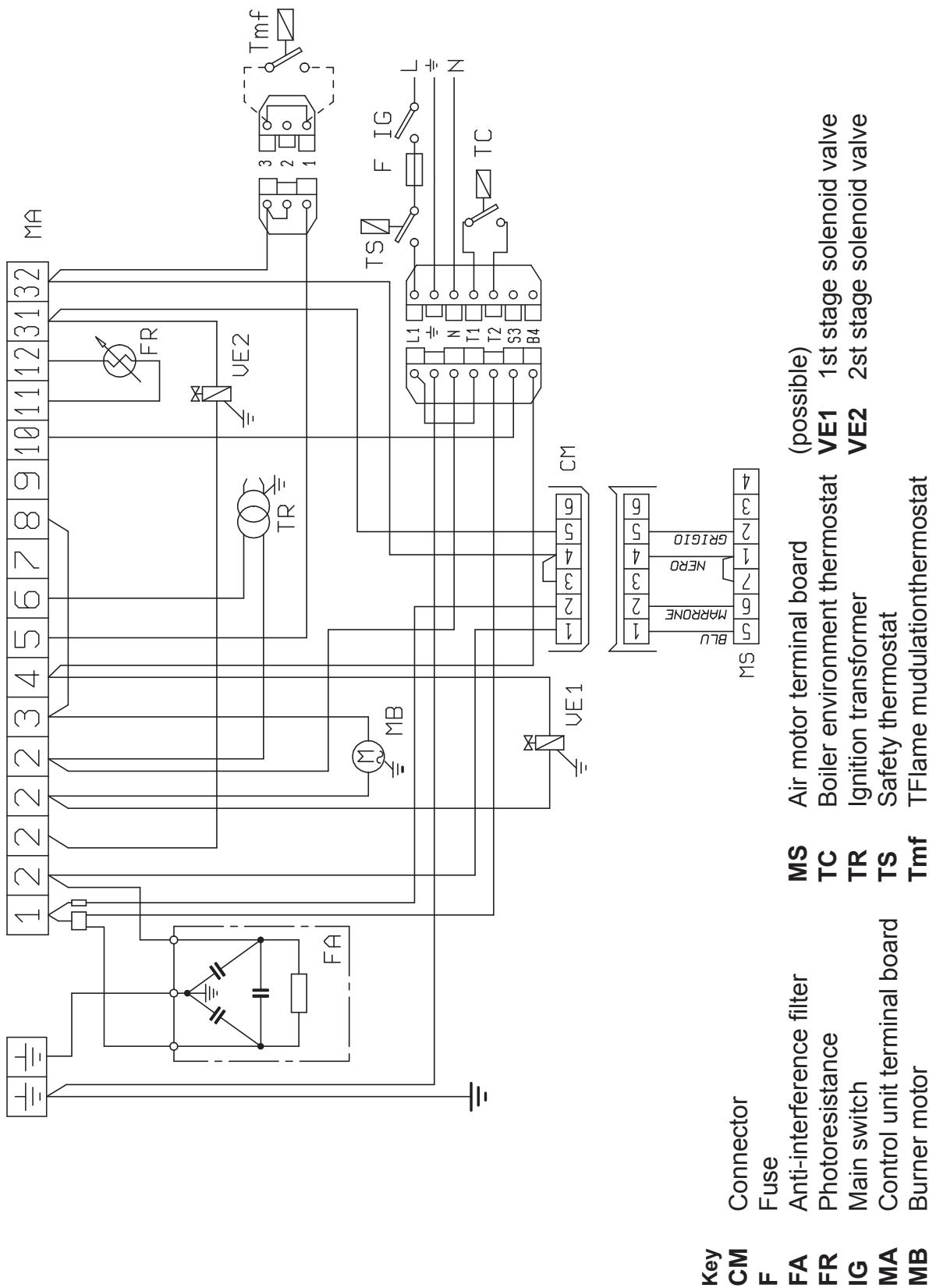


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ECO 7/2



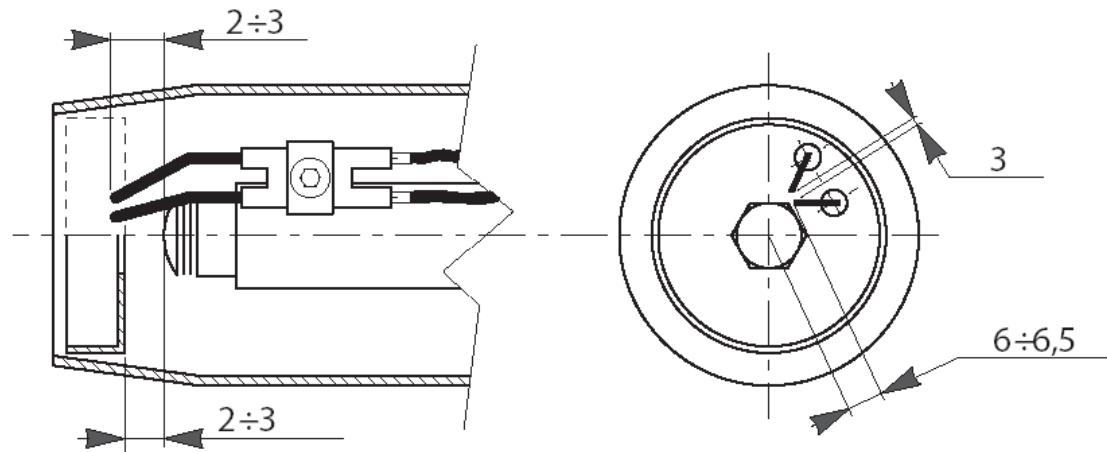


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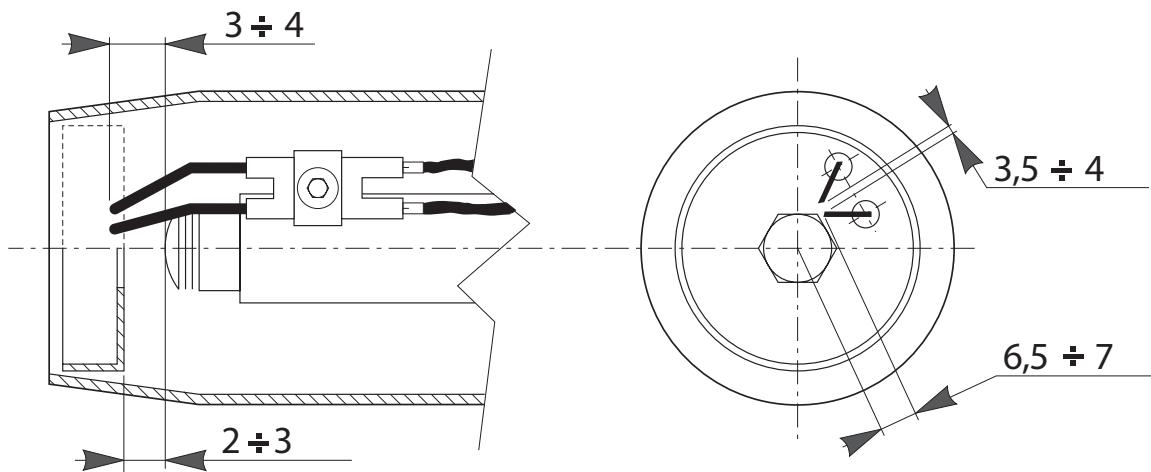
ELECTRODES - DEFLECTOR SETTING

After having installed the nozzle, check the correct position of the electrodes and deflector according to the following levels. It is adviseable to check levels after every intervention on head.

ECO 3 - 3R - 3 ST 3 3 R ST - 5 N - 5 R N - 5 R N ST - 7 R

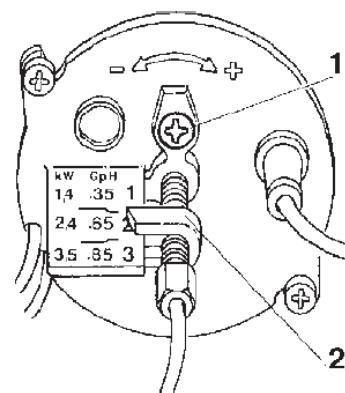


ECO 7/2



HEAD COMBUSTION ADJUSTMENTS

Head adjustment is made by the screw 1, as for indications of index 2.



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NOZZLE CHOICE

Inside every PUMP/NOZZLE PRESSURE box there are two values. The flow rate in kg/h is expressed at the top, in kW at the bottom.

INSTALLING NOZZLE.

Once the nozzle adapt to the boiler power has been chosen proceed with its mounting onto the burner following the instructions given in the paragraph "MAINTENANCE" (Fig. A, B, C, C1).

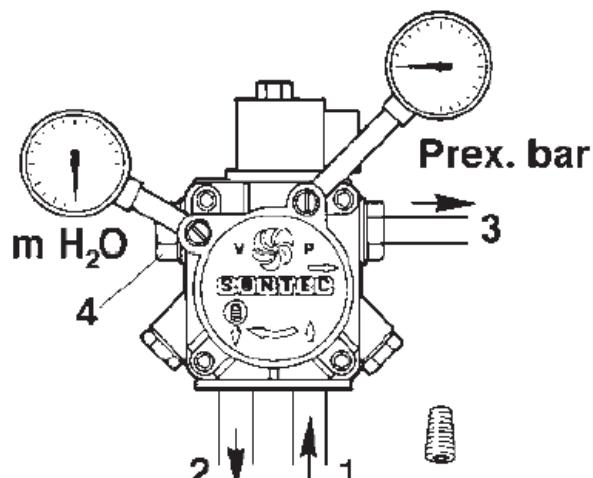
GPH	Bar												
	8	9	10	11	12	13	14	15	16	17	18	19	20
0,40	1,36	1,44	1,52	1,59	1,67	1,73	1,80	1,86	1,92	1,98	2,04	2,10	2,15
	16,1	17,1	18,0	18,9	19,8	20,5	21,3	22,1	22,8	23,5	24,2	24,9	25,5
0,50	1,70	1,80	1,90	1,99	2,08	2,17	2,25	2,33	2,40	2,48	2,55	2,62	2,69
	20,2	21,3	22,5	23,6	24,7	25,7	26,7	27,6	28,5	29,4	30,2	31,1	31,9
0,60	2,04	2,16	2,28	2,39	2,50	2,60	2,70	2,79	2,88	2,97	3,06	3,14	3,22
	24,2	25,6	27,0	28,3	29,7	30,8	32,0	33,1	34,2	35,2	36,3	37,2	38,2
0,65	2,21	2,34	2,47	2,59	2,71	2,82	2,92	3,03	3,12	3,22	3,31	3,41	3,49
	26,2	27,8	29,3	30,7	32,1	33,4	34,6	35,9	37,0	38,2	39,3	40,4	41,4
0,75	2,55	2,70	2,85	2,99	3,12	3,25	3,37	3,49	3,61	3,72	3,82	3,93	4,03
	30,2	32,0	33,8	35,5	37,0	38,5	40,0	41,4	42,8	44,1	45,3	46,6	47,8
0,85	2,89	3,06	3,23	3,39	3,54	3,68	3,82	3,96	4,09	4,21	4,33	4,45	4,57
	34,3	36,3	38,3	40,2	42,0	43,6	45,3	47,0	48,5	49,9	51,4	52,8	54,2
1,00	3,40	3,61	3,80	3,99	4,16	4,33	4,50	4,65	4,81	4,96	5,10	5,24	5,37
	40,3	42,8	45,1	47,3	49,3	51,4	53,4	55,2	57,0	58,8	60,5	62,1	63,7
1,10	3,74	3,97	4,18	4,38	4,58	4,77	4,95	5,12	5,29	5,45	5,61	5,76	5,91
	44,4	47,1	49,6	51,9	54,3	56,6	58,7	60,7	62,7	64,6	66,5	68,3	70,1
1,20	4,08	4,33	4,56	4,78	5,00	5,20	5,40	5,59	5,77	5,95	6,12	6,29	6,45
	48,4	51,4	54,1	56,7	59,3	61,7	64,0	66,3	68,4	70,6	72,6	74,6	76,5
1,25	4,25	4,50	4,75	5,00	5,20	5,40	5,60	5,80	6,00	6,20	6,35	6,55	6,70
	50,4	53,4	56,3	59,3	61,7	64,0	66,4	68,8	71,2	73,5	75,3	77,7	79,5
1,35	4,59	4,87	5,13	5,38	5,62	5,85	6,07	6,28	6,49	6,69	6,88	7,07	7,26
	54,4	57,8	60,8	63,8	66,7	69,4	72,0	74,5	77,0	79,3	81,6	83,9	86,1
1,50	5,10	5,41	5,70	5,90	6,24	6,50	6,75	6,98	7,21	7,43	7,65	7,86	8,06
	60,5	64,2	67,6	70,0	74,0	77,1	80,1	82,8	85,5	88,1	90,7	93,2	95,6
1,65	5,61	5,95	6,27	6,58	6,87	7,15	7,42	7,68	7,93	8,18	8,41	8,64	8,87
	66,5	70,6	74,4	78,0	81,5	84,8	88,0	91,1	94,1	97,0	99,7	102,5	105,2
1,75	5,95	6,31	6,65	6,98	7,29	7,58	7,87	8,15	8,41	8,67	8,92	9,17	9,41
	70,6	74,8	78,9	82,8	86,5	89,9	93,3	96,7	99,7	102,8	105,8	108,8	111,6
2,00	6,80	7,21	7,60	7,97	8,33	8,67	8,99	9,31	9,61	9,91	10,20	10,48	10,75
	80,7	85,5	90,1	94,5	98,8	102,8	106,6	110,4	114,0	117,5	121,0	124,3	127,5
2,25	7,65	8,15	8,55	8,97	9,37	9,75	10,12	10,47	10,85	11,15	11,47	11,79	12,09
	90,7	96,7	101,4	106,4	111,1	115,6	120,0	124,2	128,7	132,2	136,0	139,8	143,4
2,50	8,50	9,01	9,50	9,97	10,41	10,83	11,24	11,64	12,02	12,39	12,75	13,10	13,44
	100,8	106,9	112,7	118,2	123,5	128,4	133,3	138,1	142,6	147,0	151,2	155,4	159,4
3,00	10,20	10,82	11,40	11,96	12,49	13,00	13,49	13,96	14,42	14,87	15,30	15,72	16,12
	121,0	128,3	135,2	141,9	148,1	154,2	160,0	165,6	171,0	176,4	181,5	186,4	191,2
3,50	11,90	12,62	13,30	13,95	14,57	15,17	15,74	16,29	16,83	17,34	17,85	18,34	18,81
	141,1	149,7	157,7	165,5	172,8	179,9	186,7	193,2	199,6	205,7	211,7	217,5	223,1
4,00	13,60	14,42	15,20	15,94	16,65	17,33	17,99	18,62	19,23	19,82	20,40	20,95	21,50
	161,3	171,0	180,3	189,1	197,5	205,5	213,4	220,8	228,1	235,1	242,0	248,5	255,0

PUMP PRESSURE ADJUSTMENT

ECO 3 - 3R - 3 ST 3 3 R ST - 5 N - 5 R N - 5 R N ST - 7 R

The pump pressure is pre-set during production at 12 bar. For controlling pressure use an oil bathed manometer.

The pressure can be adjusted from 11 to 14 bar. From 7 to 14 bar for model R.

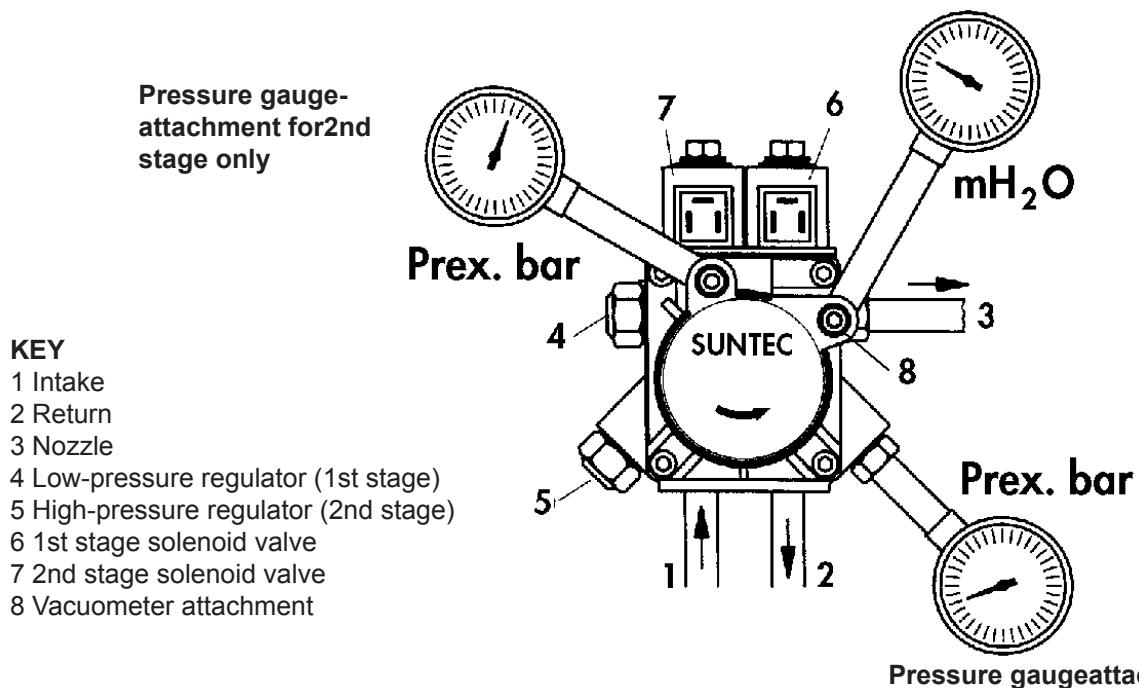


KEY

- 1 Intake
- 2 Return
- 3 Nozzle
- 4 Pressure Adjustment

ECO 7/2

The pump is preadjusted at the factory to 10 bar for the 1st stage and 18 bar for the 2nd stage. Use an oil-bath pressure gauge to check the pressure. The recommended operating pressure is between 10 and 20 bar.



Pressure gauge attachment for 1st and 2nd stage

UK

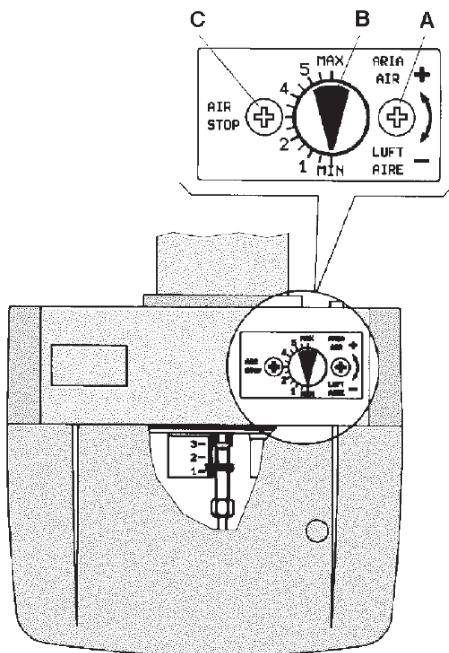


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AIR DAMPER ADJUSTMENT

ECO 3 - 3R - 3 ST 3 3 R ST - 5 N - 5 R N - 5 R N ST - 7 R

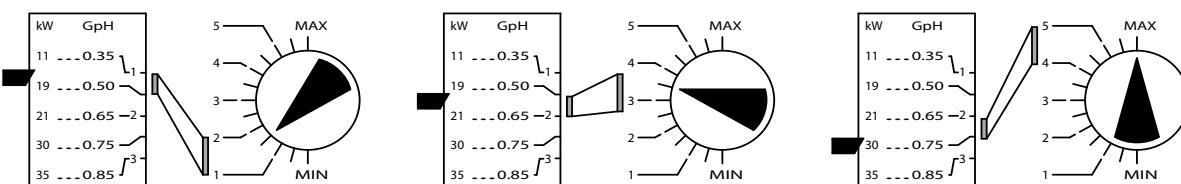
After having untightened the screw C, whith the screw A it obtains the air combustion adjustment, according to the indications of index B. Block the screw C when the calibration is effected.



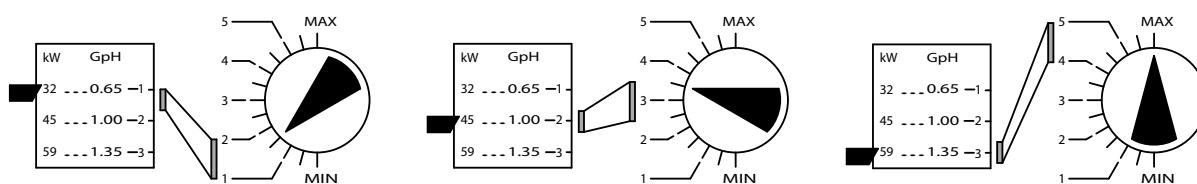
Orientative positions of deflector and air flap according to various Boiler power levels (kW) and nozzle size (GPH).

It is necessary to make combustion tests and to turn the air shaft regulating screw for adjusting the air quantity.

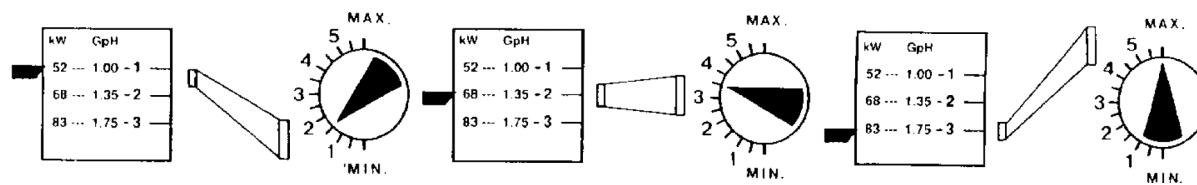
ECO 3 - 3R - 3 ST 3 3 R ST



ECO 5 N - 5 R N - 5 R N ST



ECO 7 R



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AIR SEVOMOTOR ADJUSTMENT

ECO 7/2

The geared motor limit switch and auxiliary contacts are triggered by easily accessible adju-stable cams, which can be set against o graduated scale

SETTING THE CONTACT TRIGGERING POINT

General information:

CAM V (2 Stage) - Cam controlling air position (max. firing rate with both stages in operation).

CAM IV (1 Stage) - Cam controlling minimum air flow condition (min. firing rate 1st stage only in operation).

CAM II-III (MV1-MV2) - Auxiliari cam

RECOMMENDATIONS TO SET UP THE GEARED MOTOR

The geared motor is set up as follows:

CAM V (2 Stage) : is set on 5.

CAM IV (1 Stage) : is set on 1.

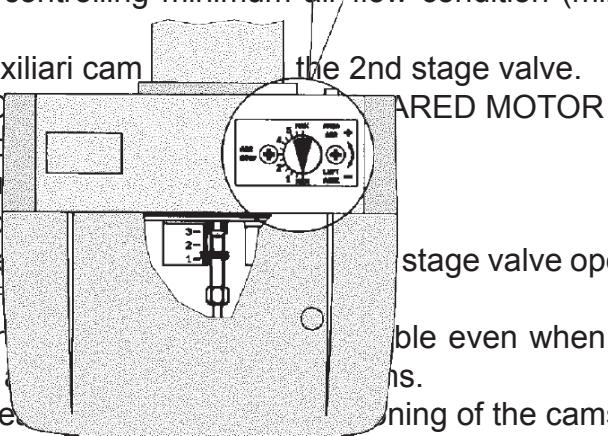
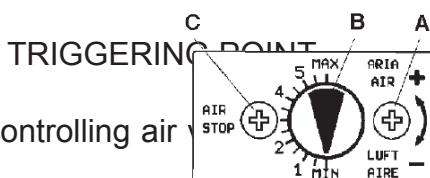
CAM II-III (MV1-MV2): is set on 1.

shut-off valve is at 60°÷80°.

Changes to this calibration

operation by acting on the

Tightening the screws increas-



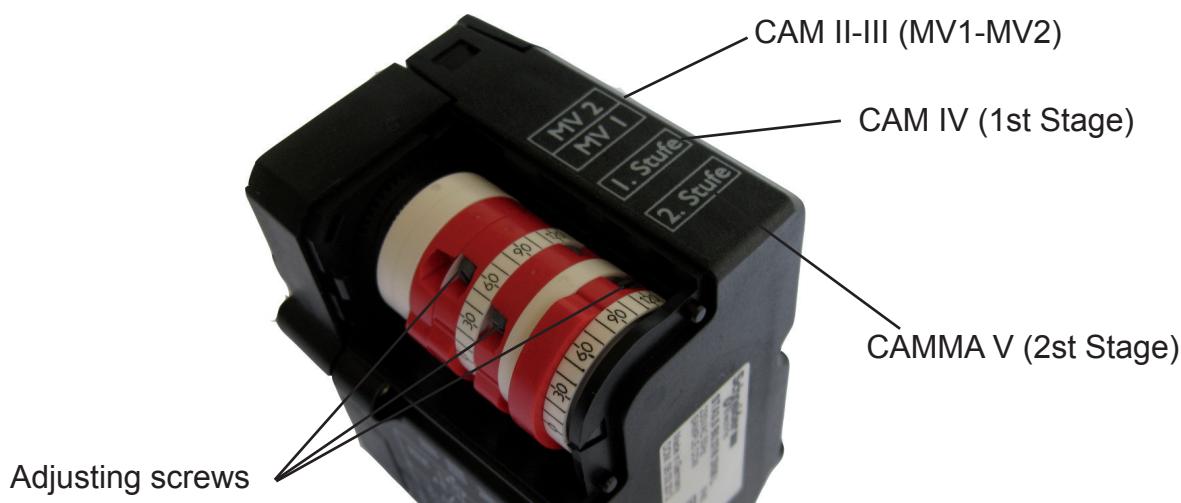
stage valve opens when the air

shut-off valve is at 60°÷80°.

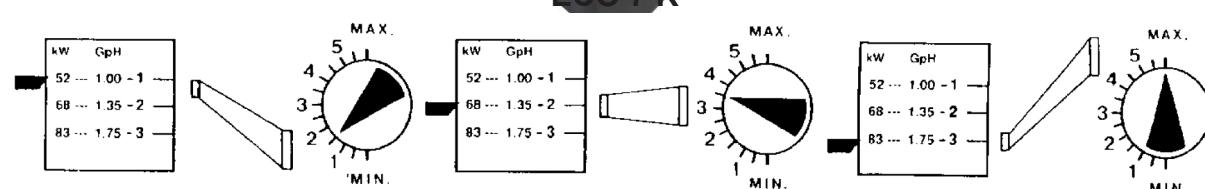
Changes to this calibration

operation by acting on the

Tightening the screws increases the setting of the cams.



Adjusting screws



UK



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COMBUSTION CONTROL

In order to obtain the best combustion performance and efficiency, and for respect of the environment, checks and adjustment of the combustion must be carried out, and with appropriate tools. Basic values to be considered are:

—CO₂ indicates the amount of excess air during combustion; if air is increased, CO₂ % values decrease, and if combustion air is decreased, CO₂ % values increase.

—SMOKE SCALE (Bacharach) indicates that solid un-burnt particles are present in the smoke. If N°2 on the BH scale is exceeded the nozzle must be checked for faults and that it is adapt to the burner and boiler (trade, type, pulverization angle). Usually the BH scale number tends to decrease, increasing pump pressure, in this case keep the increasing combustion levels under control.

—SMOKE TEMPERATURE is a level which indicates heat loss through the chimney; higher the temperature, greater is the loss and lower combustion efficiency. If the temperature is too high the quantity of burned light oil needs to be lowered.

IMPORTANT: existing laws in some countries can require a different adjustment to that given here and may also have different parameters. ECO burners are designed to meet the toughest international laws on energy saving and respect of the environment.

MAINTENANCE

Most components can be checked by removing the cover. For head inspection, the component plate must be dismounted which can be hung on the burner body in 2 positions to allow intervention in the most rational way. The motor, transformer and electromagnetic valve are electronically connected to plug/socket, the photoresistance is inserted under pressure. ATTENTION: ensure unit is unplugged before removing cover.

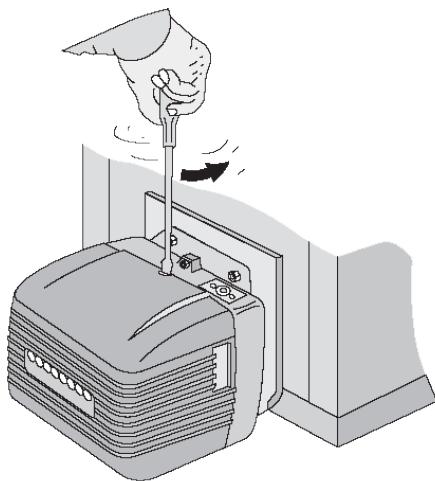


Fig. A

By removing the cover, access is gained to: condensor-motor, control box, transformer photoresistance, pump, electromagnetic valve.

UK

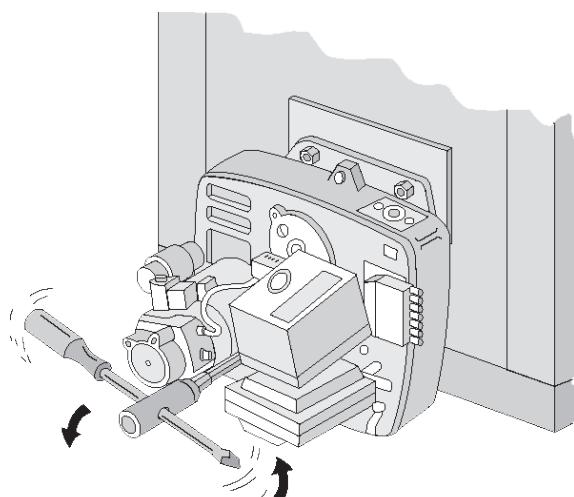


Fig. B

By unscrewing the plate fixing pin the burner can be opened allowing access to the fan, nozzle, electrodes and preheater..

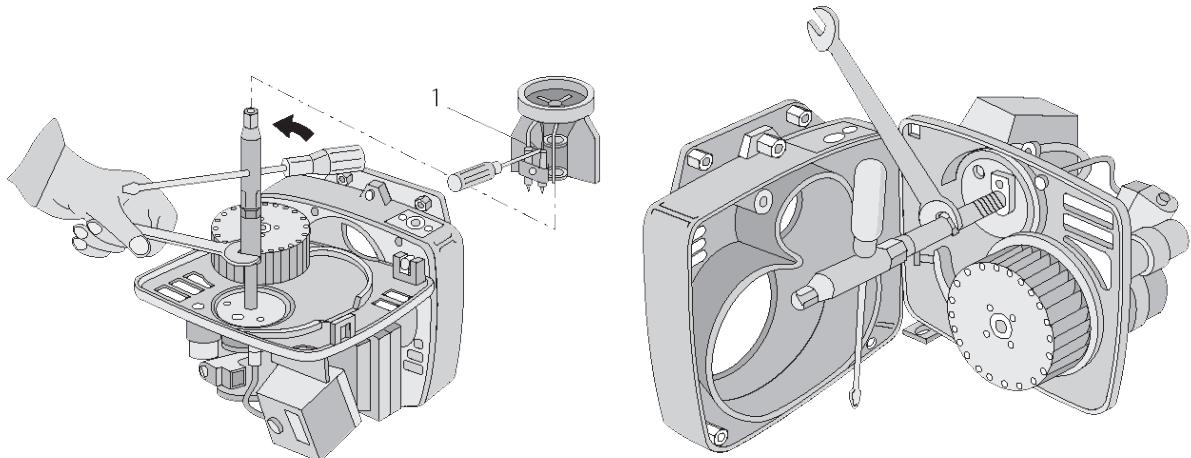
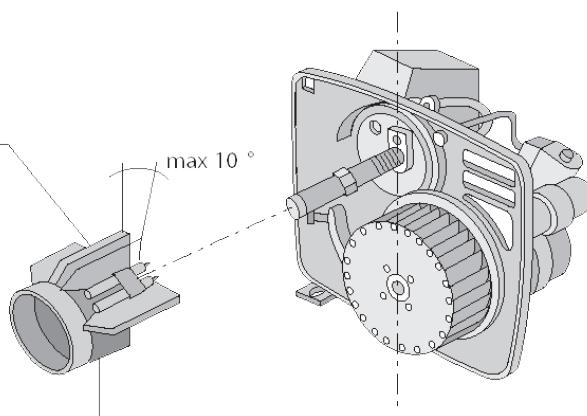


Fig. C - C1

To dismount the nozzle:

- Loosen screw 1 and extract deflector/electrode set.
- Unscrew the nozzle with spanner/counter-spanner.

Centering tongue for vertical position or
lightly to the right position (max 10°)



IMPORTANT: fix the deflector/electrodes set on the nozzle holder tube in position as per fig. D.

Fig. D

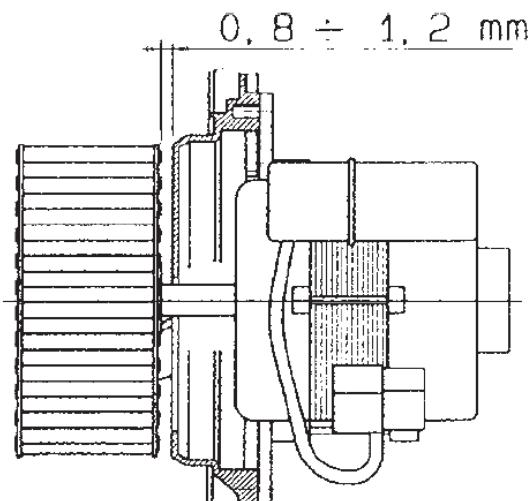


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OPERATING IRREGULARITIES

PROBLEM	PROBABLE CAUSE	SOLUTION
Motor does not work	No power supply	a) check fuses b) check thermostats
Motor works but there is no flame formation and with	a) electrodes are not discharged b) nozzle is dented c) do not get fuel	a) check correct position of tips and clean them b) clean or replace nozzle c) check Light Oil level in tank and that there are no shutters closed along the Light Oil line.
The burner starts. A flame is formed but then the burner stops	a) Photoresistant cell dirty b) Nozzle atomises badly	a) Clean the photoresistant cell b) Clean or replace the nozzle
The flame is irregular and short with sparks	a) Nozzle atomises badly b) Pump pressure too low c) Water in diesel oil	a) Clean or replace the nozzle b) Check and increase the pressure c) Drain the water from the tank and clean the filters
The flame is smoky	a) Nozzle atomises badly b) Little combustion air	a) Clean or replace the nozzle b) Check that the air valve opens regularly. Check that the fan is not dirty

WARNING: In the event of replacement or assembly/disassembly of the fan, make sure that the latter does not touch the motor platform as illustrated in the inclosed diagram.



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