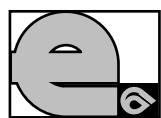




**BRUCIATORI MISTI GAS + GASOLIO
GAS/LIGHT-OIL DUAL BURNERS**



Ecoflam

MODELS



**Multicalor 300.1 PR/MD
Multicalor 400.1 PR/MD**

Light oil / Natural gas 40÷300 mbar

Light oil / LPG 75÷300 mbar

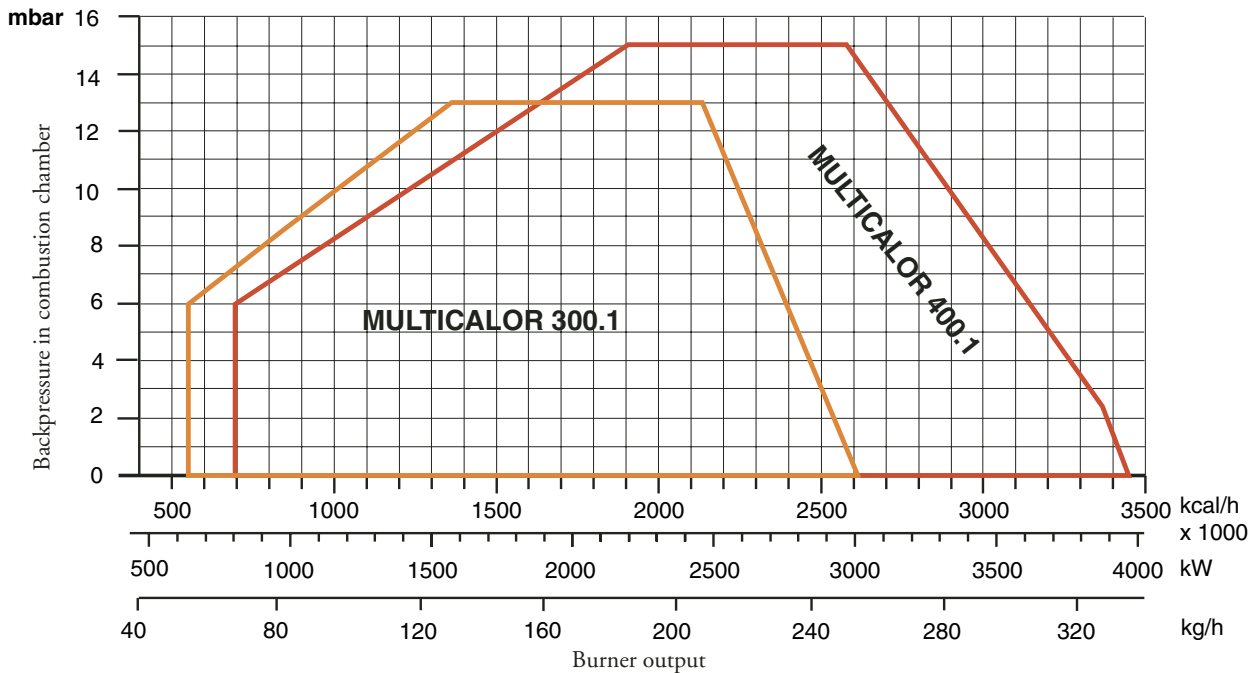


LB1448

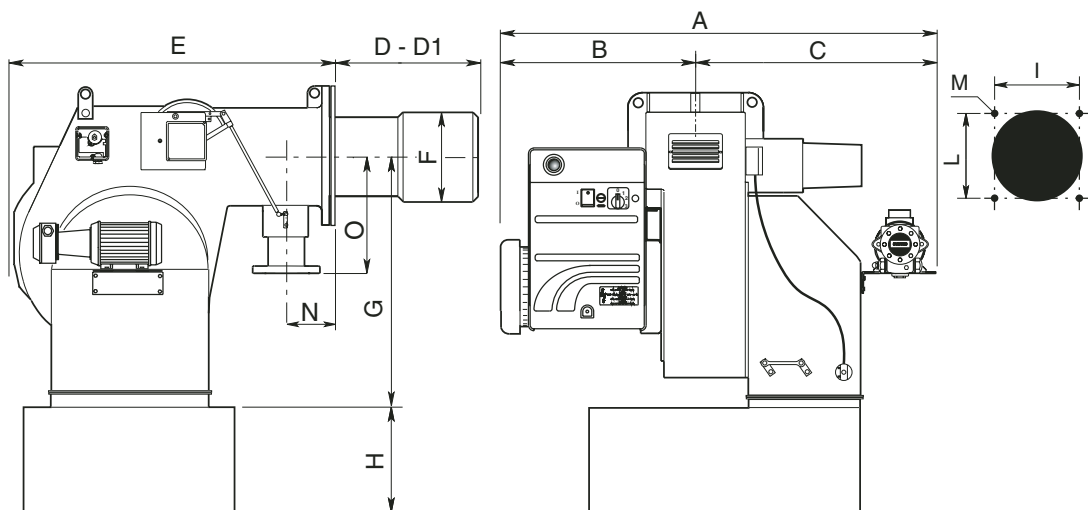
20.07.2005

TECHNICAL FEATURES :		Multicalor 300.1	Multicalor 400.1
Max. thermal output	kcal/h	2.586.000	3.362.000
	kW	3000	3900
Min. thermal output	kcal/h	543.100	754.300
	kW	630	875
Natural gas supply pressure	mbar	40÷300	40÷300
LPG supply pressure	mbar	37÷300	37÷300
Max. light oil flow rate	kg/h	253	330
Min. light oil flow rate	kg/h	53	74
Voltage, 3phase + neutral, at 50 Hz	V	230/400	230/400
Motor	kW	5,5	7,5
Motor's RPM	N°	2800	2800
Fuel : Natural Gas (L.C.V. 8.570 kcal/Nm ³), LPG (L.C.V. 22.260 kcal/Nm ³) Light oil (L.C.V. 10.200 kcal/kg max. visc 1,5°E at 20°C)			

WORKING FIELDS



OVERALL DIMENSIONS



MODELS	A	B	C	D	D1	E	F	G	H	I	L	M	N	O
MULTICALOR 300.1	1096	448	648	330	530	780	290	466	280	315	315	M16	195	250
MULTICALOR 400.1	1096	448	648	365	565	780	320	466	280	315	315	M16	195	250
				D = short head		D1 = long head								

CONNECTION TO GAS PIPE

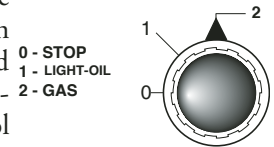
Once the burner has been connected to the gas supply, check that this last is perfectly sealed. Also verify that the chimney is not clogged. Open the on-off valve and carefully bleed the piping through the pressure port, then check the pressure value through a suitable pressure gauge. Turn on the system and adjust the thermostats to the needed temperature. When the thermostats close, the leakage control device runs a valves leakage test, then enables the burner to start the ignition cycle.

ELECTRICAL CONNECTIONS

All burners are factory tested and set at 400 V 50 Hz three-phase for motors and 230 V 50 Hz monophase with neutral for auxiliaries. If it is necessary to supply the burner at 230 V 50 Hz without neutral, make the necessary alterations referring to the wiring diagram of the burner and check that the thermal relay is within the absorption range of the motor. Also check that the fan motor rotates in the correct direction.

OPERATION OF BURNER WITH GAS MULTICALOR 300.1-400.1

Before starting the burner, make sure it is mounted correctly. Then check connections are correct according to the diagram and piping is appropriate to the system. Before connecting the burner to the electricity supply, make sure voltage corresponds to burner plate data. The connection diagram and start-up cycle are shown separately. For wiring from control box to burner, see the enclosed connection diagram. Pay particular attention to neutral and phase connections : never exchange them!. Vent air and impurities of gas pipe. Check gas pressure conforms to the limits stated on the burner plate when connecting a master gauge to the test port provided on the burner. Blower motor starts and pre-purging begins. Since pre-purging has to be carried out with the max. air delivery, the burner control circuit turns the air damper to the max. delivery position by the air servocontrol in approximately 30 seconds time. When the servocontrol is fully open, a signal to the electronic control unit starts the 66 seconds pre-purge cycle. At the end of the prepurging time, the air servocontrol gets to the Low Flame position so that burner ignition is ensured at min. output. Simultaneously the ignition transformer receives voltage and after 3 seconds (pre-ignition) opens the pilot gas valve. Fuel flows to the combustion head and ignites. Two seconds after pilot gas valves have opened, the ignition transformer is excluded from the circuit. In case of no ignition the burner goes to lock-out within two seconds. After 6 sec. open the working gas valve, governed by the gas firing butterfly valve. Now the burner is operating at the min. firing rate (about 30% of the max. firing rate). The air servocontrol runs at the Low Flame position and in case the temperature control has to be set at the max. output it goes to a fully open position of air damper and butterfly valve. During the burner-off periods the air damper closes up fully.



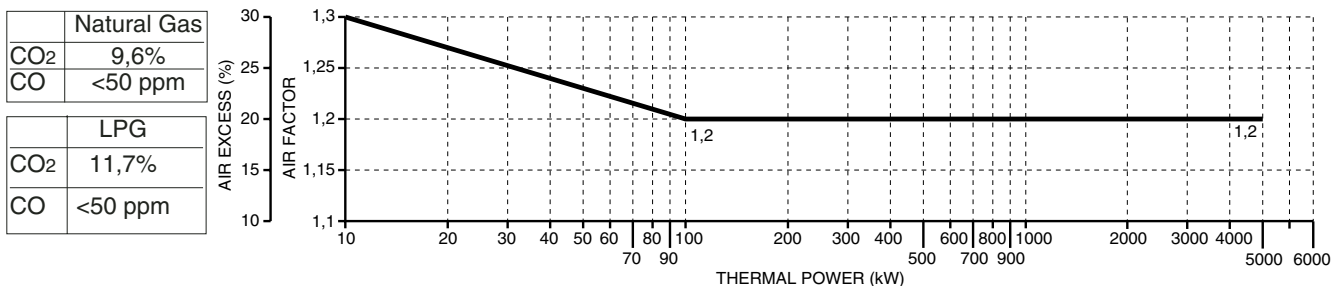
ADJUSTING THE COMBUSTION PROCESS

IMPORTANT: to obtain the right adjustment of the combustion and thermal capacity it is important to analyze the reducts of combustion with the aid of suitable instruments. The combustion and thermal capacity adjustment is done simultaneously, together with the analysis of the products of combustion, making sure that the measured values are suitable and that they comply with current safety standards. On this matter, please refer to the table and figure below.

THESE OPERATIONS MUST BE DONE BY PROFESSIONALLY-QUALIFIED TECHNICIANS.

NOTE: ALL SAFETY DEVICES (AIR PRESSURE SWITCH, MINIMUM GAS PRESSURE SWITCH, GAS SOLENOID VALVES AND GAS GOVERNOR) SHALL BE DULY SEALED AFTER CALIBRATION AND BURNER START UP BY ECOFLAM'S TECHNICIANS.

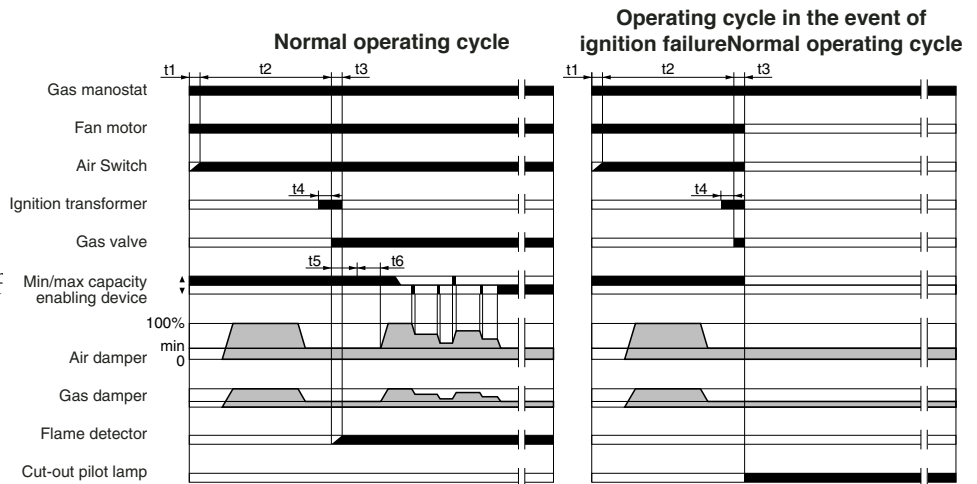
SUGGESTED REFERENCE VALUES



LANDIS & STAEEFA, Model LFL1.622 OPERATING CYCLE

Ref.	Description	Duration
t1	Duration Waiting time for confirmation of air pressure	8"
t3	Preventilation time	66"
t4	Safety time	2"
t5	Pressurizing time	4"
	Time for enabling operation of the main gas valve on minimum capacity	10"
t6	Time for enabling operation of the main gas valve on maximum capacity	10"

The control box starts the burner fan, to carry out the prepurging of the combustion chamber, and checks the vent air pressure through the air pressure switch. At the end of prepurging, the ignition transformer cuts-in and generates a spark between the electrodes. At the same time the two gas valves open (Vs safety valve and VI working valve). The total safety, in case of missed ignition or casual burner's flame-out, is granted by a ionisation probe which cuts-in and sets the burner shutdown within the safety time. In case of gas lack or a major pressure drop, the minimum air pressure switch shuts down the burner.


LANDIS & STAEEFA SQM 50.481A2 AIR DAMPER MOTOR

Remove cover to gain access to the adjusting cams. The cams are to be adjusted through the suitable key provided for.
Description:


Multicalor 300.1-400.1 PR/MD

- I - High flame operating opening position adjusting cam (Light-Oil /Gas).
- II - Limit switch for the air damper position at burner's shut down.
- III - Ignition flame opening position adjusting cam (Gas).
- IV - Ignition flame opening position adjusting cam (Light-Oil).
- V - Low flame operating opening position adjusting cam (Gas).
- VI - Low flame operating opening position adjusting cam (Light-Oil).
- VII - Not used cam.
- VIII - Not used cam.

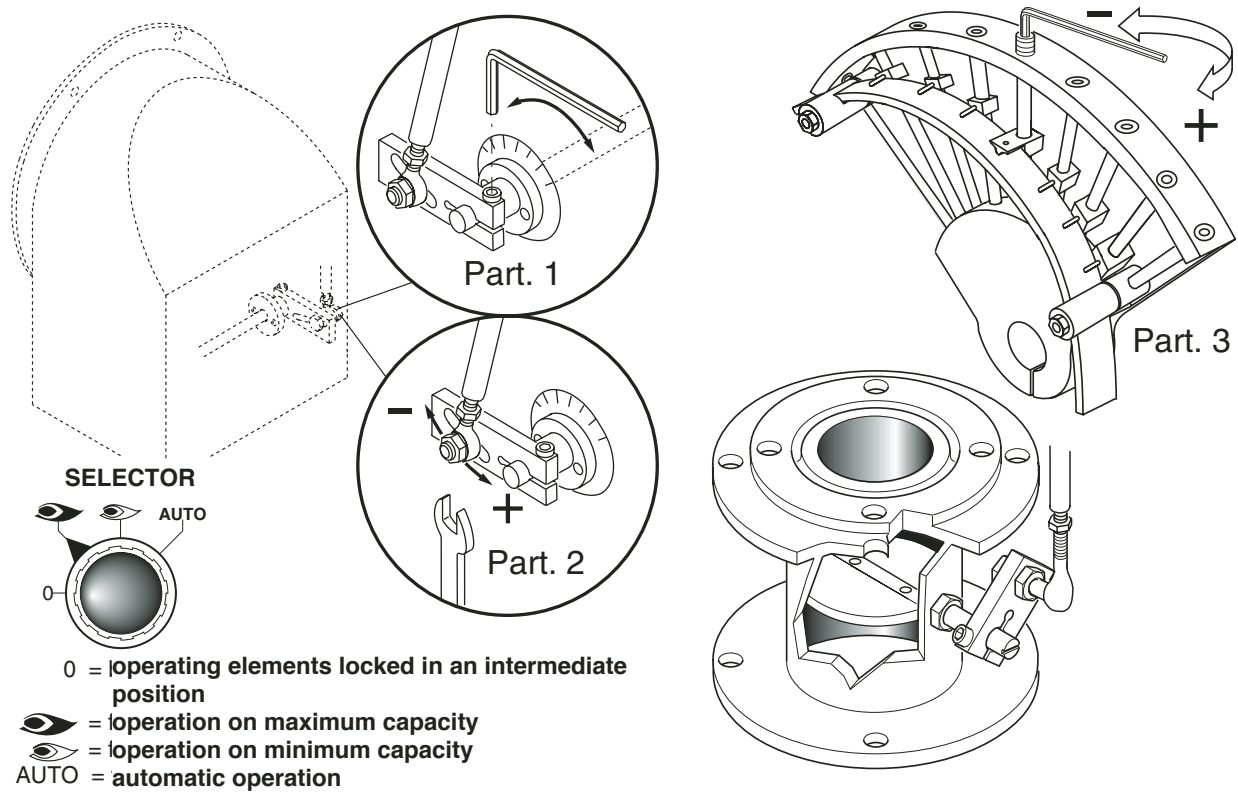
CALCULATING THE BURNER CAPACITY

To calculate the burner's capacity in kW, proceed as follows: Check the gas flow rate (in liters) on the counter and the time of the reading in seconds.

Proceed with the calculation using the following formula: $\frac{e}{\text{sec}} \times f = \text{kW}$

e	= Litres gas
sec	= Time in second
f	$\left[\begin{array}{l} \text{G20} = 34,02 \\ \text{G30} = 116 \\ \text{G31} = 88 \end{array} \right.$

AIR ADJUSTMENT



ADJUSTING THE MINIMUM CAPACITY OF THE BURNER – AIR and GAS

Position the selector placed on the control panel on position 2 and proceed as follows:
Adjust the minimum gas flow rate using a suitable wrench, turn the butterfly valve until you reach the correct gas flow, as established by analyzing the combustion process.

ADJUSTING THE MAXIMUM CAPACITY OF THE GAS

Position the selector, situated on the control panel, on position 1 and proceed as follows:
Adjusting the maximum gas flow rate (see figure on solenoid valve adjustments) or adjust the gas pressure in the governor.

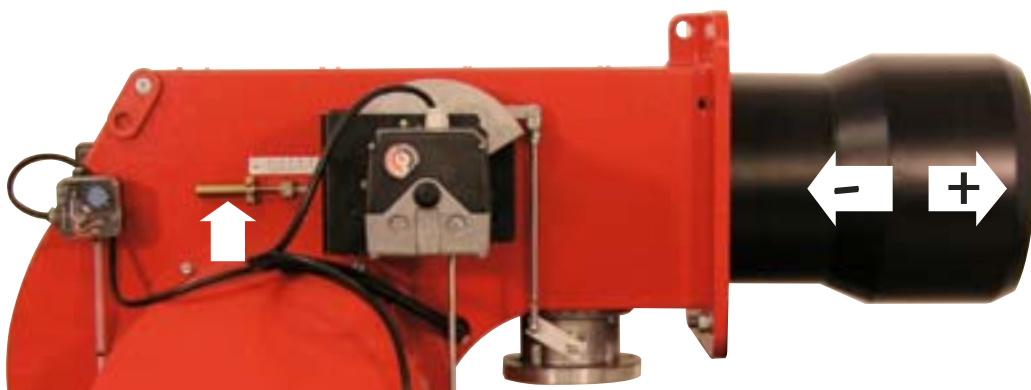
ADJUSTING THE MAXIMUM AIR FLOW RATE

Adjusting the maximum air flow rate (see figure, detail 2). Loosen the nut holding the air damper transmission rod;
The correct air flow as established by analyzing the combustion process.

ADJUSTING THE INTERMEDIATE BURNER CAPACITY

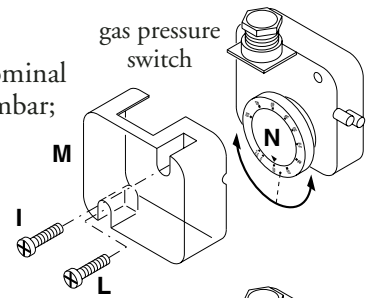
Using the selector, start the servomotor (closing or opening) and position on 0 to stop the stroke; the adjustment is made as outlined below. Repeat the operation for the other cam points.
Adjustment the intermediate gas flow rates (see figure, detail 3): - using a suitable Allen wrench, change the position of the cam guide blade; if you screw it down, the flow rate is reduced; if you unscrew it, the flow rate increases.

FIRING HEAD SETTING



ADJUSTMENT OF GAS MINIMUM PRESSURE SWITCH

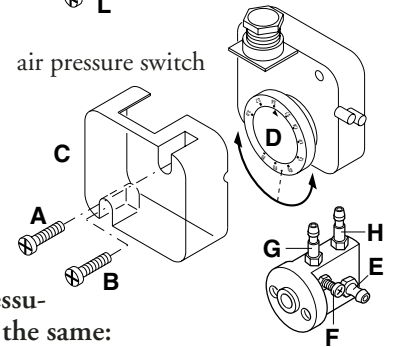
Unscrew off and remove cover M. - Set regulator N to a value equal to 60% of gas nominal feed pressure (i.e. for nat. gas nom. pressure = 20 mbar, set regulator to a value of 12 mbar; for L.P.G. nom. pressure of G30/G31- 30/37 mbar, set regulator to a value of 18 mbar). Screw up cover M



ADJUSTMENT OF THE AIR PRESSURE SWITCH

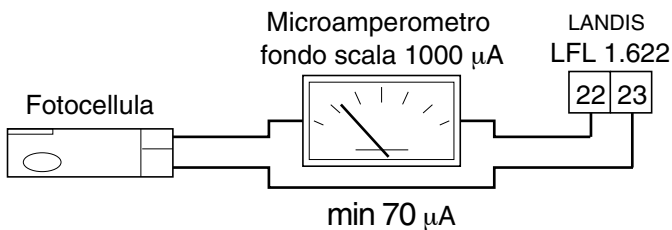
Unscrew screws A and B and remove cover C. - Set the pressure switch to the minimum by turning regulator D to position 1.

- Start the burner and keep in low flame running, while checking that combustion is correct. Through a small cardboard, progressively obstruct the air intake until to obtain a CO₂ increase of 0,5±0,8% or else, if a pressure gauge is available, connected to pressure port E, until reaching a pressure drop of 1 mbar (10 mm of W.G.). - Slowly increase the adjustment value of the air pressure switch until to have the burner lockout. Remove the obstruction from the air intake, screw on the cover C and start the burner by pressing the control box rearm button.



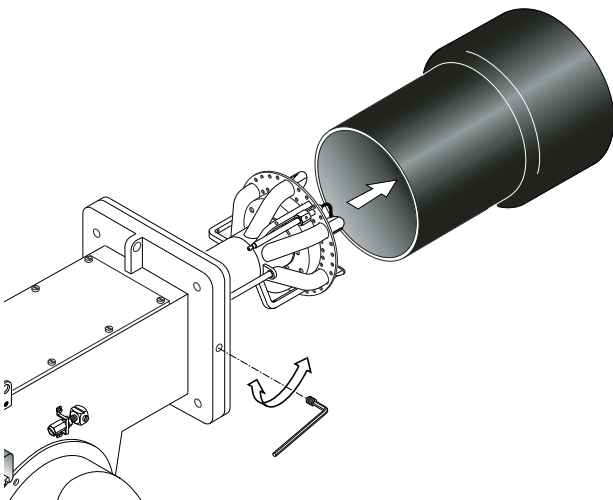
Note: The pressure measured at pressure port E must be within the limits of the pressure switch working range. If not, loose the locking nut of screw F and gradually turn the same: clockwise to reduce the pressure; counterclockwise to increase. At the end tighten the locking nut.

IONIZATION CURRENT

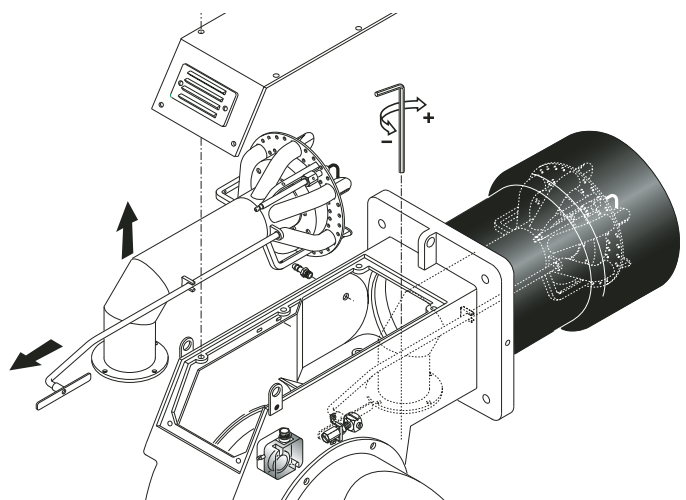


The ionization current is checked by inserting a microammeter with an end of scale of 1000 µA (d.c.) in series with the UV CELL. A faulty position of the electrode can lead to a reduction in the ionization current and cause a safety cut-out of the burner due to a flame detection failure. In this case, check the position of the electrode, its electric connection and the earthing of the burner. The ionization current is normally > 70 µA.

REMOVING THE BLAST TUBE



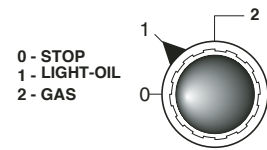
REMOVING THE FIRING HEAD



OPERATION OF BURNER WITH LIGHT-OIL FUEL MULTICALOR 300.1-400.1

Once having installed the burner, check the following items:

- The burner power feeding and the main line protection fuses
- The correct length of pipes and that the same are sealed.
- The type of fuel, which must be suitable for burner.
- The connection of boiler's thermostats and all the safeties.
- The motor rotation direction.
- The correct calibration of the motor's thermal protection.



When all the above mentioned conditions are checked and accomplished, it is possible to go on with burner's tests. Power the burner. The control box feeds the ignition transformer and the burner's motor at the same time, which will run a prepurging of the combustion chamber for about 20 sec.

At the end of prepurging, the control box opens solenoid valves and the burner starts. After a safety interval of 5 seconds and a correct ignition, the control box turns off the ignition transformer and, 10 seconds later, sets the motorised air damper to its maximum opening (High flame). In case of faulty ignition, the control box switches the burner into safety condition within 2 second. In such a case, the manual rearming of the burner shall not take place before 30 seconds have elapsed from the burner's safety shutdown. In order to obtain an optimal combustion, it is necessary adjust the LOW - HIGH flame air flow, according to the instruction given further on. During such a phase, it will be possible to manually switch between HIGH and LOW flame and viceversa, through the High/Low flame switch. At the end of the adjusting phase, leave the switch in position AUTO.

OIL DELIVERY ADJUSTMENT

The diagram illustrates the fuel feeding system of these types of burners, which incorporates a by-pass nozzle with oil flow regulation on its return pipe. The oil supply is varied by acting on the nozzle through the pressure in the return line. Max. oil supply is therefore reached when the pressure in the pump line is about 22 bar and the return line is fully closed; min. oil supply when the return line is fully open. Relevant pressure readings in the return line are as follows:

Pump pressure 22-25 bar.

Max Burner output, return oil pressure:

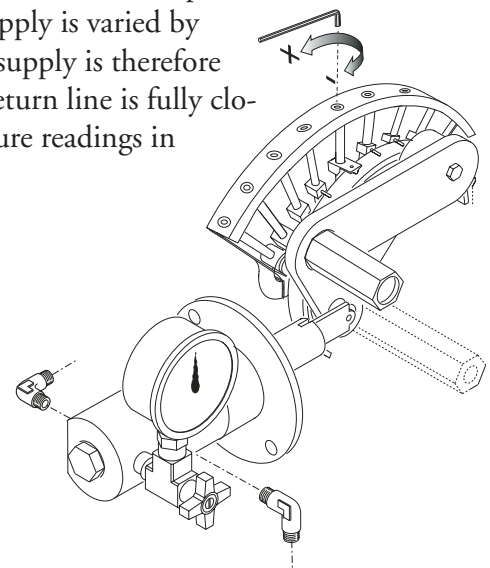
FLUIDICS nozzle : 16 ÷ 19 bar.

BERGONZO nozzle : 20 ÷ 24 bar.

Min Burner output, return oil pressure:

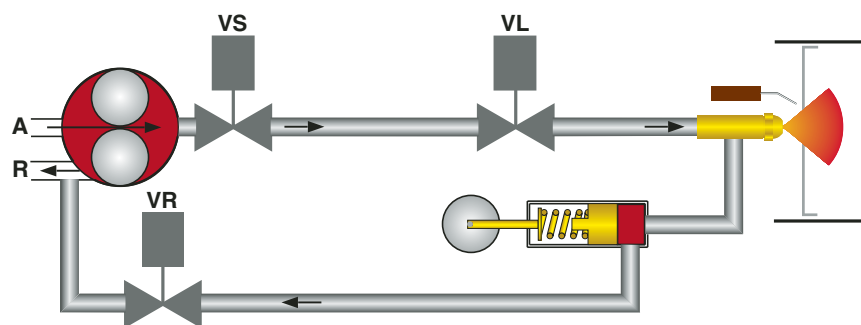
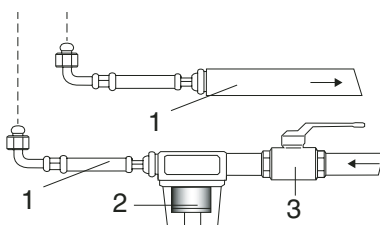
FLUIDICS nozzle : 6 ÷ 9 bar

BERGONZO nozzle : 4 ÷ 8 bar



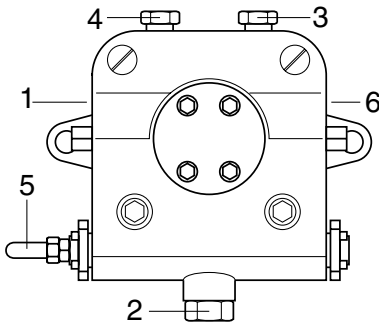
HYDRAULIC CIRCUIT

- 1 - Hose
- 2 - Oil filter
- 3 - Oil cock
- A - Suction
- R - Return
- VS - Safety oil valve
- VL - Working oil valve
- VR - Return oil valve



PRIMING AND ADJUSTMENT OF OIL PUMP

SUNTEC TA...C40105



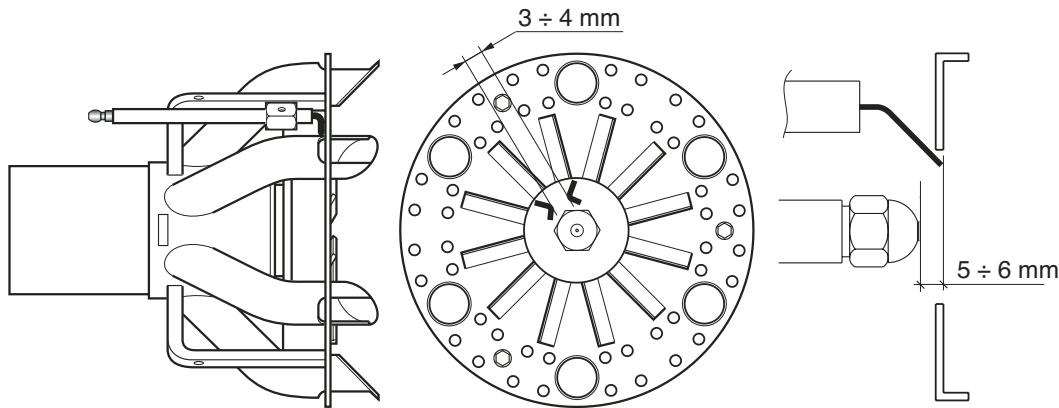
- 1 - INLET
- 2 - RETURN
- 3 - BLEED AND PRESSURE GAUGE PORT
- 4 - VACUUM GAUGE PORT
- 5 - PRESSURE ADJUSTMENT
- 6 - TO NOZZLE

VERIFY:

- That piping system is perfectly sealed;
- That the use of hoses is avoided whenever is possible (use copper pipes preferably);
- That depression is not greater than 0,45 bar, to avoid pump's cavitation;
- That check valve is suitably designed for the duty;

The pump pressure is set at a value of 12 bar during the testing of burners. Before starting the burner, bleed the air in the pump through the gauge port. Fill the piping with light-oil to facilitate the pump priming. Start the burner and check the pump feeding pressure. In case the pump priming does not take place during the first prepurging, with a consequent, subsequent lock-out of the burner, rearm the burner's lock-out to restart, by pushing the button on the control box. If, after a successful pump priming, the burner locks-out after the prepurging, due to a fuel pressure drop in the pump, rearm the burner's lock-out to restart the burner. Do never allow the pump working without oil for more than three minutes. Note: before starting the burner, check that the return pipe is open. An eventual obstruction could damage the pump sealing device.

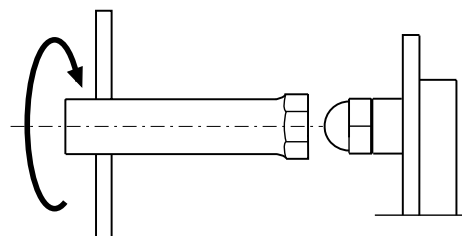
POSITION OF IGNITION ELECTRODES



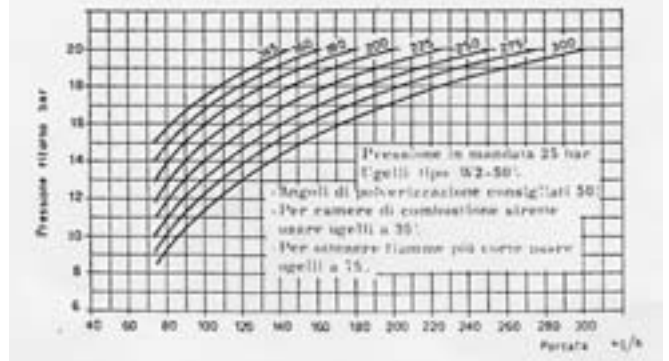
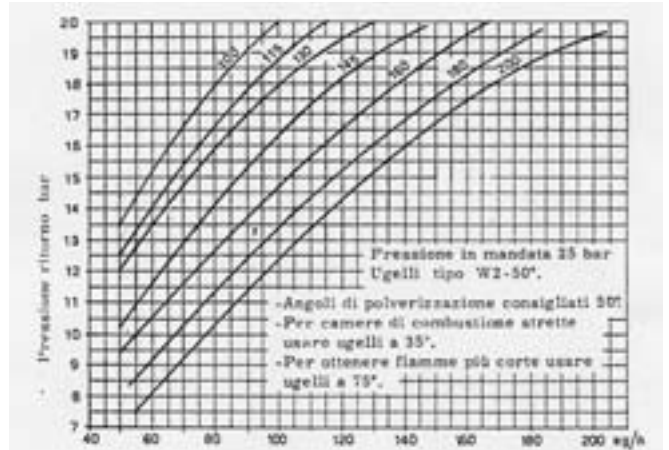
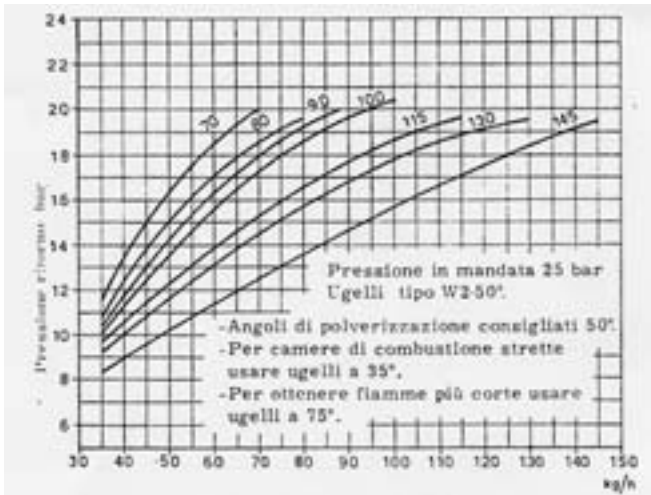
NOZZLE CLEANING AND REPLACEMENT

Use only the suitable box wrench provided for this operation to remove the nozzle, taking care to not damage the electrodes. Fit the new nozzle with the same care.

Note: Always check the position of electrodes after having replaced the nozzle (see illustration). A wrong position could cause ignition troubles.

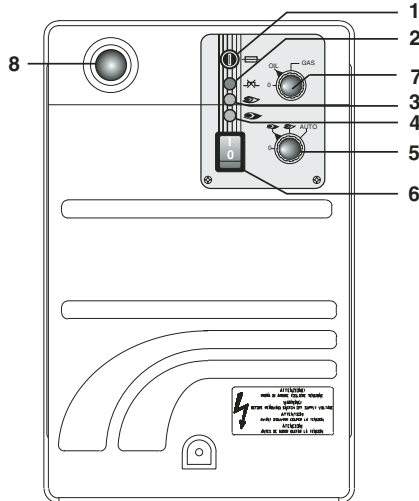


FLUIDICS NOZZLE



DESCRIPTION OF CONTROL PANEL

Multicalor PR



- 1 - Fuse
- 2 - Thermal lock-out lamp
- 3 - Light-oil working lamp
- 4 - Gas working lamp
- 5 - Selector :
 - 0 Locking of devices for operating at intermediate outputs
 - Operation at max. output
 - Operation at min. output
- AUTO Automatic operation
- 6 - Main switch I / O
- 7 - Selector : 0 / Light-oil / Gas
- 8 - Lockout disable push button

MAINTENANCE

YEARLY CHECKS

The burner's periodical check (firing head, electrodes etc.) must be carried out by authorised personnel one or two times per year, depending on the utilisation. Before going on with the maintenance controls of the burner, it should be advisable to check its general conditions, according to the following steps:

Unplug the burner; close the fuel cock; shut down the gas supply; remove burner's cover and clean the fan and air intake; clean the firing head and check the electrode's position; reassemble all the parts; check the connection's sealing; check the chimney; start the burner and check the combustion flue ($CO_2 = 9.5 \div 9.8$; $O =$ lower than 75 ppm).

BEFORE EVERY INTERVENTION CHECK:

The electric system is duly powered and the burner is plugged in.

The gas pressure must be the suitable one and the gas cock open.

The control devices must be properly connected.

When all the above conditions are met, start the burner by pressing the lockout enable pushbutton.

Check the burner's cycle.

THE BURNER DOES NOT START:

Check the ON/OFF switch, the thermostats, the motor and the gas pressure.

The master switch is in position "0". Fuses are blown out.

The control box is faulty.

THE BURNER RUNS THE PREPURGING AND SWITCHES TO LOCKOUT AT THE END OF CYCLE:

Check the fan and the air pressure.

Check the air pressure switch.

Control box faulty. Ignition transformer faulty.

Check the ignition cable. Electrodes are dirty or in wrong position.

Nozzles are clogged or worn. Filters are clogged. Light-oil pressure is too low.

Combustion air's flow rate too high related to nozzle output.

THE BURNER RUNS THE PREPURGING BUT DOES NOT IGNITE:

Check the position of the electrodes; check the ignition cable;

Check the ignition transformer;

Check the control box.

THE BURNERS IGNITES BUT SWITCHES TO LOCKOUT AFTER THE SAFETY TIME:

Check phase and neutral for a correct connection.

Check gas solenoid valve.

Check the position of ionisation probe and its connection.

Check the control box.

Check nozzles (clogged or worn).

The photoresistor does not detect the flame.

The filters are clogged. Light-oil pressure too low.

Combustion air's flow rate too high related to nozzle output.

THE BURNERS IGNITES BUT SWITCHES TO LOCKOUT AFTER FEW MOMENTS:

Check gas governor and gas filter.

Check gas pressure through a manometer.

Check ionization value (min. 70 μA).

THE BURNER DOES NOT SWITCHES TO HIGH FLAME:

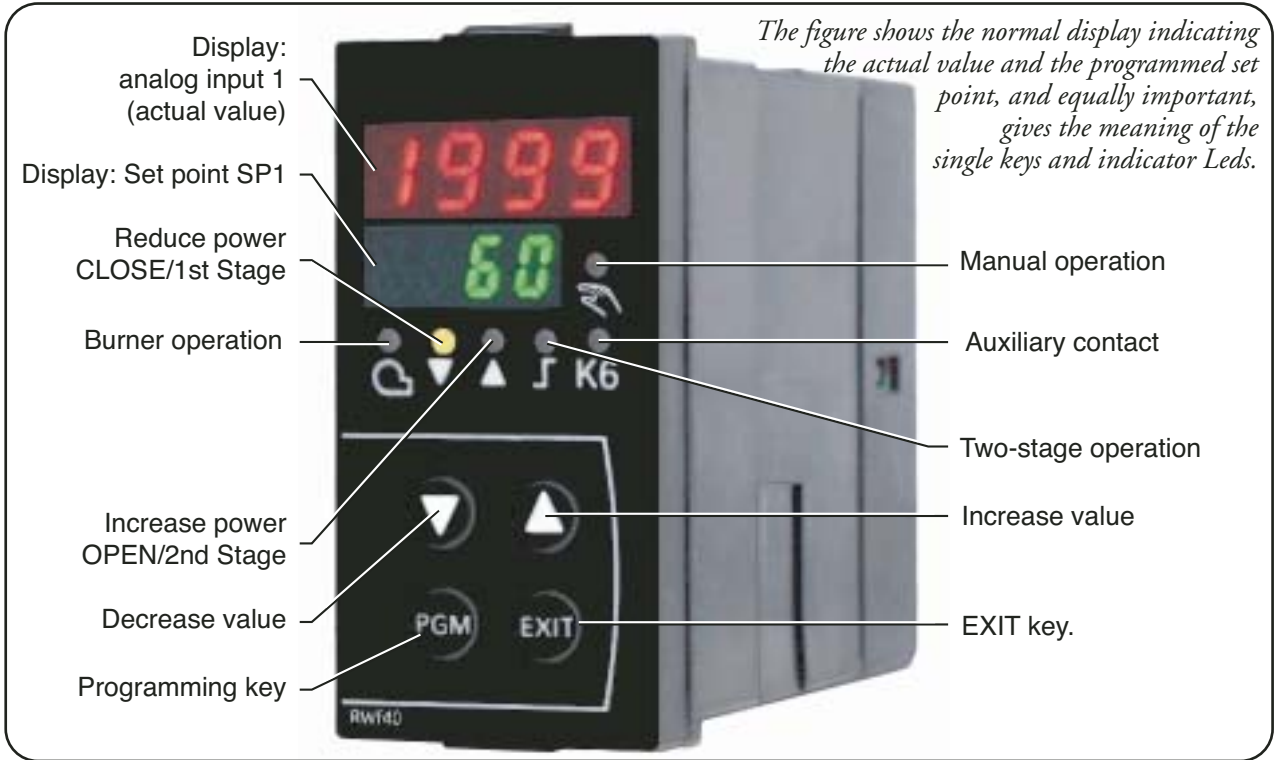
Manual selector switch in wrong position.

Faulty control box. High flame solenoid valve's coils faulty.

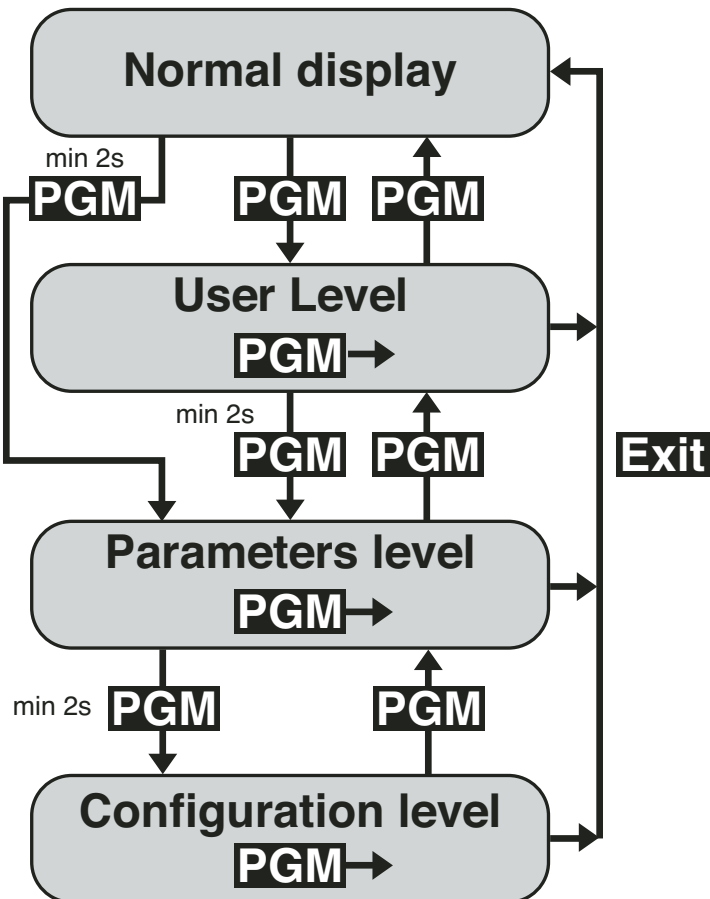
Air damper's jacket faulty or wrongly adjusted.

RWF 40 MICROPROCESSOR REGULATOR

Description of display and keys on the RWF 40 microprocessor regulator



PROGRAMMING LEVELS



SETTING PARAMETERS

When the burner is ignited all displays of the regulator light up. The set point display will blink for about 10 seconds. The value in the upper field of the display (red) indicates the actual value. The value in the lower field of the display (green) indicates the set point currently programmed.

CHANGING THE SET POINT

To change the set point, proceed as follows: - Press the **PGM** button to access the user level. SP1* will appear in the lower display - Change the value of set point SP1 using the t and s keys. ▼ ▲. - After a 2 second delay the value set is stored automatically - To return to normal display press **EXIT**.

* The value of SP1 depends on the value set previously in configuration level C111.

SETTING PID PARAMETERS

PID parameters are factory set to standard mean values. The operation of the regulator can be self-adapted to suit the system by activating the “tunE” function. The regulator will set the PID parameters automatically. To activate the “tunE” function proceed as follows: - With the burner in operation, press **PGM** + ▼. - the caption “tunE*” will blink in the display. - When “tunE” stops blinking, the self-adaptation routine has been completed. - Confirm the computed parameters by pressing the ▲ key for 2 seconds.

* The “tunE” function cannot be activated in Manual mode, or when the burner is off.

The PID parameters can be corrected manually from the parameters level, working on the proportional band Pb1, the derivative action time dt and the integral action time rt.

To change parameters Pb1, dt and rt, proceeds as follows: - Press the **PGM** button to access the parameters level. - To move from one parameter to the next, press **PGM** . - When Pb1 is displayed, the value can be increased or decreased using the s and t keys. - Confirm the changed parameters by pressing **PGM**. - If confirmation is not given within 2 seconds the value will be stored automatically. - Press **PGM** to access the next parameter. - When dt is displayed, repeat the procedure described above. - Press **PGM** to access the next parameter. - When rt is displayed, repeat the procedure above. - To return to normal display press **EXIT**.

DIFFERENTIAL SETTING FOR IGNITION AND SHUTOFF

The regulator allows the selection of an adjustable switching differential that establishes burner ignition and shutoff values. HYS1 indicates the lower ignition limit, below which the regulator switches the burner to maximum power. HYS3 indicates the upper shutoff limit, above which the regulator switches the burner off. To set HYS1 and HYS3 proceed as follows: - Press the **PGM** key to access the parameters level. - To move from one parameter to the next, press **PGM** . - When HYS1 is displayed (burner ignition differential-stage II), increase or decrease the value using the ▼ and ▲ keys. - Confirm the changed parameters by pressing **PGM**. - If confirmation is not given within 2 seconds the value will be stored automatically. - Press **PGM** to access the next parameter. - When HYS2 is displayed (burner shutoff differential-stage II), repeat the procedure described above. - Press **PGM** to access the next parameter. - When HYS3 is displayed (upper shutoff differential) repeat the procedure described above. - To return to normal display press **EXIT**.

MANUAL/AUTOMATIC MODE

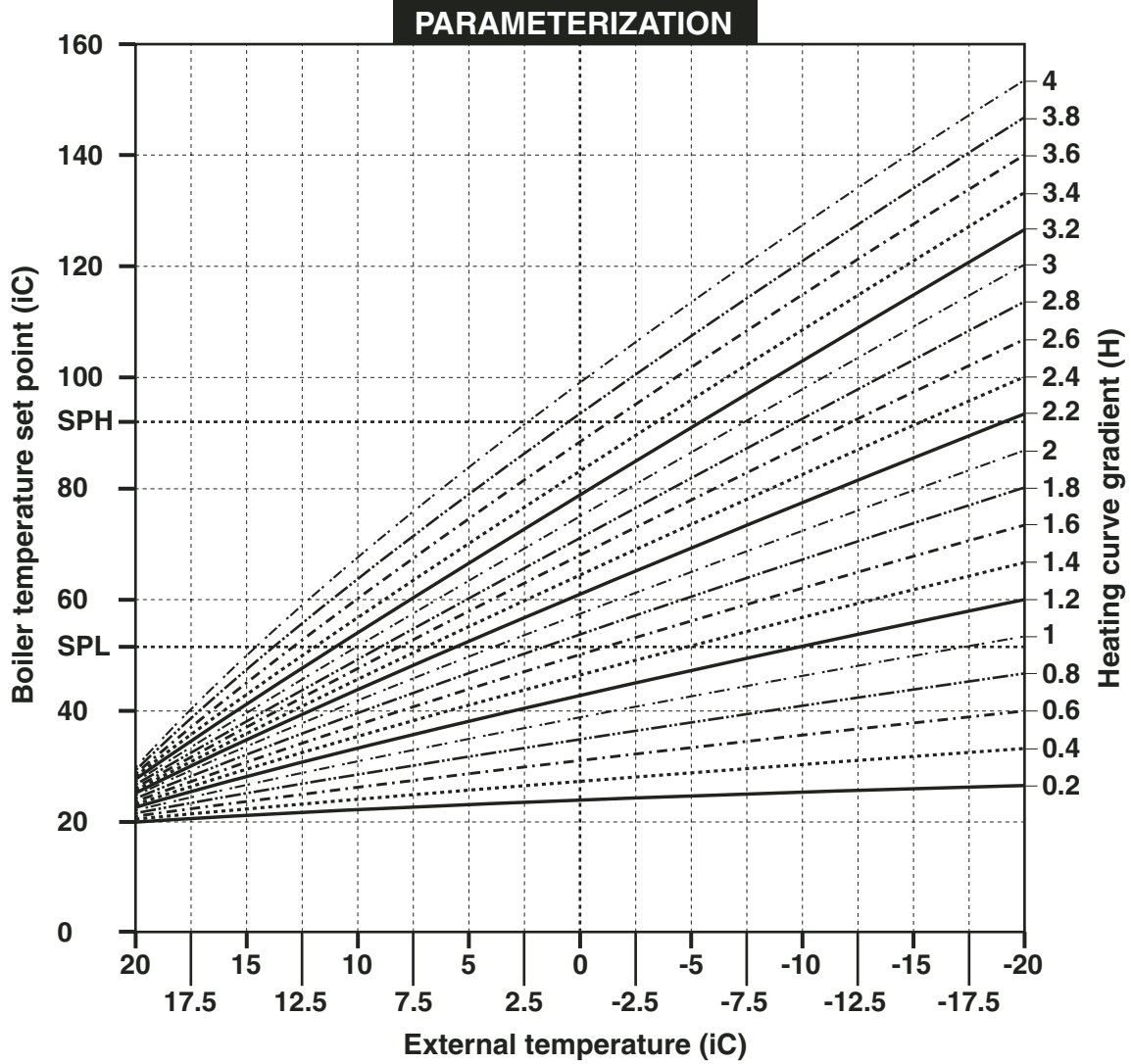
To access “MANUAL” mode, press and hold **EXIT** for at least 5 seconds. Manual mode can only be selected when the burner is in operation. It is deactivated automatically when the burner shuts off. When the LED above the hand symbol is alight, the regulator is in manual mode and the position of the servocontrol can be changed using the ▼ and ▲ keys. The LEDs on the front of the regulator indicate whether the servocontrol OPEN or CLOSE command is currently active. Pressing the ▼ key the servocontrol OPENS. Pressing the ▲ key the servocontrol CLOSES. To select automatic mode press and hold **EXIT** for at least 5 seconds. The LED above the hand symbol goes out and the regulator reverts to automatic.

CLIMATIC COMPENSATION

The RWF 40 regulator can be set with the set point interlocked to the external probe. To select this operating mode, proceed as follows: - Connect the required probe as in the wiring diagram. - Change the regulator settings. When using an external probe the regulator must be set as follows: - Press the **PGM** key to access the configuration level. When the caption C111 (XXXX) is displayed, use the ▲ key to access the second figure (XXXX). Use the ▼ key to select the type of probe (XX3X). - Confirm the change of parameters by pressing **PGM**. If this is not done within 2 seconds, the value is stored automatically - Press **PGM** to access the configuration level. When the display reads C112 (XXXX), use the ▲ key to access the second figure (XXXX). Press the ▼ key to set the type of probe (XX3X). - Confirm the changed parameters by pressing **PGM**. - If confirmation is not given within 2 seconds the value will be stored automatically.

- To return to normal display press **EXIT**. To establish the heating curve, proceed as follows:

- Press **PGM** to access the parameters level. - Press **PGM** to move from one parameter to the next. - When the letter H is displayed (heating curve gradient), increase or decrease the value using the ▼ and ▲ keys. - Confirm the changed parameters by pressing **PGM**. - If confirmation is not given within 2 seconds the value will be stored automatically. - To return to normal display press **EXIT**.

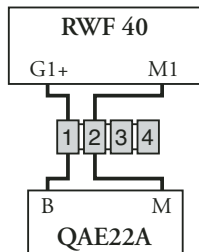


PROBE CONNECTION DIAGRAMS



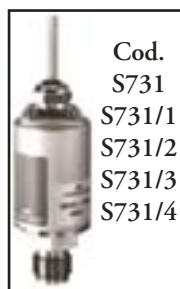
Cod. S721

Connection for probe
QAE2..(passive probe)
Water probe
Configuration code
C111 = 9XXX



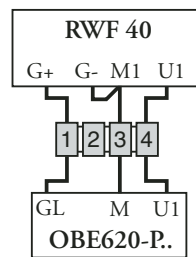
Cod.
S704

Connection for probe
FT-TP/..(passive probe)
(Degusa probe)
Configuration code
C111 = 5XXX



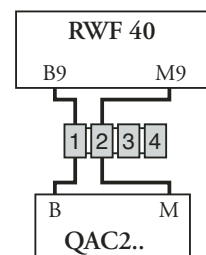
Cod.
S731
S731/1
S731/2
S731/3
S731/4

Connection for probe
QBE620-P..(active probes)
Configuration code
C111 = GXXX
S731 - 0...4 bar / 0...400 kPa
QBE620-P4
S731/1 - 0...10 bar / 0...1 MPa
QBE620-P10
S731/2 - 0...16 bar / 0...1.6 Mpa
QBE620-P16
S731/3 - 0...25 bar / 0...2.5 MPa
QBE620-P25
S731/4 - 0...40 bar / 0...4 MPa
QBE620-P40



Cod.
S720/1

Connection for probe
QAC22 (passive probe)
Configuration code
C111 = XX3X
C112 = XX1X



C111 – C112 INPUT CONFIGURATION INDICATIONS

Analog input 1 (actual value)	
Pt1000, 2-wire, Landis & Staefa IEC 751 FT-TP/... (passive probe)	5
Ni1000, 2-wire, Landis & Staefa QAE2 ... (passive probe - water probe)	9
Standard Signal DC 0...10 V QBE620P... (active probe - pressure probe)	G



Analog Input 3 (external temperature)	
No function (probe not active)	0
External probe Pt 1000, 2-wire, QAC22 (passive probe)	1

**AUXILIARY CONTACT, TYPE OF REGULATOR, SET POINT “SP1”
BLOCK C112. Parameter configuration**



Set point “SP1”	
Set point SP1 - data input from keys	0
Set point SP1 - interlocked to external probe (configure)	1

**ERROR/FAULT INDICATION
NUMBERS BLINKING IN DISPLAY**



- **Situation** - The number *1999* *blinks* in the display as the actual value, with the set point value displayed normally.
- **Cause** - The real value is not being measured. This means that the upper or lower limit of the measurement range on analog input 1 (real value) has been exceeded.
- **Remedy** - Check the electrical connections and the state of the probe. If the probe is faulty, the regulator will not indicate the real value of the physical quantity monitored. This will result in automatic shutdown (failsafe), **deactivation of the self-adapt function and inhibition of manual operation**. The response of the auxiliary contact will depend on the configuration of parameter C113.

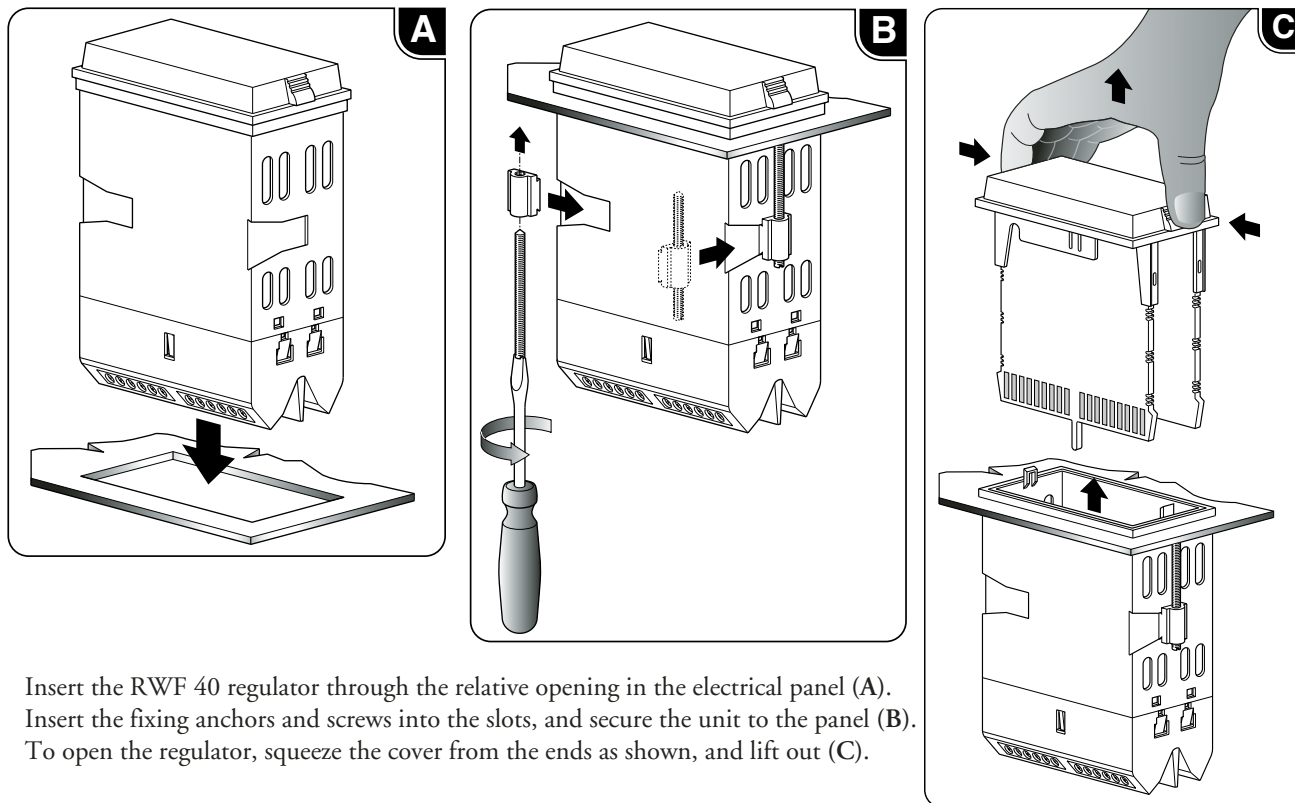


- **Situation** - The number *1999* *blinks* in the display as the actual value, with *tA* showing in the set point field.
- **Cause** - The external temperature is not being measured. This means that the upper or lower limit of the measurement range on analog input 3 (real value) has been exceeded.
- **Remedy** - Check the electrical connections and the state of the probe. If the probe is faulty, the regulator will not indicate the real value.



- **Situation** - The number *1999* *blinks* in the display as the actual value, with *SP.E* showing in the set point field.
- **Cause** - The external set point value is not being measured. This means that the upper or lower limit of the measurement range on analog input 2 (real value) has been exceeded.
- **Remedy** - Check the electrical connections and the external set point signal. If the probe is faulty, the regulator will not indicate the real value of the physical quantity monitored. **This will result in automatic shutdown (failsafe), deactivation of the self-adapt function and inhibition of manual operation.**

WHEN REPLACEMENT IS NECESSARY, PROCEED AS SHOWN IN FIGURES A-B-C BELOW



Insert the RWF 40 regulator through the relative opening in the electrical panel (A).
 Insert the fixing anchors and screws into the slots, and secure the unit to the panel (B).
 To open the regulator, squeeze the cover from the ends as shown, and lift out (C).

PARAMETERS

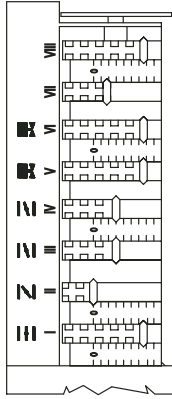
Parameter	Display	Ecoflam setting	Ecoflam setting	Ecoflam setting
		(passive probe) QAE22	(passive probe) FT-TP/1000	(active probe) QBE620-P...
Limit value of limit comparator	AL	0	0	0
Switching differential for limit comparator	HYS1	0	0	0
Proportional band	Pb.1	8	8	1
Derivative time	dt	20	20	3
Integral action time	rt	80	80	15
Dead band (neutral zone)	db	0.5	0.5	0.5
Actuator running time (sec.)	tt	25	25	25
Switch-on threshold burner / stage II	HYS1	-2	-2	-0.2
Switch-off level stage II	HYS2	0	0	0
Upper switch-off threshold	HYS3	5	5	0.5
Response threshold	q	0	0	0
Heating curve slope	H	2	2	2
Parallel displacement	P	0	0	0

CONFIGURATION

Parameter	Display	Ecoflam setting							
		(passive probe)		(active probe) QBE620-P...					
		QAE22	FT-TP/1000	-P4	-P10	-P16	-P25	-P40	
Analog input 1, 2 and 3; setpoint changeover / shift	C111	9030	5030	G000	G000	G000	G000	G000	
Limit comparator; controller type; setpoint 1; locking	C112	0010	0010	0010	0010	0010	0010	0010	
Unit address; decimal place / unit, signal for out-of-range	C113	0110	0110	0110	0110	0110	0110	0110	
Measured value range start analog input 1	SCL	0	0	0	0	0	0	0	
Measured value range analog input 1	SCH	100	100	4	10	16	25	40	
Measured value range analog input 2	SCL2	0	0	0	0	0	0	0	
Measured value range analog input 2	SCH2	0	0	0	0	0	0	0	
Lower setpoint limit	SPL	60	60	0	0	0	0	0	
Upper setpoint limit	SPH	88	88	4	10	16	25	40	
Actual value correction, analog input 1	OFF1	0	0	0	0	0	0	0	
Actual value correction, analog input 2	OFF2	0	0	0	0	0	0	0	
Actual value correction, analog input 3	OFF3	0	0	0	0	0	0	0	
Filter time constant for digital filter, analog input 1	dF1	1	1	0	0	0	0	0	



00		01		02		03		04		05		06		07		08		09	
Q	INTERRUTTORE GENERALE CON FUSIBILE MAIN SWITCH WITH FUSE INTERRUPTEUR GENERAL AVEC FUSIBLE INTERRUPTOR GENERAL CON FUSIBLE	SAL	INTERRUTTORE DI LINEA WORKING SWITCH INTERRUPTEUR DE LIGNE INTERRUPTOR DE LINEA																
Z	FILTRO ANTIDISTURBO ANTI JAMMING FILTER FILTRE ANTIPARASITES FILTRO DE PROTECCION ANTIDISTURBO	SPA	PRESSOSTATO ARIA AIR PRESSURE SWITCH PRESSOSTAT AIR PRESSOSTATO AIRE																
FU	FUSIBILE FUSIBLE FUSIBLE FUSIBLE	STC	TERMOSTATO CALDAIA BOILER THERMOSTAT TERMOSTAT CHAUDIERE TERMOSTATO CALDERA																
KA	RELE RELAY RELAIS RELE	STS	TERMOSTATO DI SICUREZZA SAFETY THERMOSTAT THERMOSTAT DE SECURITE TERMOSTATO DE SEGURIDAD																
MP	MOTORE POMPA OIL PUMP MOTOR MOTEUR POMPE MOTOR BOMBA	SAGS	COMUTATORE GAS/OIL-GAS SWITCH (OIL-GAS) INTERRUPTEUR MAZOUT-GAS COMUTADOR GAS/OIL-GAS																
MV	MOTORE VENTILATORE MOTOR FAN MOTEUR VENTILATEUR MOTOR VENTILADOR	SAMA	COMUTATORE MANUALE-AUTOMATICO SWITCH/MANUEL-AUTOMATIQUE INTERRUPTEUR MANUEL-AUTOMATIQUE COMUTADOR MANUAL-AUTOMATICO																
TV	TRASFORMATORE IGNITION TRANSFORMER TRANSFORMATEUR D'ALLUMAGE TRANSFORMADOR	Y1G1	ELETTRIVALVOLA GAS DI PRIMA FIAMMA FIRST STAGE GAS SOLENOID VALVE ELECTROVANNE GAZ PETITE ALLURE ELECTROVALVULA GAS DE 1 ^a LLAMA																
UV	FOTOCELLULA UV CELL CELLULE UV FOTOCELULA	Y1G2	ELETTRIVALVOLA GAS/OIL DI ANDATA FLOW SOLENOID VALVE ELECTROVANNE MAZOUT ELECTROVALVULA DE GAS/OIL																
FMP	RELE TERMICO MOTORE POMPA MOTOR THERMAL RELAY RELAIS THERMIQUE MOTEUR POMPE RELE TERMICO MOTOR BOMBA	Y1G3	ELETTRIVALVOLA GAS/OIL DI RITORNO RETURN SOLENOID VALVE ELECTROVANNE MAZOUT ELECTROVALVULA DE GAS/OIL																
FMV	RELE TERMICO MOTORE VENTILATORE MOTOR THERMAL RELAY (FAN MOTOR) RELAIS THERMIQUE MOTEUR VENTILATEUR RELE TERMICO MOTOR VENTILADOR	Y1G5	ELETTRIVALVOLA GAS DI SICUREZZA EXTRA SAFETY GAS SOLENOID VALVE ELECTROVANNE GAZ DE SECURITE ELECTROVALVULA GAS DE SEGURIDAD																
HLB	LAMPADA DI BLOCCO LOCK-OUT LAMP LAMPE DE SECURITE ESPIA DE BLOQUEO	Y1GP	ELETTRIVALVOLA GAS PILOTA PILOT FLAME SOLENOID GAS VALVE ELECTROVANNE GAZ PILOTE ELECTROVALVULA GAS PILOTE																
HLG	LAMPADA GAS GAS LAMP LAMPE DE GAZ ESPIA GAS	SPGmin	PRESSOSTATO GAS DI MINIMA GAS PRESSURE SWITCH MIN PRESSOSTAT GAZ PRESSION MIN PRESSOSTATO GAS DE MINIMA POT.																
HLg	LAMPADA GAS/OIL OIL LAMP THERION MAZOUT ESPIA GAS/OIL	Y1G51	ELETTRIVALVOLA GAS/OIL DI SICUREZZA EXTRA SAFETY OIL SOLENOID VALVE ELECTROVANNE MAZOUT DE SECURITE ELECTROVALVULA DE GAS/OIL DE SEGURIDAD																
KAZ	RELE RELAY RELAIS RELE	H1BT	LAMPADA DI BLOCCO TERMICO THERMAL LOCK-OUT LAMP LAMPE DE THERMAL DE SECURITE ESPIA DE BLOQUEO RELE TERMICO																
KMP	CONVETTORE MOTORE POMPA PUMP REMOTE CONTROL SWITCH CONTACTEUR MOTEUR POMPE EMPALME MOTOR BOMBA																		
KMV	CONVETTORE MOTORE VENTILATORE REMOTE CONTROL SWITCH (FAN MOTOR) CONTACTEUR MOTEUR VENTILATEUR TELEBLOQUEO MOTOR VENTILADOR																		



- (07) I: CAMMA DI REGOLAZIONE ALTA FIAMMA (GAS-GASOIL)
- (07) II: CAMMA DI REGOLAZIONE ARIA CHIUSURA TOTALE
- (15) III: CAMMA DI REGOLAZIONE ARIA PER FIAMMA DI ACCENSIONE GAS
- (15) IV: CAMMA DI REGOLAZIONE ARIA PER FIAMMA DI ACCENSIONE GAS/OIL
- (25) V: CAMMA DI REGOLAZIONE ARIA PER BASSA FIAMMA GAS
- (25) VI: CAMMA DI REGOLAZIONE ARIA PER BASSA FIAMMA GAS/OIL
- (07) VII: CAMMA NON UTILIZZATA
- (07) VIII: CAMMA NON UTILIZZATA

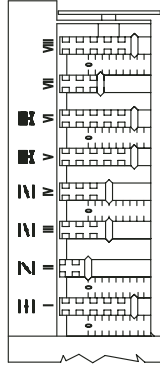
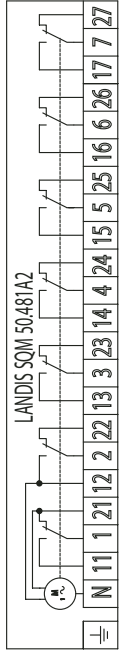
IND. MOD.	DATA-FIRMA	DESCRIZIONE MODIFICA	DISCONTINUITA	CONTROLLATO	DATA	FIRMA	FIRMA	At. : : : : ~	22-03-2005	DM	22-03-2005	FIRMA								
DENOMINAZIONE										MOTORIDUTTORE										
MULTICALOR 300.1 - 400.1 - 500.1 MD										LANDIS SQM50.481 A2										
APPRECCIA TURCA										CONTROLLO DI TERUBA										
LANDIS LFL 1.622										DUNGS VPS 504										
										SIST. RIVELAZ.										
										UV										
										CODICE										
										BEM43169										
										IND. MODIFICA										



UFFICIO TECNICO SETTORE ELETTRICO



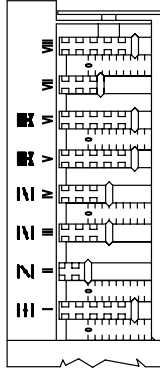
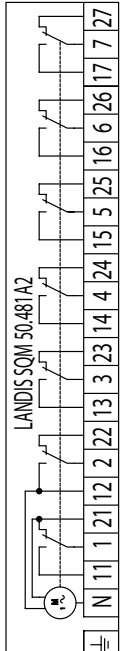
00		01		02		03		04		05		06		07		08		09		
Q	INTERUTTORE GENERALE CON FUSIBILE MAIN SWITCH WITH FUSE INTERUPTEUR GENERAL AVEC FUSIBLE INTERUPTEUR GENERAL CON FUSIBLE	SAL	INTERUTTORE DI LINEA WORKING SWITCH INTERUPTEUR DE LIGNE INTERUPTEUR DE LIGNE																	
Z	FILTRO ANTIRITORNO ANTI-RUNBACK VALVE FILTRE ANTIRRUBINATI ANTI-RUNBACK VALVE FILTRO DE PROTECCION ANTIDISTURBO	SPA	PRESOSTATO ARIA AIR PRESSURE SWITCH PRESOSTATO ARIE PRESOSTATO ARIE																	
FU	FUSIBILE FUSE FUSIBLE FUSIBLE	STC	TERMOSTATO CALDIA BOILER THERMOSTAT TERMOSTATO CALDERA TERMOSTATO CALDERA																	
KA	RELÈ RELAY RELAIS RELE	STS	TERMOSTATO DI SICUREZZA SAFETY THERMOSTAT TERMOSTAT DE SECURITE TERMOSTAT DE SECURIDAD																	
MP	MOTORE POMPA OIL PUMP MOTOR MOTEUR POMPE MOTOR BOMBA	SgAG	COMUTATORE GAS/OIL-GAS SWITCH OIL-GAS COMMUTADOR GAS/OIL-GAS																	
MV	MOTORE VENTILATORE MOTOR FAN MOTEUR VENTILATEUR MOTOR VENTILADOR	SAMA	COMUTATORE MANUALE AUTOMATICO SWITCH (MANUAL-AUTOMATIC) INTERUPTEUR MANUEL-AUTOMATIQUE COMMUTADOR MANUAL-AUTOMATICO																	
TV	TRASFORMATORE IGNITION TRANSFORMER TRANSFORMATEUR D'ALLUMAGE TRANSFORMADOR	STAB	TERMOSTATO DI ALTA BASSA FANMMA HIGH-LOW FLAME THERMOSTAT TERMOSTAT GRANDE-PETITE ALLURE TERMOSTAT DE ALTA-BAJA LLAMA																	
UV	FOTOCELLA UV CELL CELLULE UV FOTOCELULA	WVG	ELETTROVALVOLA GAS DI PRIMA FANMMA FIRST STAGE GAS SOLENOID VALVE ELECTROVANNE GAZ PETITE ALLURE ELECTROVALVULA GAS DE 1ª LLAMA																	
FMP	RELÈ TERMICO MOTORE POMPA THERMAL RELAY (PUMP MOTOR) RELAIS THERMIQUE MOTEUR POMPE RELE TERMICO MOTOR BOMBA	Wg	ELETTROVALVOLA GAS/OIL PRIMA FANMMA FIRST STAGE GAS/OIL SOLENOID VALVE ELECTROVANNE GAZ/OIL PETITE ALLURE ELECTROVALVULA DE GAS/OIL 1ª LLAMA																	
FMV	RELÈ TERMICO MOTORE VENTILATORE THERMAL RELAY (FAN MOTOR) RELAIS THERMIQUE MOTEUR VENTILATEUR RELE TERMICO MOTOR VENTILADOR	WGS	ELETTROVALVOLA GAS DI SICUREZZA EXTRA SAFETY GAS SOLENOID VALVE ELECTROVANNE GAZ DE SECURITE ELECTROVALVULA DE GAS DE SEGURIDAD																	
HLB	LAMPADA DI BLOCCO LOCK-OUT LAMP LAMP DE SECURITE ESPA DE BLOQUEO	WGP	ELETTROVALVOLA GAS PILOTA PILOT FLAME SOLENOID GAS VALVE ELECTROVANNE GAZ PILOTE ELECTROVALVULA GAS PILOTO																	
HIG	LAMPADA GAS GAS LAMP LAMP DE GAZ ESPA GAS	SPGmin	PRESOSTATO GAS DI MINIMA GAS PRESSURE SWITCH MIN PRESOSTAT GAZ PRESSION MIN PRESOSTATO GAS DE MINIMA POT.																	
Hlg	LAMPADA GAS/OIL OIL LAMP THERMIN MAZOUT ESPA GAS/OILEO	Wgs	ELETTROVALVOLA GAS/OIL DI SICUREZZA EXTRA SAFETY OIL SOLENOID VALVE ELECTROVANNE MAZOUT DE SECURITE ELECTROVALVULA DE GAS/OILEO DE SEGURIDAD																	
KAZ	RELÈ RELAY RELAIS RELE	HLBT	LAMPADA DI BLOCCO TERMICO THERMAL LOCK-OUT LAMP LAMP DE THERMAL DE SECURITE ESPA DE BLOQUEO RELE TERMICO																	
KMP	CONTATTORE MOTORE POMPA CONTACTOR MOTOR PUMP CONTACTEUR MOTEUR POMPE ENRAILME MOTOR BOMBA																			
KMV	CONTATTORE MOTORE VENTILATORE REMOTE CONTROL SWITCH (FAN MOTOR) CONTACTEUR MOTEUR VENTILATEUR TELERFOR MOTEUR VENTILADOR																			
INDICAZIONE	DATA-FANMMA	DESCRIZIONE MODIFICA	Ecoflam S.p.A.		ORIGINAZIONE	MULTICALOR 300.1 - 400.1 - 500.1 PR/PR		MOTORIDUTTORE		LANDIS SQM50.481A2		SIST. RIELEAZ.		UV		INDICAZIONE		BEM43178		
SOSTA	DESIGNATO	DESIGNATO	A.T. S.p.A.		APPLICAZIONE	CONTROLO DI TENUTA		VPS 504		SOSTA		SOSTA		SOSTA		SOSTA		SOSTA		
SOSTA	CONTROLATO	CONTROLATO	LIFT TECNICO SETTORE ELETTRICO		LANDIS LFL 1.333		MOTORIDUTTORE		LANDIS SQM50.481A2		SOSTA		SOSTA		SOSTA		SOSTA		SOSTA	



- I: CAMMIA DI REGOLAZIONE ARIA ALTA FANMMA (GAS-GASOIL)
- II: CAMMIA DI CHIUSURA TOTALE
- III: CAMMIA DI REGOLAZIONE ARIA MINIMA POTENZA GAS
- IV: CAMMIA DI REGOLAZIONE ARIA MINIMA POTENZA GAS/OIL
- V: CAMMIA REGOLAZIONE ARIA ALTA FANMMA POTENZA GAS/OIL
- VI: CAMMIA REGOLAZIONE ARIA BASSA FANMMA GAS/OIL
- VII: CAMMIA NON UTILIZZATA
- VIII: CAMMIA NON UTILIZZATA

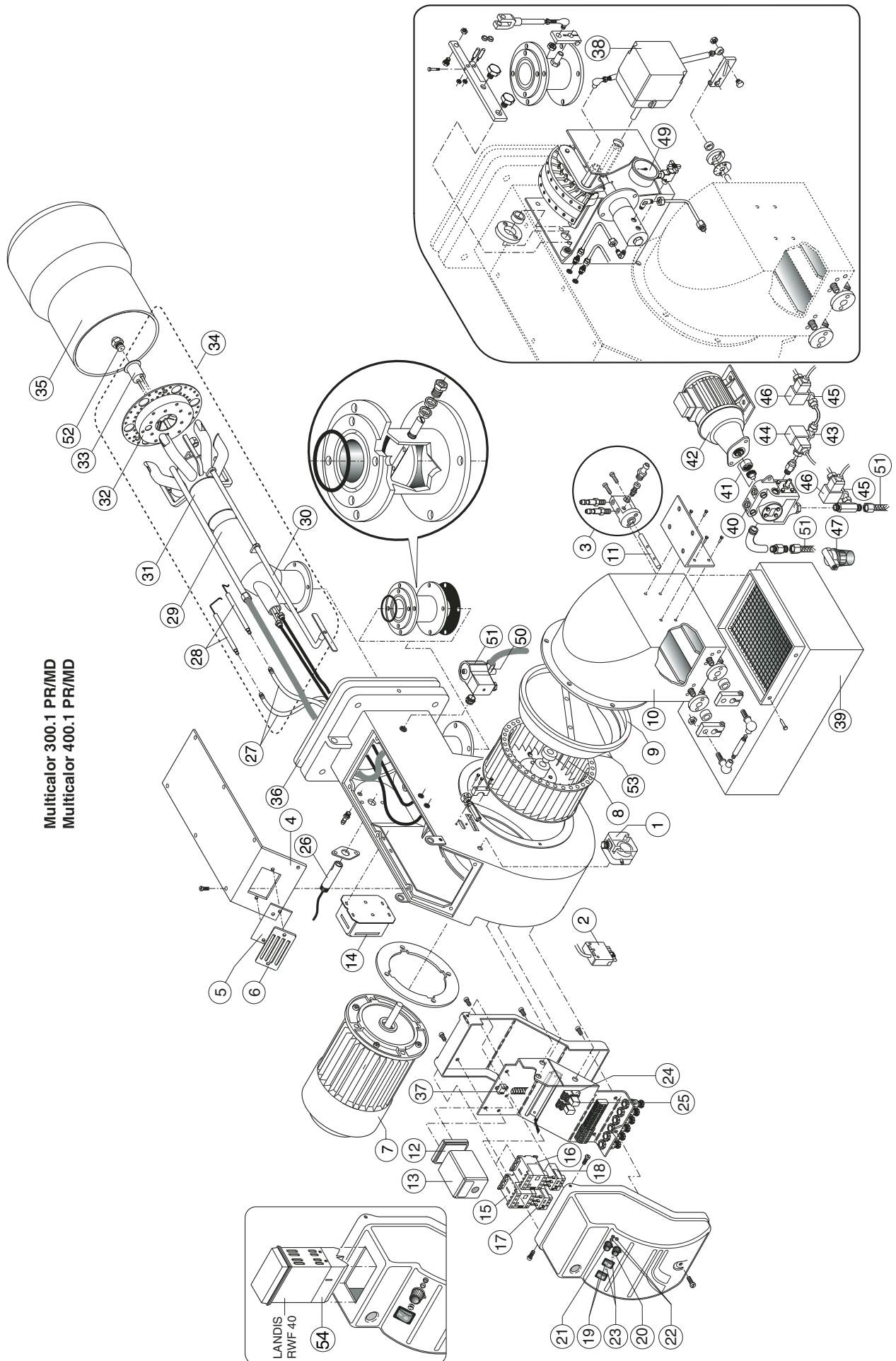


Q		Z		FU		KA		MP		MV		TV		UV		FNP		FMV		HLB		HLG		Hlg		KAZ		KMP		KMV							
INTERUTTORE GENERALE CON FUSIBILE MAIN SWITCH WITH FUSE INTERRUPTOR GENERAL AVEC FUSIBLE INTERRUPTOR GENERAL CON FUSIBLE		FILTRO ANTIDISTURBO ANTI-DAMPING FILTER FILTRE ANTIPARASITES FILTRO DE PROTECCION ANTIDISTURBO		FUSIBILE FUSE FUSIBLE FUSIBLE		RELE RELAY RELAS RELE		MOTORE POMPA OIL PUMP MOTOR MOTEUR POMPE MOTOR BOMBA		MOTORE VENTILATORE MOTOR FAN MOTEUR VENTILATEUR MOTOR VENTILADOR		TRANSFORMATORE IGNITION TRANSFORMER TRANSFORMATEUR D'ALLUMAGE TRANSFORMADOR		FOCCELLO CELLULE UV FOCCELLO		RELE TERMICO MOTORE POMPA MOTOR PUMP THERMAL RELAY RELAS THERMIQUE MOTEUR POMPE RELE TERMICO MOTOR BOMBA		RELE TERMICO MOTORE VENTILATORE MOTOR FAN THERMAL RELAY (FAN MOTOR) RELAS THERMIQUE MOTEUR VENTILATEUR RELE TERMICO MOTOR VENTILADOR		LAMPIADA DI BLOCCO LOCKOUT LAMP LAMPE DE SECURITE ESPIA DE BLOQUEO		LAMPADA GAS GAS LAMP LAMPE DE GAZ ESPIA GAS		LAMPADA GASOLIO OIL LAMP TEBION MAZOUT ESPIA GASOLIO		RELE RELAY RELAS RELE		CONTATTORIO MOTORE POMPA PUMP CONTACTOR SWITCH CONTACTEUR MOTEUR POMPE EMPALME MOTOR BOMBA		CONTATTORIO MOTORE VENTILATORE FAN MOTOR CONTROL SWITCH CONTACTEUR MOTEUR VENTILATEUR TELEBORTADOR MOTOR VENTILADOR							
SAL	INTERUTTORE DI LINEA WARNING SWITCH INTERRUPTOR DE LINEA INTERRUPTOR DE LINEA	SPA	PRESSOSTATO ARIA AIR PRESSURE SWITCH PRESOSTAT AIR PRESOSTATORIAE	STC	TERMOSTATO CALDAIA BOILER THERMOSTAT THERMOSTAT CHAUDIERE THERMOSTAT CALDEIRA	STS	TERMOSTATO DI SICUREZZA SAFETY THERMOSTAT THERMOSTAT DE SECURITE THERMOSTATO DE SEGURIDAD	Sggs	COMMUTATORE GASOLIO-GAS SWITCH OIL/GAS INTERRUPTEUR MAZOUT/GAS COMUTADOR GASOLEO-GAS	SAMA	COMMUTATORE MANUALE-AUTOMATICO MANUAL-AUTOMATIC SWITCH INTERRUPTEUR MANUEL-AUTOMATIQUE COMUTADOR MANUAL-AUTOMATICO	STAB	TERMOSTATO DI ALTA-BASSA FIAMMA HIGH-LOW FLAME THERMOSTAT THERMOSTAT GRAND-PETITE ALLURE THERMOSTATO DE ALTA-BAJA LLAMA	YVG	ELETTROVALVOLA GAS DI PRIMA FIAMMA FIRST STAGE GAS SOLENOID VALVE ELECTROVANNE GAZ PETITE ALLURE ELECTROVALVULA GAS DE 1 ^a LLAMA	YVga	ELETTROVALVOLA DI ANDATA FLOW SOLENOID VALVE ELECTROVALVOLA DI ANDATA	YVgr	ELETTROVALVOLA DI RITORNO RETURN SOLENOID VALVE ELECTROVALVOLA DI RITORNO	YVGS	ELETTROVALVOLA GAS DI SICUREZZA SAFETY GAS SOLENOID VALVE ELECTROVANNE GAZ SECURITE ELECTROVALVULA GAS DE SEGURIDAD	YVGP	ELETTROVALVOLA GAS PILOTA PILOT FLAME SOLENOID GAS VALVE ELECTROVANNE GAZ PILOTE ELECTROVALVULA GAS PILOTO	SPGmin	PRESSOSTATO GAS DI MINIMA GAS PRESSURE SWITCH MIN PRESOSTAT GAZ PRESSION MIN PRESOSTATOR GAS DE MINIMA POT.	YVgs	ELETTROVALVOLA GASOLIO DI SICUREZZA EXTRA SAFETY OIL SOLENOID VALVE ELECTROVANNE MAZOUT DE SECURITE ELECTROVALVULA DE GASOLEO DE SEGURIDAD	HELT	LAMPADA DI BLOCCO TERMICO THERMAL LOCKOUT LAMP LAMPE DE BLOQUEO RELE TERMICO ESPIA DE BLOQUEO RELE TERMICO								



- I: CANNA DI REGOLAZIONE ARIA ALTA FIAMMA (GAS-GASOLIO)
- II: CANNA DI CHIUSURA TOTALE
- III: CANNA DI REGOLAZIONE ARIA MINIMA POTENZA GAS
- IV: CANNA DI REGOLAZIONE ARIA BASSA FIAMMA GAS
- V: CANNA REGOLAZIONE ARIA MINIMA POTENZA GASOLIO
- VI: CANNA REGOLAZIONE ARIA BASSA FIAMMA GASOLIO
- VII: CANNA POTENZA
- VIII: CANNA NON UTILIZZATA

PAGINA DI 2/2		MOTORI MOTORE LANDIS SQM50.481A2		SIST. REG. AZ. UV		INDIVIDUAZIONE MULTICALOR 300.1 - 400.1 - 500.1 PR/PR		CONTROLLO TERMIA PREDISPOSTO		MOTORI MOTORE LANDIS SQM50.481A2		INDIVIDUAZIONE BEIM/43188	
APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333		APPROVECCIAZIONE LANDIS IFL 1.333	
DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA		DESCRIZIONE MODIFICA	
INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA	INDIC. MOD.	DATA FIRMA
SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO	SOSTIL.	DISSEGNO
SISTEMA	CONTROLLO	SISTEMA	CONTROLLO	SISTEMA	CONTROLLO	SISTEMA	CONTROLLO	SISTEMA	CONTROLLO	SISTEMA	CONTROLLO	SISTEMA	CONTROLLO



N°	DESCRIPTION	Multicalor 300.1 code	Multicalor 400.1 code
1	AIR PRESSURE SWITCH DUNGS LGW10 A2P	Q120	Q120
2	WIELAND PLUG 6 pin	E226	E226
3	AIR INTAKE SET	GRPA100	GRPA100
4	COVER	BFC09254/038	
5	GLASS	BFC02004	BFC02004
6	PEED WINDOM FRAME	BFC02006	BFC02006
7	MOTOR 5,5 k W	M128/017	-
	7,5 k W	-	M129/017
8	FAN 320 x 150	BFV10304/001	BFV10304/001
9	AIR CONVEYOR	BFC08256/001	BFC08256/001
10	AIR INTAKE	GRCA320	GRCA320
11	AIR INTAKE PIPE	BFS02208/201	BFS02208/201
12	CONTROL BOX BASE LANDIS	A401	A401
13	CONTROL BOX LANDIS LFL1.622	A113	A113
	LANDIS LFL1.333	A124	A124
14	IGNITION TRANSFORMER BRAHMA T8	T101	T101
15	REMOTE CONTROL SWITCH BF25.00	R617	-
	BF40.00	-	R616
	BG0910A	-	R623
16	REMOTE CONTROL SWITCH (PUMP) MC9.10	R603/1	R603/1
17	MOTOR THERMAL RELAY Lovato RF25 9-15A	R513	-
	Lovato RF25 14-23A	-	R513/1
18	MOTOR THERMAL RELAY (PUMP) Lovato RF9 2-3,3 A	R510/1	R510/1
19	MAIN SWITCH cod.4010011509	R1020	R1020
20	GAS/LIGHT-OIL SELECTOR	R1020/5	R1020/5
21	SELECTOR	R1020/5	R1020/5
22	LAMP Elettrospring EL/N-SC4	E1510	E1510
23	FUSE SUPPORT FUSIT FH-B528	E802/2	E802/2
24	RELÉ BASE Finder 5532	R905	R905
	Finder 5534	R906	R906
25	RELÉ Finder 5532	R711	R711
	Finder 5534	R712	R712
26	UV CELL LANDIS QRA 2	A205	A205
27	IGNITION CABLE TC	BFE01403/2	BFE01403/2
	TL	BFE01403/3	BFE01403/3
28	IGNITION ELECTRODES SET	E612	E612
29	PIPE TC	BFT14031/001	BFT14031/001
	TL	BFT14032/001	BFT14032/001
30	ROD TC	BFA08020/101	BFA08020/101
	TL	BFA08020/201	BFA08020/201
31	FIRING HEAD	BFT14033/001	BFT14033/001
32	FRONT DISC	BFD07042	BFD07042
33	NOZZLE HOLDER	BLT02057	BLT02057
34	INNER ASSEMBLY TC		
	TL		
35	BLAST TUBE TC	BFB07023/103	BFB07026/103
	TL	BFB07023/203	BFB07026/203
36	GASKET ISOMART	BFG04051/1	BFG04051/1
37	ANTIJAMMING FILTER	S132/4	S132/4
38	AIR DAMPER MOTOR LANDIS SQM50.481A2	M212/91	M212/91
39	SILENCER	GRSIL04/01	GRSIL04/01
40	OIL PUMP SUNTEC TA3C40105	P148/1	P148/1
41	COUPLING	MP501/4	MP501/4
42	PUMP MOTOR 740 W	M147	M147
43	OIL VALVE SIRAI L159C3	V407	V407
44	COIL SIRAI L159C3	V507	V507
45	OIL VALVE SIRAI L159C3	V407	V407
46	COIL SIRAI L159C3	V507	V507
47	OIL FILTER 70501/03	S107/5	S107/5
48	HOSES TN 18X1500	S902	S902
49	MANOMETER CEWAL R1/4 D50-40BAR	S601/1	S601/1
50	PILOT GAS VALVE BRAHMA EG12SR	V142/1	V142/1
51	COIL BRAHMA EG12SR		
52	NOZZLE FLUIDICS W2 kg/h 225-50	U802/14	-
	FLUIDICS W2 kg/h 250-50		U802/15
53	FAN SCOOP	-	BFC08059/001
54	MODULATING UNIT LANDIS RWF 40	E1215	E1215

TC = SHORT HEAD TL = LONG HEAD



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