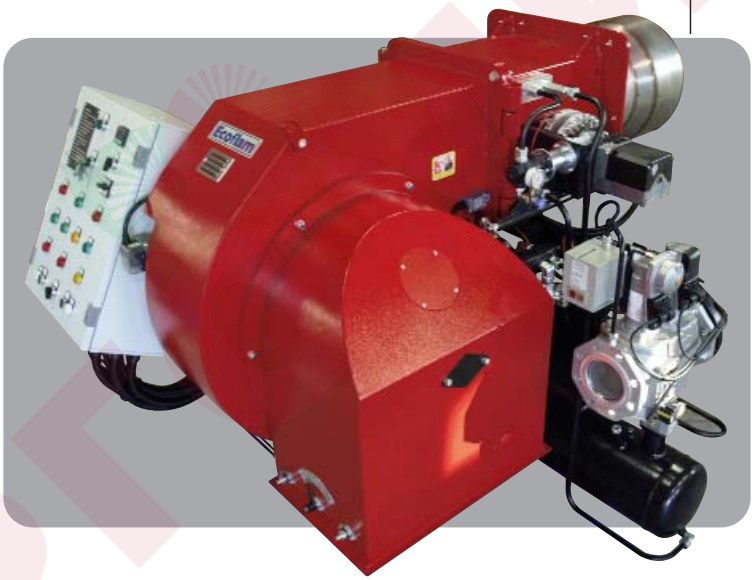
GAS / HEAVY-OIL DUAL BURNERS

Ecoflam



Multiflam 700.1
Multiflam 800.1
Multiflam 1000.1
Multiflam 1200.1

PR/PR

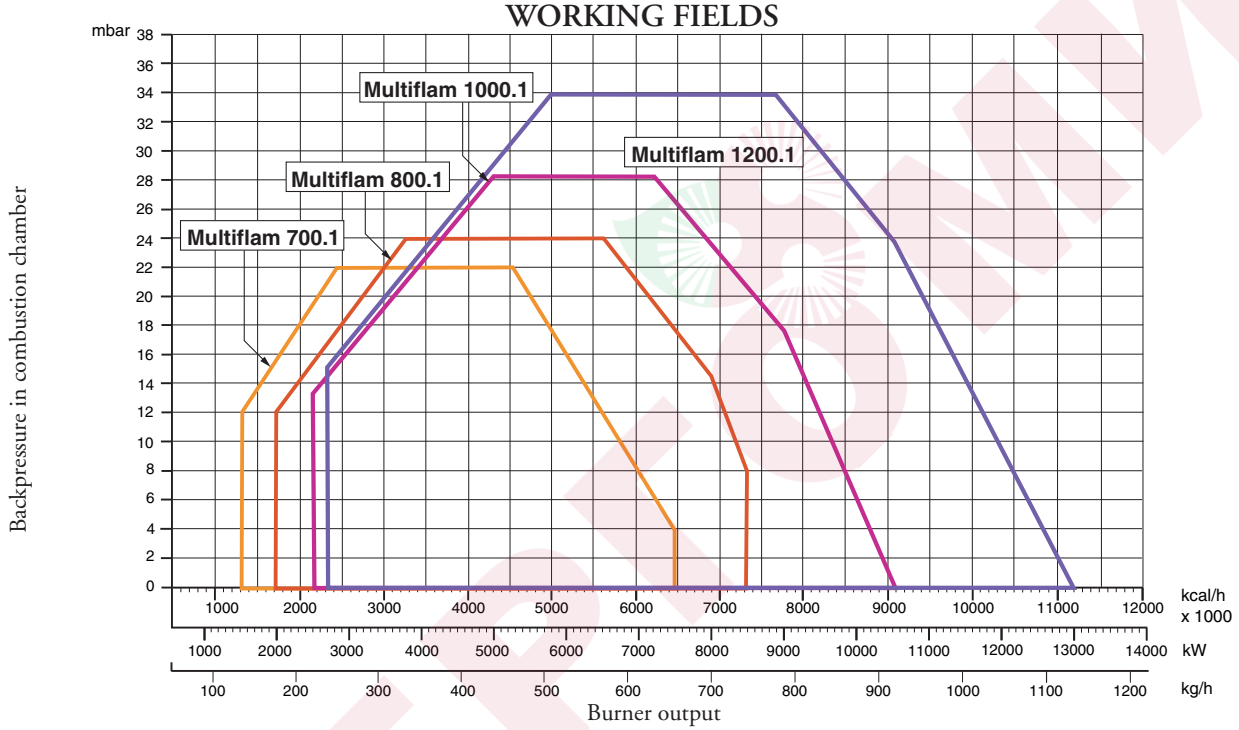
420010465301

420010465301

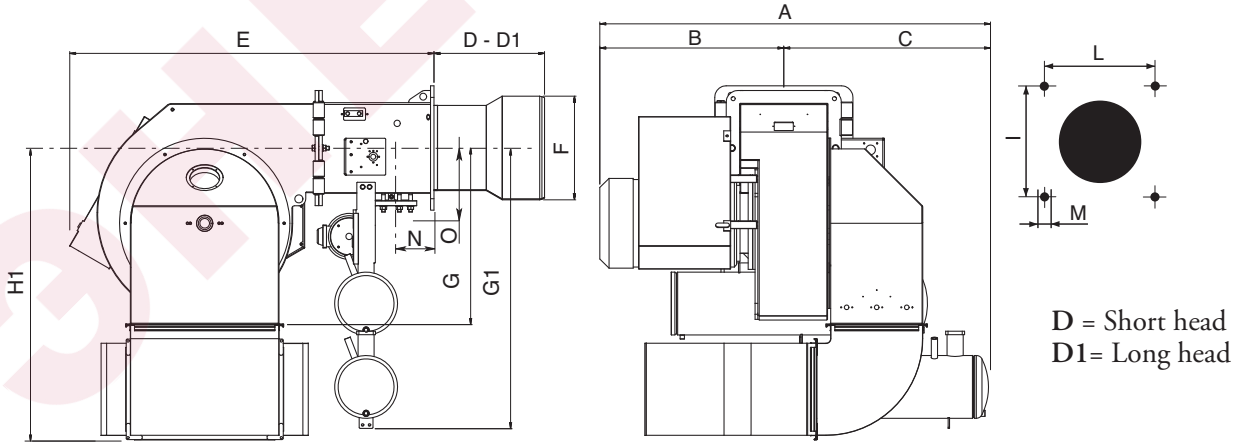
24.02.2015

Models	Multiflam	700.1 PR	800.1 PR	1000.1 PR	1200.1 PR
Thermal power max.	kW	7.500	8.500	10.500	13.000
	kcal/h	6.465.000	7.327.500	9.052.000	11.207.000
Thermal power min.	kW	1.500	2.000	2.500	2.700
	kcal/h	1.290.000	1.724.000	2.155.000	2.327.600
Max. capacity (Natural Gas)	Nm^3/h	729	855	1.056	1.318
Min. capacity (Natural Gas)	Nm^3/h	150	201	251	272
Max. heavy oil flow rate	kg/h	660	748	924	1.143
Min. heavy oil flow rate	kg/h	132	176	220	237
Gas pressure	mbar	300	300	300	300
Voltage 50 Hz	V	230/400	230/400	230/400	230/400
Motor	kW	15	18,5	22	37
Rpm	N°	2800	2800	2800	2800
Fuels:	Nat. Gas L.C.V. 8.570 kcal/Nm^3; Heavy Oil L.C.V. 9.800 kcal/kg max. visc.50°E at 50 °C				

WORKING FIELDS



OVERALL DIMENSIONS



D = Short head
D1= Long head

MODELS	A	B	C	D	D1	E	F	G	G1	H1	I	L	M	N	O
Multiflam 700.1															
Multiflam 800.1															
Multiflam 1000.1															
Multiflam 1200.1	1690	800	890	470	-	1582	450	775	900	1270	460	460	M20	195	232

ELECTRICAL CONNECTIONS

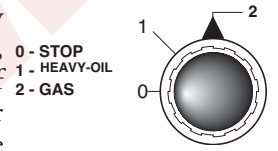
All burners factory tested at 400 V 50 Hz three-phase for motors and 230 V 50 Hz monophase with neutral for auxiliary equipment. If mains supply is 230 V 50 Hz threephase withuot neutral, change position of connectors on burner as in fig. Protect burner supply line with safety fuses and any other devices required by safety standards obtaining in the country in question.

CONNECTION TO THE GAS PIPELINE

Once connected the burner to the gas pipeline, it is necessary to control that this last is perfectly sealed. Also verify that the chimney is not obstructed. Open the gas cock and carefully bleed the piping through the pressure gauge connector, then check the pressure value trough a suitable gauge. Power on the system and adjust the thermostats to the desired temperature. When thermostats close, the sealing control device runs a seal test of valves; at the end of the test the burner will be enabled to run the start-up sequence.

BURNER START-UP

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.



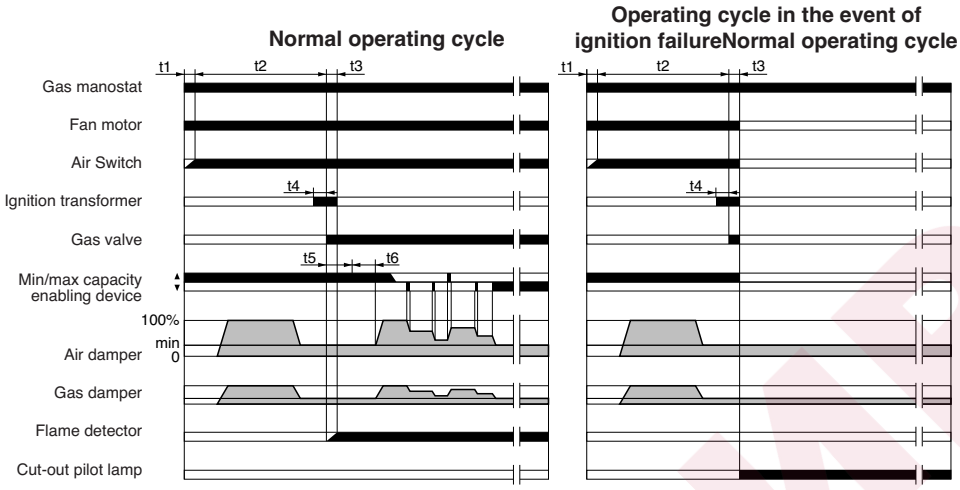
ADJUSTING THE COMBUSTION PROCESS

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.

SIEMENS , Model LFL1.622-LFL1.333 OPERATING CYCLE

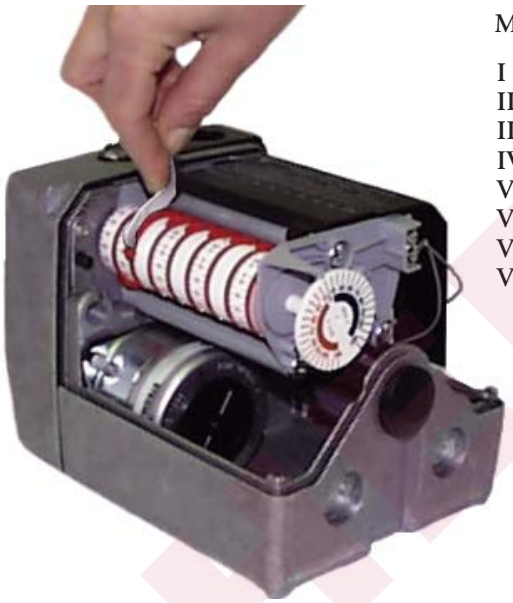
Ref.	Description	Duration
t1	Duration Waiting time for confirmation	
t2	of air pressure	8”
t3	Preventilation time	66”
t4	Safety time	2”
t5	Pressurizing time	4”
	Time for enabling operation of the main gas valve on minimum capacity	10”
t6	Time for enabling operation of the main gas valve on maximum capacity	10”



The control box starts the burner fan, to carry out the prepurging of the combustion chamber, and cheks 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 Vl 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.

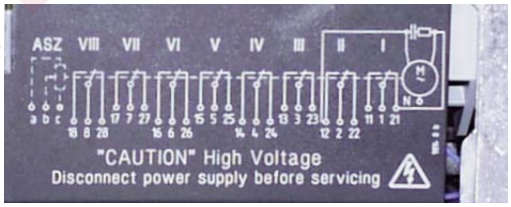
SIEMENS SQM 50.481A2 AIR DAMPER MOTOR

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



Manual change

I - High flame operating opening position adjusting cam (Heavy-Oil)
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(Heavy-Oil)
V - Low flame operating opening position adjusting cam (Gas)
VI - Low flame operating opening position adjusting cam (Heavy-Oil)
VII - High flame operating opening position adjusting cam (Gas)
VIII - Not used cam



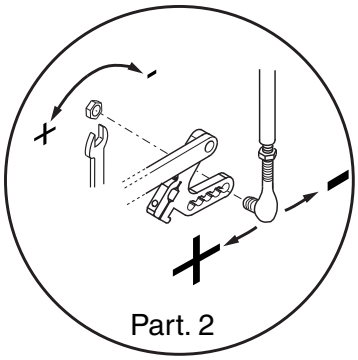
CALCULATING THE BURNER CAPACITY

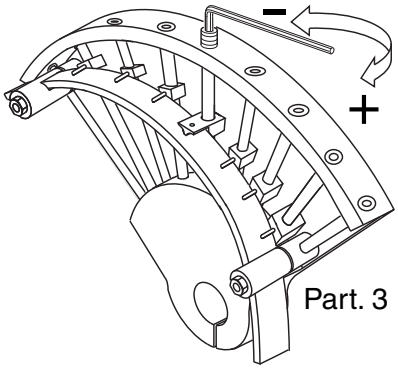
To calculate the burner's capacity in kW, proceed as follows: Check the gas flow rate (in liters) on the counter and the time of the reading in seconds.

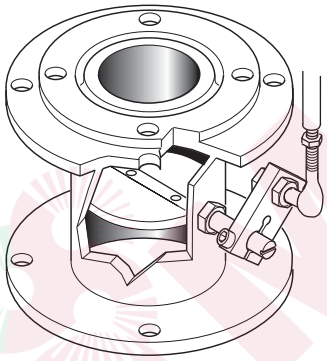
Proceed with the calculation using the following formula: $\frac{e}{sec} \times f = kW$

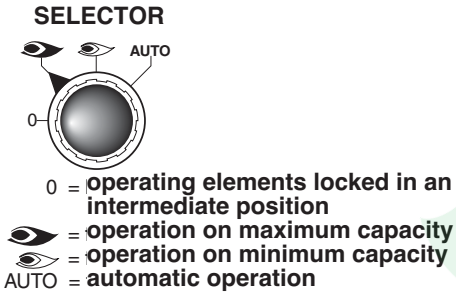
e = Litres gas
sec = Time in second
f: G20 = 34,02; G30 = 116; G31 = 88

AIR AND GAS 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.

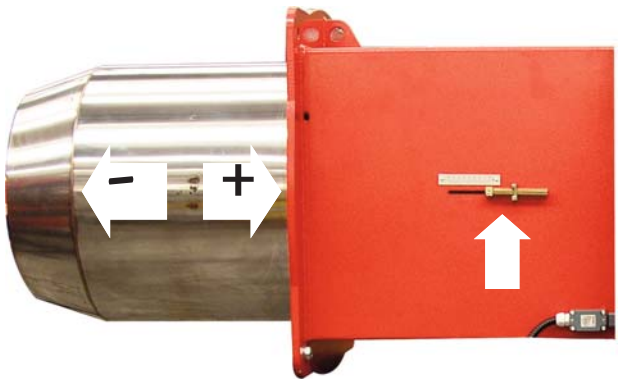
ADJUSTING THE MAXIMUM AIR FLOW RATE

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

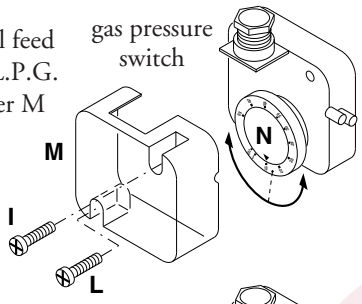
Using the selector, start the servomotor (closing or opening) and position on 0 to stop the stroke; the adjustment is made as outlined below. Repeat the operation for the other cam points.
Adjustment the intermediate gas flow rates (see figure, detail 3): - using a suitable Allen wrench, change the position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

SETTING THE FIRING HEAD



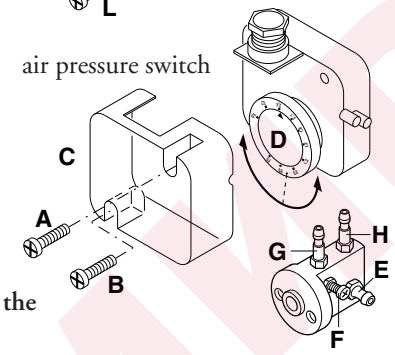
ADJUSTMENT OF GAS MINIMUM PRESSURE SWITCH

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



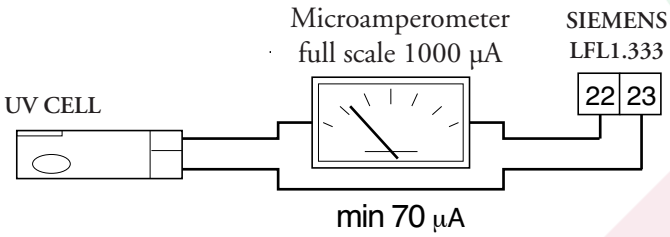
ADJUSTMENT OF THE AIR PRESSURE SWITCH

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.



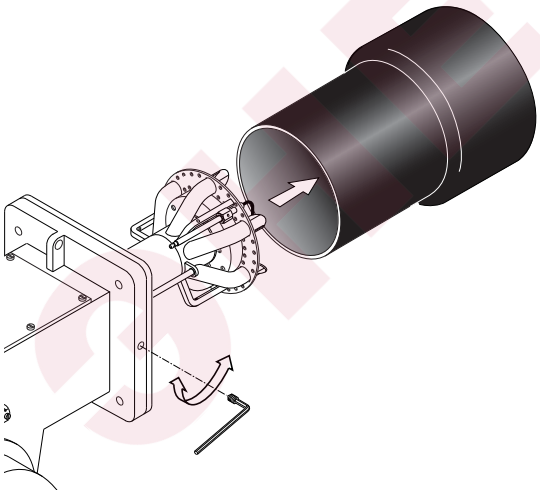
Note: The pressure measured at pressure port E must be within the limits of the pressure switch working range. If not, loose the locking nut of screw F and gradually turn the same: clockwise to reduce the pressure; counterclockwise to increase. At the end tighten the locking nut.

DETECTOR CURRENT

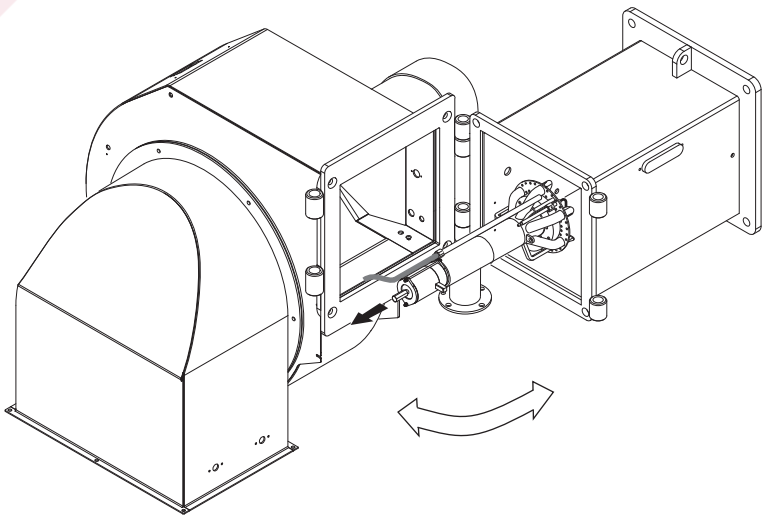


The detector current is checked by inserting a microammeter (scale 1000 µA - d.c.) in series with the uv cell. The flame detector current has to been > 70 µA.

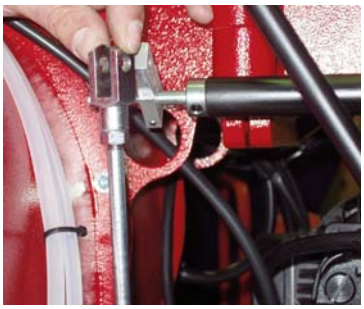
REMOVING THE BLAST TUBE



REMOVING THE FIRING HEAD

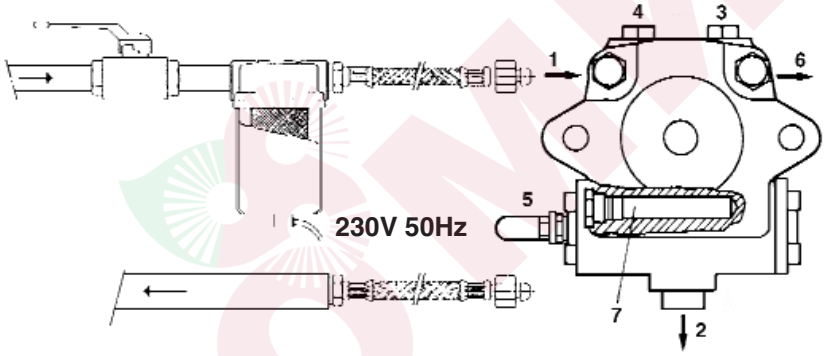


WARNING !



HEAVY OIL FEEDING

1 - Inlet
2 - Return
3 - Bleed and pressure gauge port
4 - Vacuum gauge port
5 - Pressure adjustment
6 - Nozzle outlet
7 - Heater

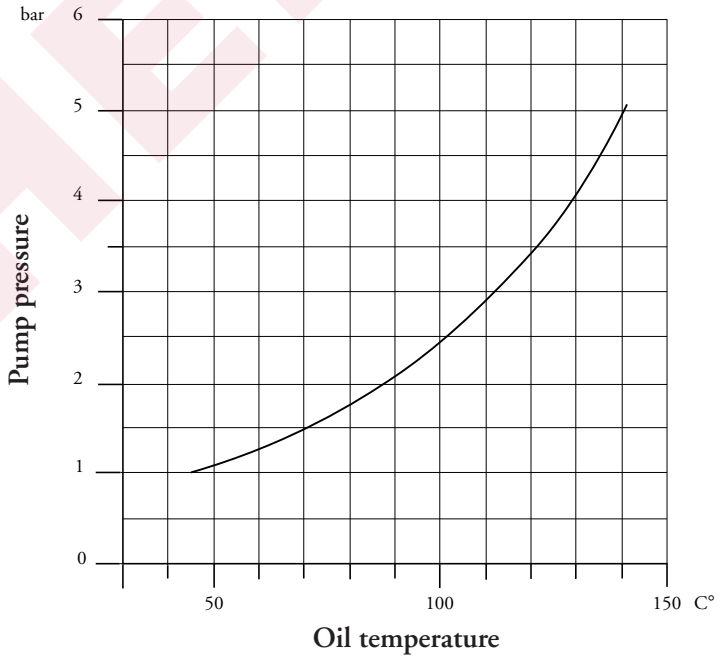


WARNING: For a correct working of the pump, verify what follows:

Pump :	SUNTEC TA...C40105	SUNTEC T...C105
Oil temperature at the pump:	Max. 140 °C	Max. 140 °C
Maximum allowable pressures:	Max. 5 bar on inlet	Max. 5 bar on inlet

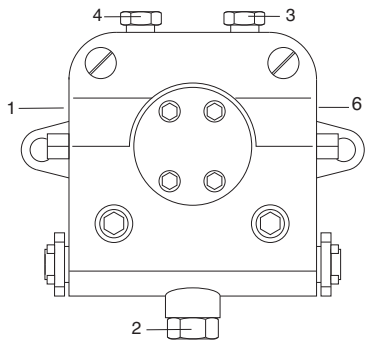
PUMP'S PRESSURE / OIL TEMPERATURE DIAGRAM

Pump inlet pressure:the vaporisation of light fraction of heated heavy oil causes premature pump wear, to avoid this, use the inlet pressures shown in the graph.

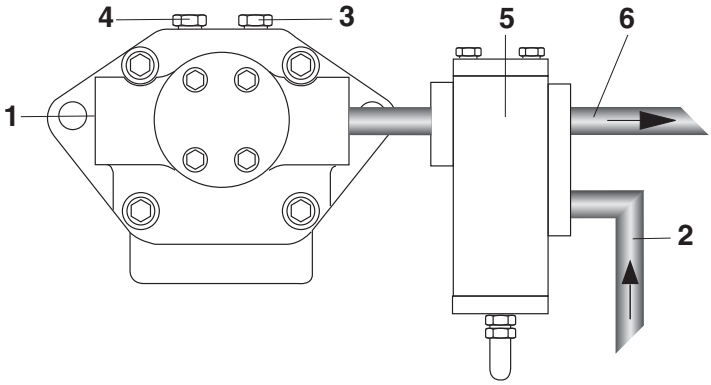


PRIMING AND ADJUSTMENT OF OIL PUMP

SUNTEC TA.....



SUNTEC T.....



1 - INLET
2 - RETURN
3 - BLEED AND PRESSURE GAUGE PORT
4 - VACUUM GAUGE PORT
5 - REGULATING VALVE TV
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 22-25 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.

PREHEATING FACILITY

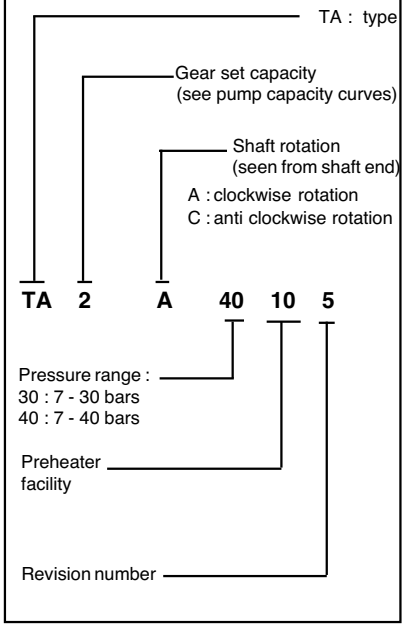
Care should be taken to avoid starting pump with high viscosity cold oil leading to pump and coupling damage. For this reason, the T and TA pump body includes a drilling to accept an electric preheater. This drilling has been located to give maximum heat transfer from the heater to the oil in the pump without there being direct contact between the heater cartridge and the oil. Heaters should be connected for a period of time prior to starting the pump. When the right temperature is reached, they can be switched off or left permanently switched on to maintain fluid oil in the pump during the periodic burner shut-downs. The oil supply, pipes and filters must be separately heated.

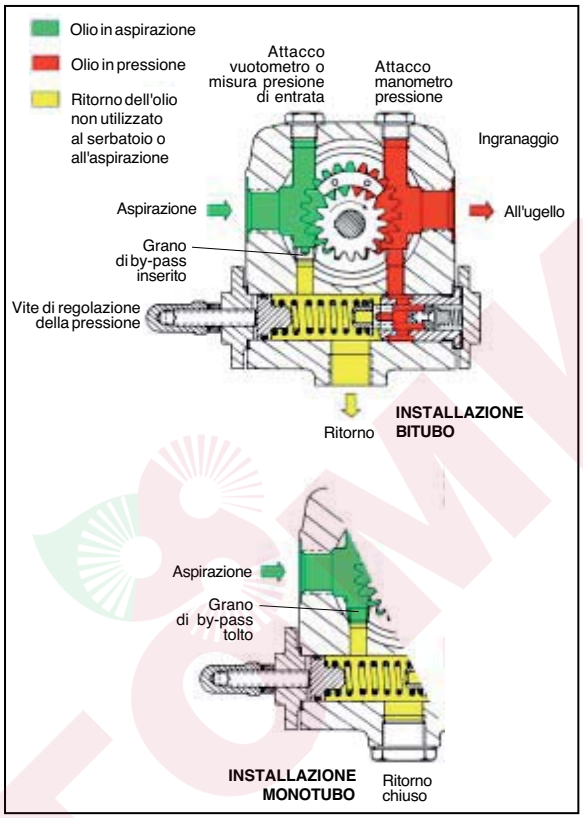
PUMP SUNTEC TA TECHNICAL DATA

Note : All TA models are delivered for two-pipe system (by-pass plug fitted in vacuum gauge port). For one-pipe system, the by-pass plug must be removed and the return port sealed by steel plug and washer.

PUMP IDENTIFICATION

(Not all model combinations are available Consult your Suntec representative)





General

Mounting	Flange mounting
Connection threads	Cylindrical according to ISO 228/1
Inlet end return	G 1/2"
To nozzle	G 1/2"
Pressure gauge port	G 1/4"
Vacuum gauge port	G 1/4"
Shaft	Ø 12 mm
By-pass plug	Inserted in vacuum gauge port for 2 pipe system; to be removed with a 3/16" Allen key for 1 pipe system
Weight	5,4 kg (TA2) - 5,7 kg (TA3) 6 kg (TA4) - 6,4 kg (TA5)

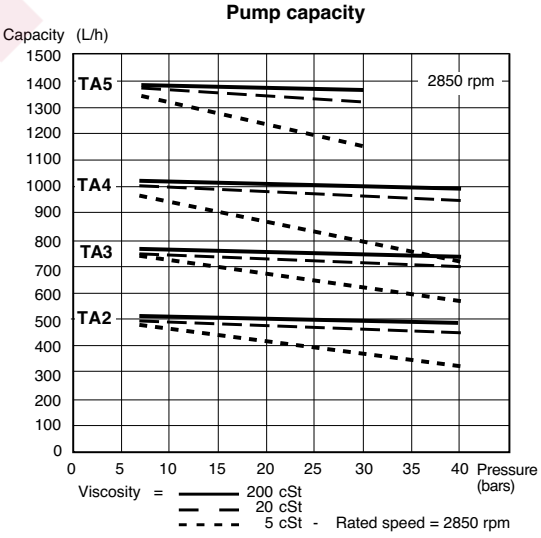
Hydraulic data

Nozzle pressure ranges	30 : 7 - 30 bars 40 : 7 - 40 bars
Delivery pressure setting	30 bars
Operating viscosity	4 - 450 cSt
Oil temperature	0 - 140°C max. in the pump
Inlet pressure	light oil : 0,45 bars max. vacuum to prevent air separation from oil heavy oil : 5 bars max.
Return pressure	light oil : 5 bars max. heavy oil : 5 bars max.
Rated speed	3600 rpm max.
Starting torque	0,3 N.m

Choice of heater

Cartridge	Ø 12 mm
Fitting	according to DIN 40430, NFC 68190 (N°9 elec.)
Rating	80-100 W

Pump capacity



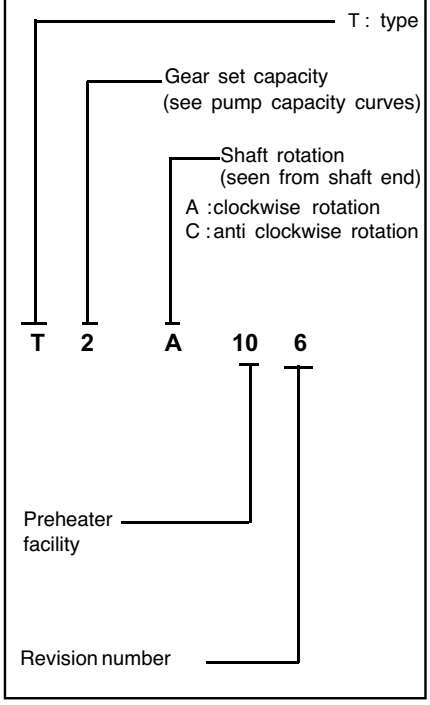
Data shown are for new pumps, with no allowance for wear.

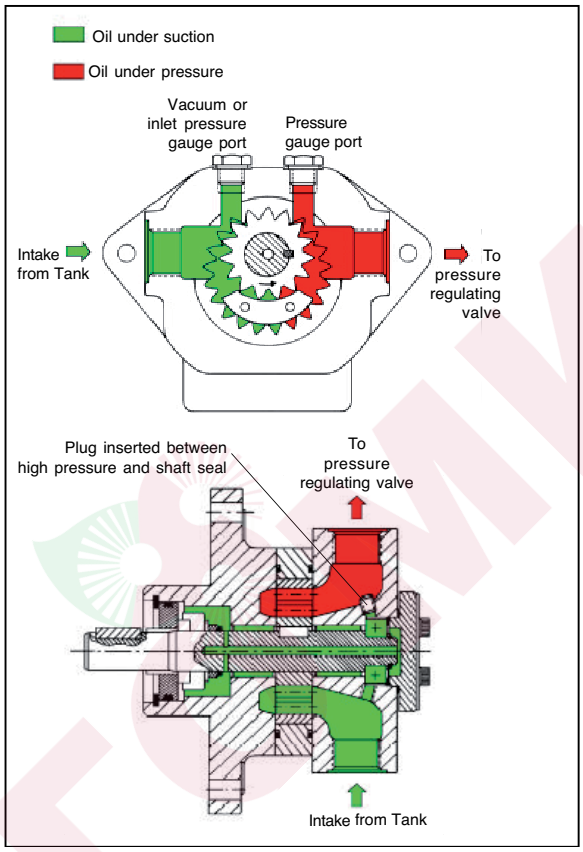
PUMP SUNTEC T TECHNICAL DATA

Note : The bypass plug inserted beween high pressure and shaft seal is only intended to change the pump rotation, check the presence of this plug with a 4 mm Allen key in the pressure outlet of the pump.
Caution : changing the direction of pump rotation involves changing of all pump connections.

PUMP IDENTIFICATION

(Not all model combinations are available Consult your Suntec representative)





General

Mounting	Flange mounting		
Connection threads	Cylindrical according to ISO 228/1		
Inlet end return	G 1/2"		
To nozzle	G 1/2"		
Pressure gauge port	G 1/4"		
Vacuum gauge port	G 1/4"		
Shaft	Ø 20 mm		
Weight	7,8 kg (T2)	-	8,1 kg (T3)
	8,7 kg (T4)	-	9,4 kg (T5)

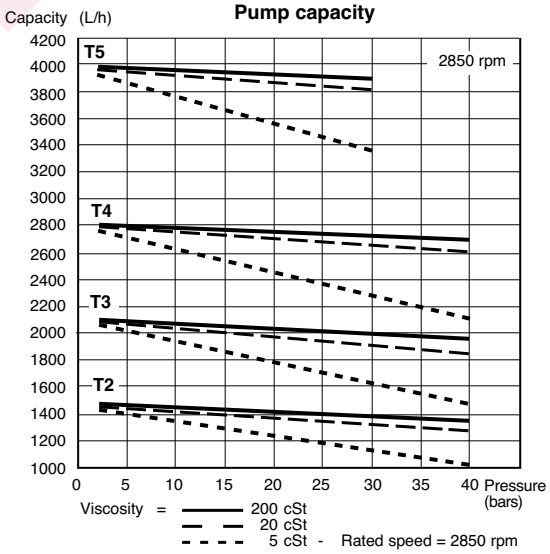
Hydraulic data

Nozzle pressure range	40 bars max. (T2, T3, T4)	
	30 bars max. (T5)	
Operating viscosity	4 - 450 cSt	
Oil temperature	0 - 150°C max. in the pump	
Inlet pressure	light oil :	0,45 bars max. vacuum to prevent air separation from oil
	heavy oil :	5 bars max.
Rated speed	3600 rpm max.	
Starting torque	0,4 N.m	

Choice of heater

Cartridge	Ø 12 mm
Fitting	according to DIN 40430, NFC 68190 (N°9 elec.)
Rating	80-100 W

Pump capacity



Data shown are for new pumps, with no allowance for wear.

Power consumption

PUMP SUNTEC TV TECHNICAL DATA

The pressure of the nozzle line is adjusted with the adjusting screw of the TV valve. The oil in excess to nozzle requirement is dumped to the return. Two pipe system : oil in excess is returned to tank. One pipe system : oil in excess is returned to pump suction.

VALVE IDENTIFICATION

(Not all model combinations are available Consult your Suntec representative)

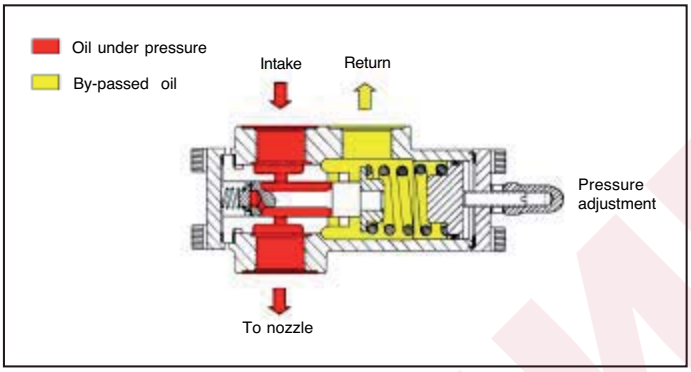
TV : Pressure regulating valve

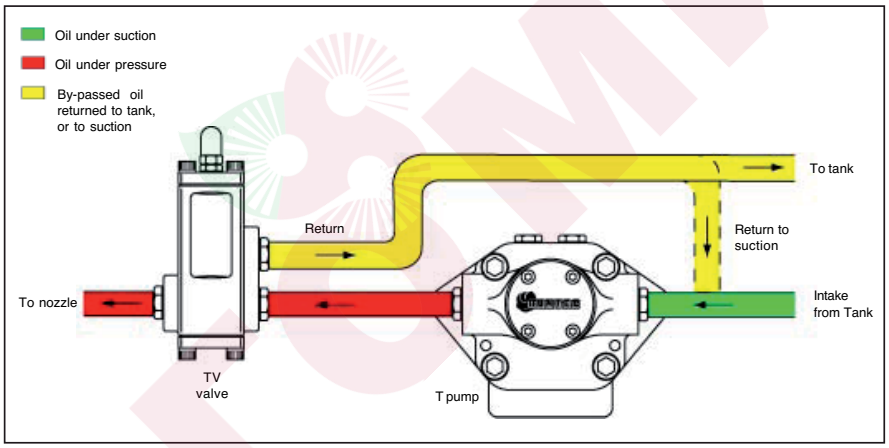
Pressure range :
10 : 2 - 10 bars
40 : 7 - 40 bars

TV 40 01 1

Regulation type :
01 : by screw
02 : by piston,
for modulating purpose

Revision number





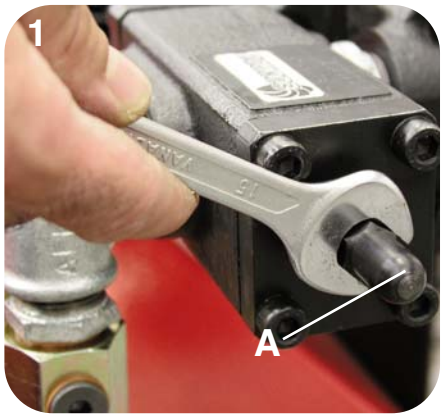
General

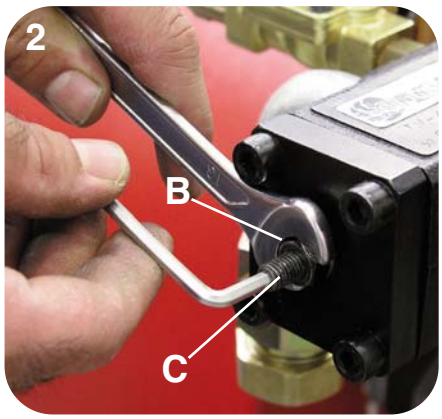
Connection threads	Cylindrical according to ISO 228/1
Inlet	G 3/4"
To nozzle	G 3/4"
Return	G 3/4"
Weight	3 kg

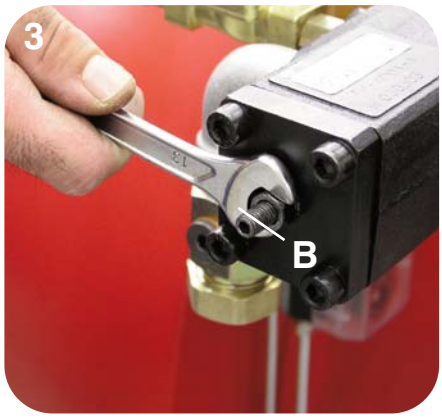
Hydraulic data

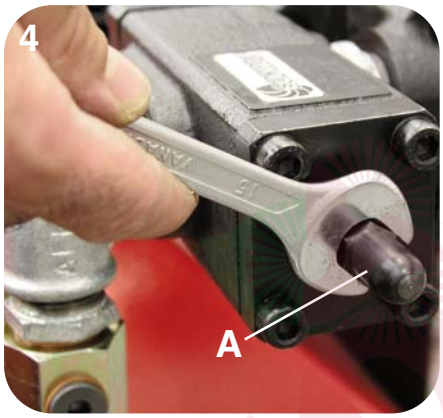
Pressure ranges	10 : 2 - 10 bars (delivery pressure setting : 7 bars) 40 : 7 - 40 bars (delivery pressure setting : 20 bars)
Operating viscosity	4 - 450 cSt
Oil temperature	0 - 150°C max. in the valve.

PRESSURE REGULATING VALVE ADJUSTMENT









1) Remove the cap A of the pressure regulating valve TV.

2) Loosen the fixing nut B and use an allen wrench on the screw C to adjust the delivery oil pressure. To increase the pressure turn clockwise, to decrease the pressure turn anti-clockwise.

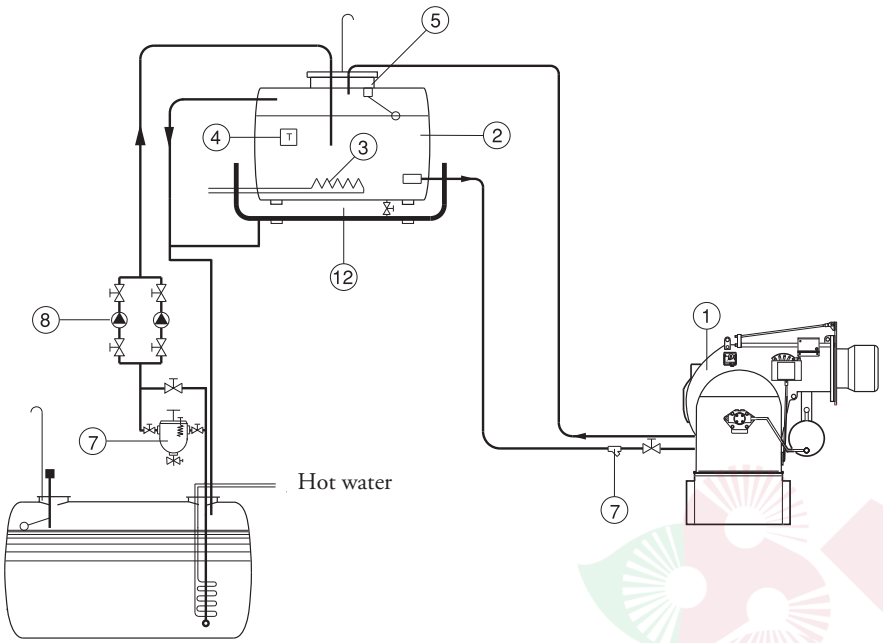
3) Tighten the nut B and pay attention not to turn also the adjusting screw.

4) Screw on the cap A, back to its previous position.

TYPE OF INSTALLATION

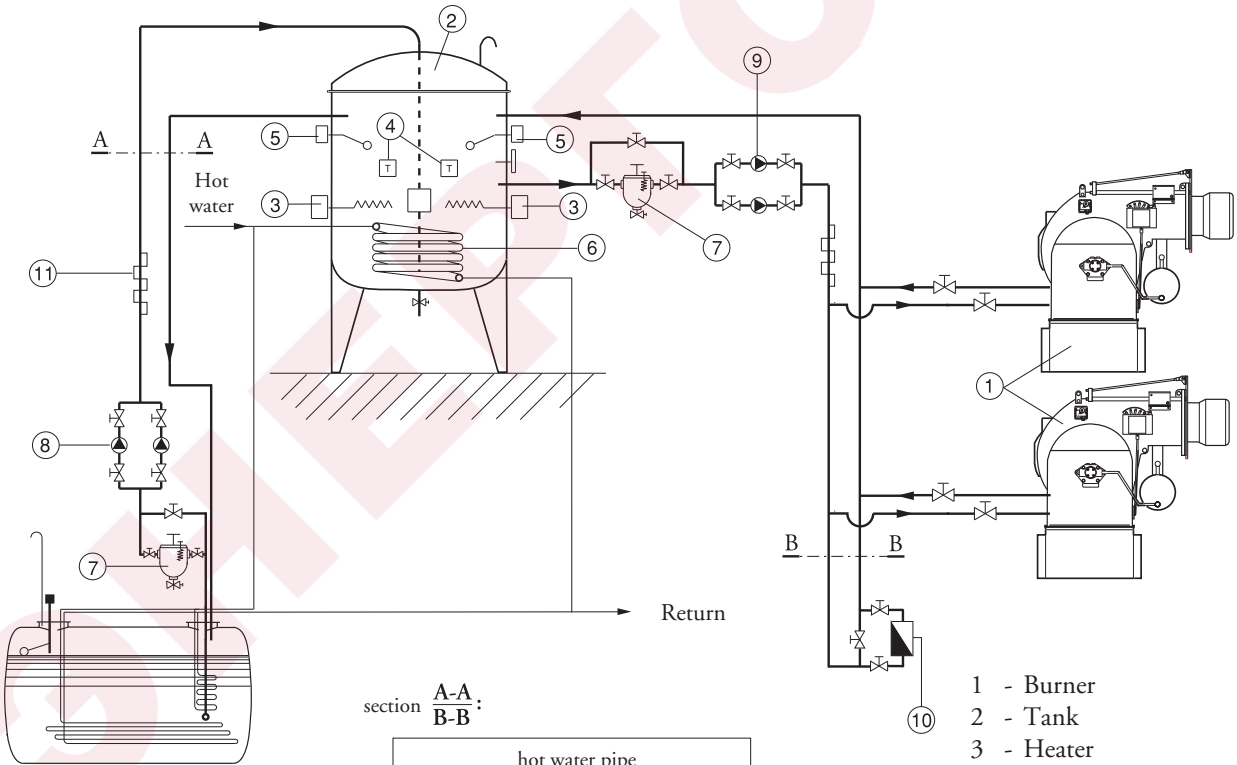
The burner must be supplied with oil heaving a min. temperature at the pump (50° C).

Drawing for fluid fuel oil up to 50°E at 50°C

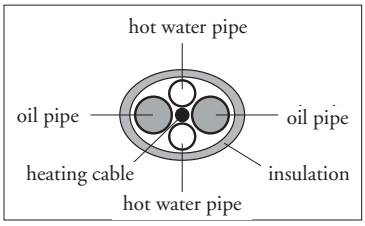


1 - Burner
2 - Tank
3 - Heater
4 - Safety/operation thermostat
5 - Switch of level
6 -
7 - Filter
8 - Load pumps
9 - Bathtub of recovery

Drawing for heavy fuel oil up to 50°E at 50°C



section A-A / B-B:



1 - Burner
2 - Tank
3 - Heater
4 - Safety/operation thermostat
5 - Level switch
6 - Heating coil
7 - Filter
8 - Load pumps
9 - Ring pumps
10 - Regulator
11 - Heating cable

CHECKS TO BE MADE TO ENSURE A PROPER INSTALLATION

Before proceeding with the filling of the fuel system and subsequent burner start up, it is advisable to carry out the following checks:

- Power line must be adequate to system's adsorbed load
- Fuses must be adequate to the system's load
- Boiler's thermostats must have been properly connected
- Voltage and frequency must be within the specified limits
- Fuel type must be the one specified by the burner manufacturer
- Feed piping section must be adequate to the requested fuel flow rate
- Filters, cocks as well as fittings must have been properly installed
- Blast tube length must be the one specified by the boiler manufacturer
- Nozzle's flow rate of the burner must be adequate to boiler's output

BEFORE PROCEEDING WITH THE FILLING OF THE OIL SYSTEM, CHECK THE FOLLOWING POINTS

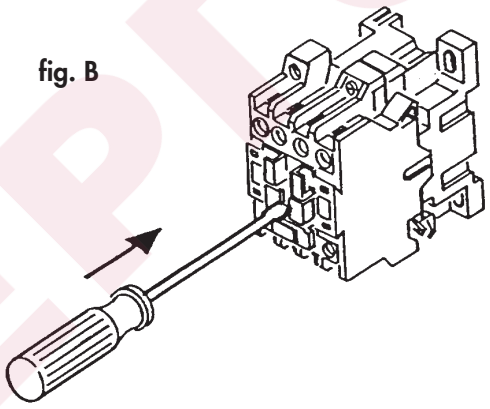
- Motor's direction of rotation (with 3phase version)
- There must be fuel in the tank.
- Fuel cocks must be open.
- Fuel return piping must be free from obstructions.

After having checked all the above items, proceed as follows:

- Connect a fuel pressure gauge.
- Disconnect the resistors power cable from the motor's remote control switch, and insulate it temporarily
- Unplug the safety box
- To press manually with a screwdriver on the pump motor's remote control switch, until the oil system is filled up(fig.5).

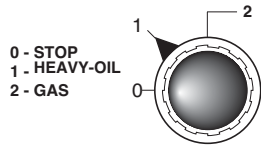
Note: the oil system can be considered filled when pressure gauge will show a constant reading.
When done, restore initial conditions.

fig. B



MODULATING OPERATION

With the bumer in the start position and the appliance thermostats enabled, power is delivered to the resistances (G) of the preheater and heating cartridges for the pumps and the fuel supply line to the head (O). When the preheater thermostat reaches the set value, (usually a minimum of about 90°C is necessary to guarantee a good level of circulation) the pump start-up is enabled (set point on out 1, if using the GEFRAN 200 thermoregulating device). If the preheating system of the tank is also equipped for a fluid exchanger (hot water, steam, diathermic oil) the thermostat may enable a contact in the terminal block for any stop-start of the fluid electrovalve. This is not a standard solution as the heated fluid is normally always connected. The pump starts to send oil (the head has already been heated by its cartridge (O) and therefore has no residue of cold dense oil) which flows from the tank to the head and then to the return line of the ring. When the head thermostat reaches the set value (usually about 70-30°C the cycle starts properly and the control programmer enables start-up. The servomotor sets itself at minimum (see chapter on regulation) acting on the air and fuel via the pressure regulator on the return.



The electromagnet (A) opens the nozzle (Q) in the followmg condition :

- sparks from the ignition electrodes are generated by the transformer also governed by the burner control device.

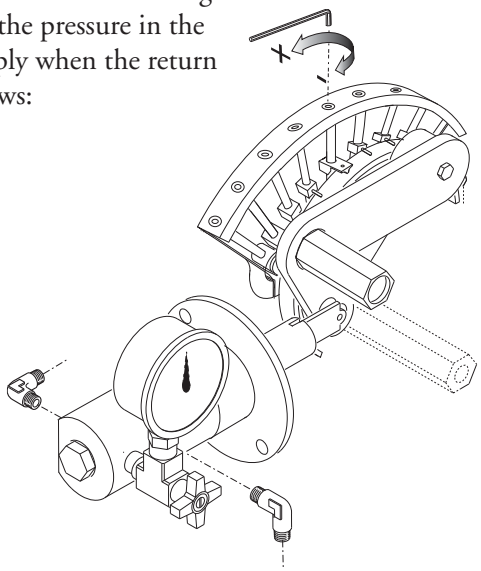
If the cell fails to detect the flame the burner shuts down (with the cyclic control programmer cutting in).
Once ignition has taken place and after the flame stabilisation period, the system starts operating in modulating mode.

- Before start-up make sure that the pump and delivery pipes are completely filled with hot fuel oil; the absence of fuel oil can cause pump seizure.
- If there is a block, a specific waring light on the programmer and on the burner front control board lights up and this signal is usually sent to the main control board of the equipment using the burner, setting off a buzzer and warning light.
- A few blocks are normal on first starting up (up to about 4); to release press the button on the programmer (also found on the front of the bumer control board) for repeating the start cycle. Should they continue to occur seek the help of a specialised technician.

N.B. The position of the programmer at the time of the block is memorised to supply an indication of the cause of this block.

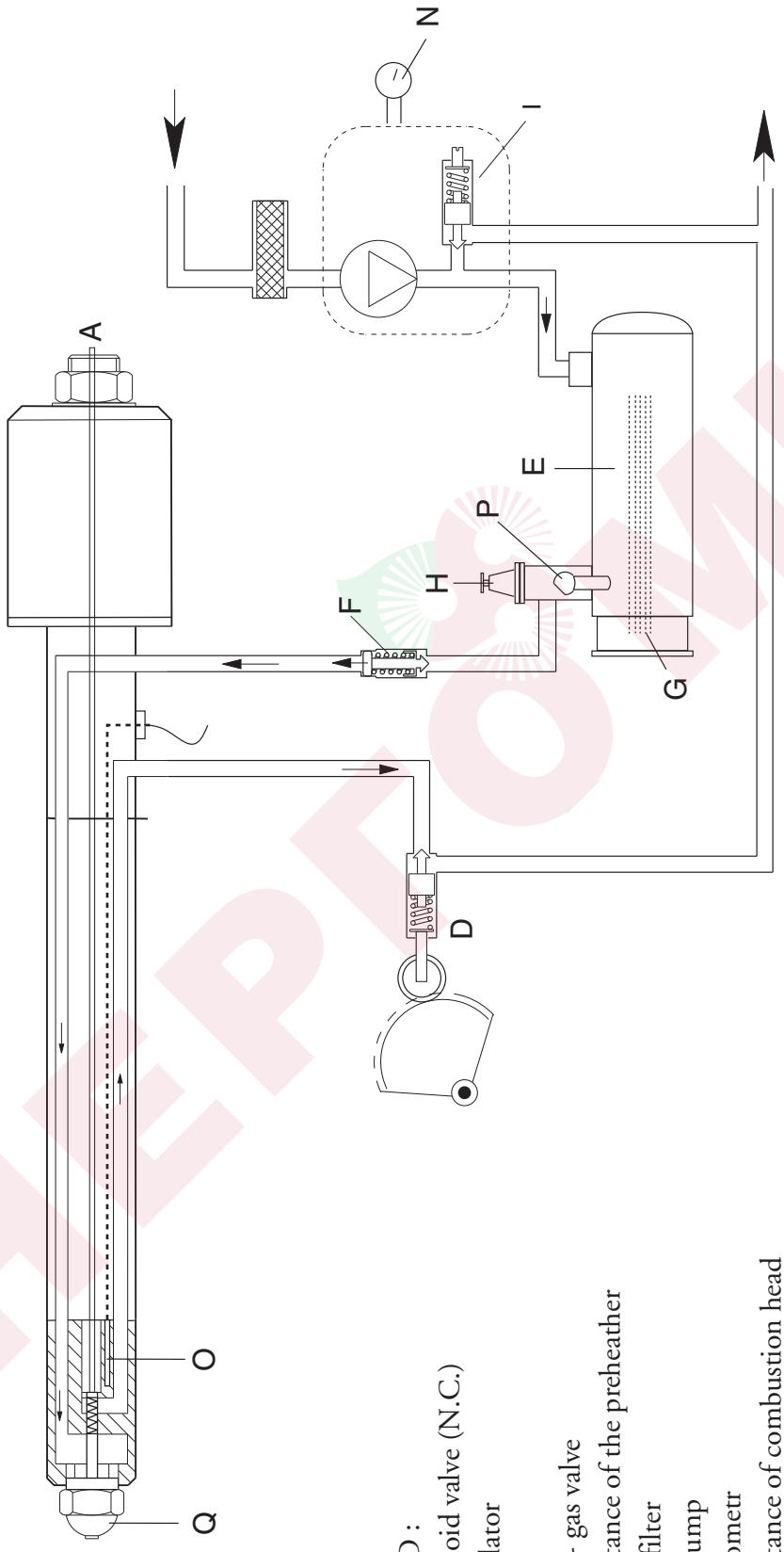
OIL DELIVERY ADJUSTMENT

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 30 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 22-30 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

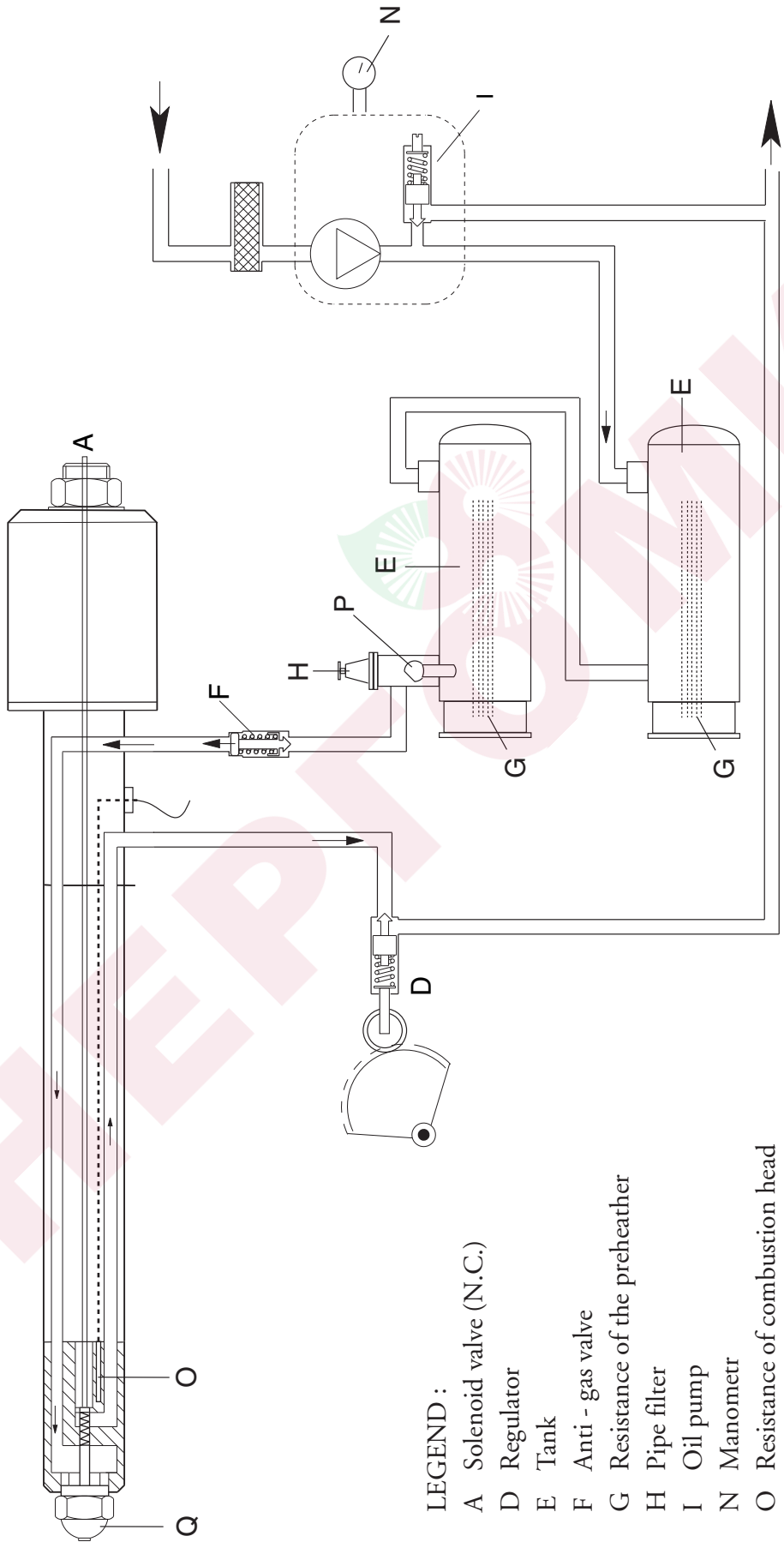
PRE - PURGING PHASE



LEGEND :

A Solenoid valve (N.C.)
D Regulator
E Tank
F Anti - gas valve
G Resistance of the preheather
H Pipe filter
I Oil pump
N Manometr
O Resistance of combustion head
P Oil temperature sensor
Q Oil nozzle

PRE - PURGING PHASE



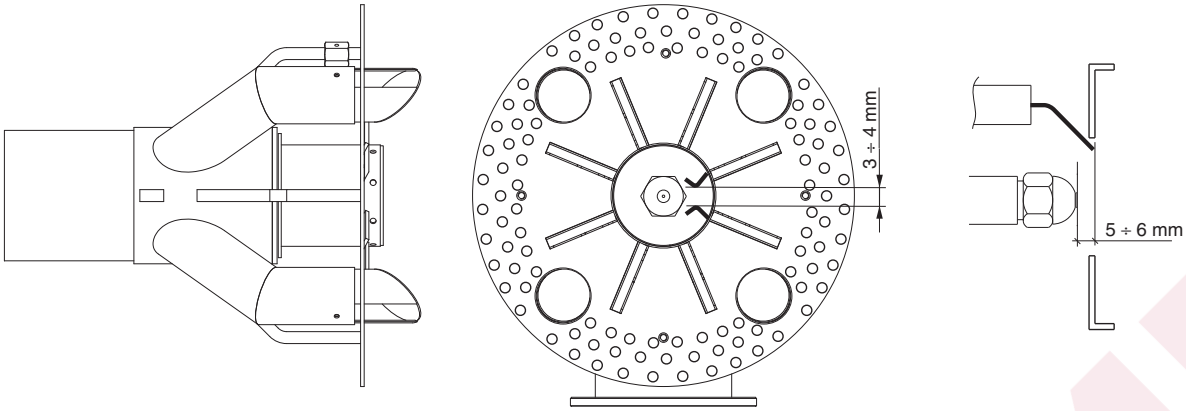
LEGEND :

A Solenoid valve (N.C.)
D Regulator
E Tank
F Anti - gas valve
G Resistance of the preheather
H Pipe filter
I Oil pump
N Manometr
O Resistance of combustion head
P Oil temperature sensor
Q Oil nozzle

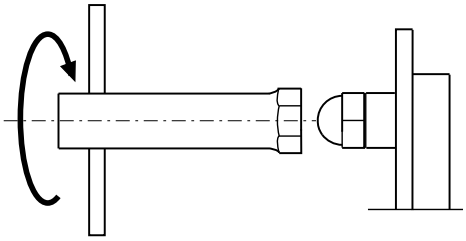
ADJUSTMENT OF FUEL TEMPERATURE

The display shows oil temperature.
The 4 leds are related to the following functions:
Out 1: contact driving working heaters. Out 2: contact driving upper heaters KMRL1. Out 3: contact driving upper heaters KMRL2. Out 4: Burner start driving contact (as the oil reaches this temp the pump is activated).
- The temperatures are already properly Factory setted :Out 1(**113°**)- Out 2(**115°**)- Out 3(**120°**)- Out 4(**105°**).
- To modify factory temperature setting act as follows:
- press key "**F**"
- the led Out1 starts to flash, if You need to modify minimum oil temperature press increase or decrease button, after confirm the new value pressing again "**F**"
- if You need to modify an other temperature press again "**F**" untill You the relevant led flashes.
Please take care: if key "**F**" is pressed for a too long time, You enter in "configuration level" phase1, (see "CF1" on the display); these parameters are Factory setted and they have not to be modified: if You enter this function – You see CF1 flashing on the display – wait 10 seconds untill the regulator automatically goes out from "configuration level".

POSITION OF IGNITION ELECTRODES



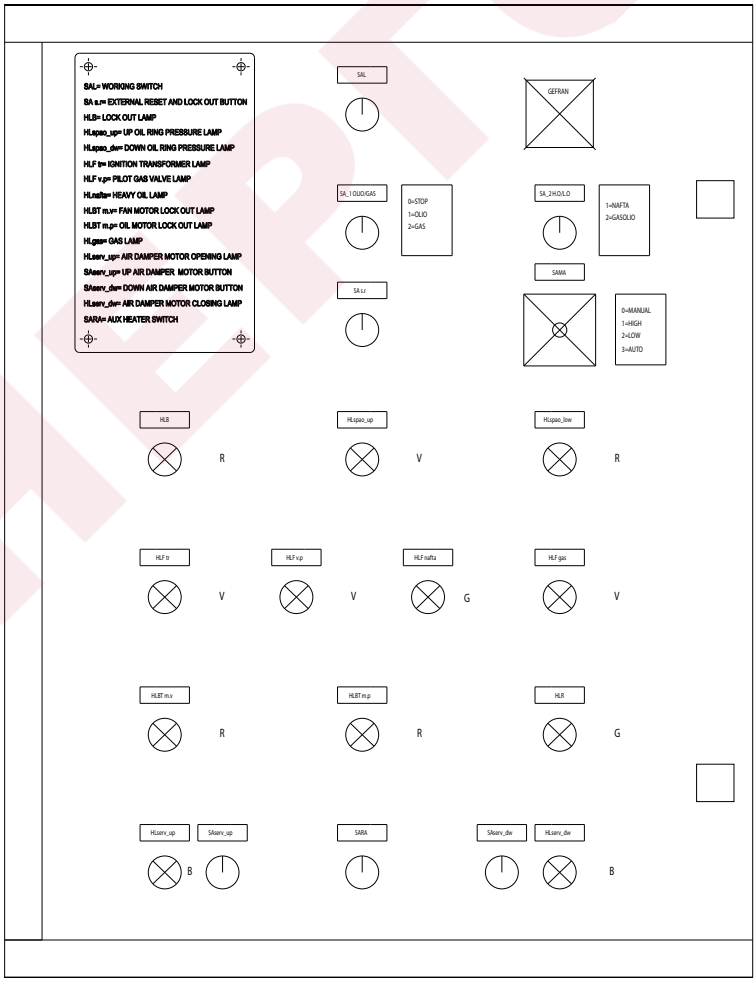
NOZZLE CLEANING AND REPLACEMENT



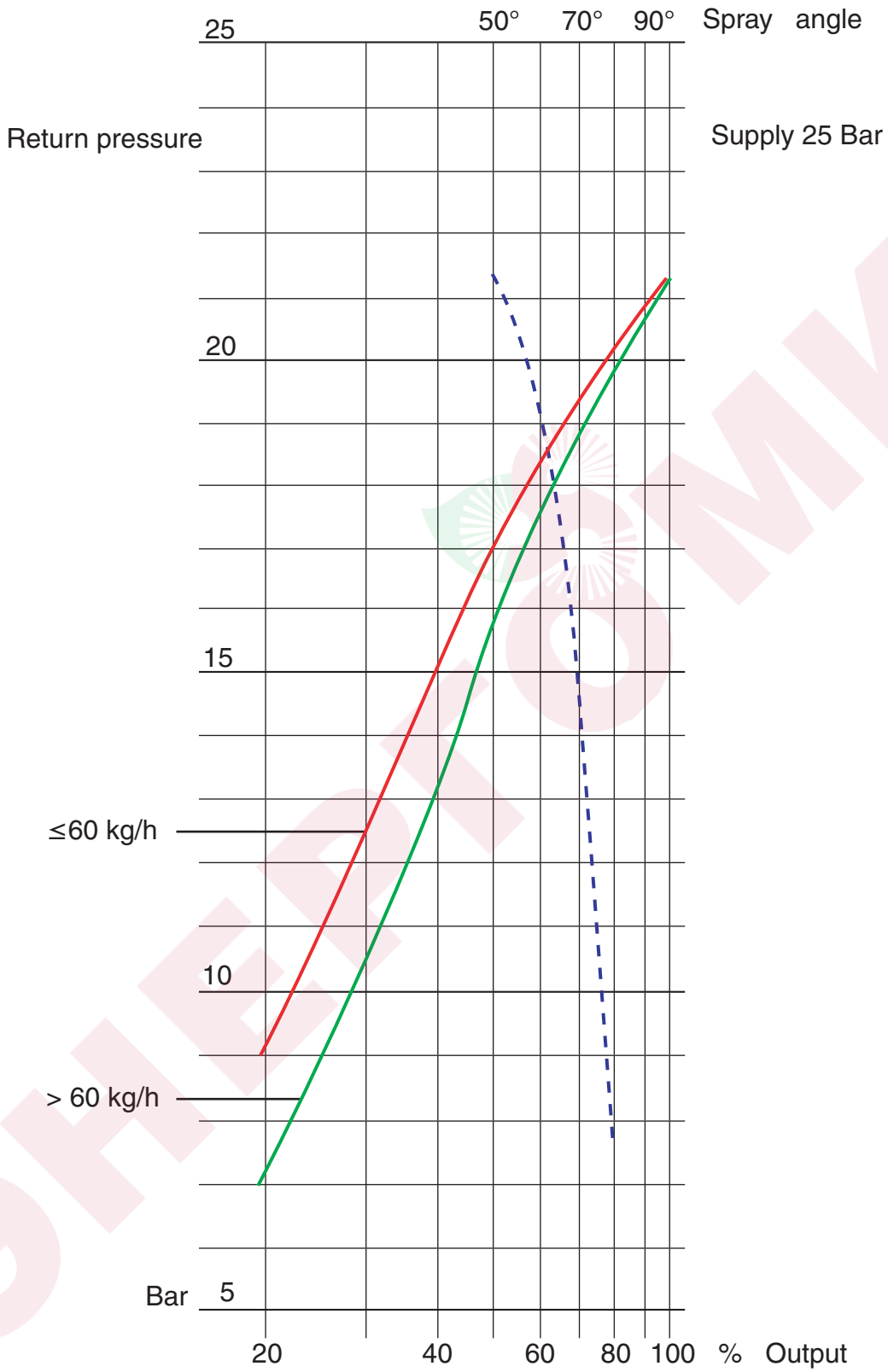
Use only the suitable box wrench provided for this operation to remove the nozzle, taking care to not damage the electrodes. Fit the new nozzle with the same care.

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

DESCRIPTION OF THE CONTROL PANEL OF THE BURNER



FLUIDICS NOZZLE



BERGONZO NOZZLE TABLE

Pump pressure (bar)

GPH		Atm	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
125	A	20	22	23	25	26	27	29	32	34	37	40	44	50	57	65	77	95												
125	B	20	285	280	275	274	272	271	245	235	220	205	190	175	160	145	130	115												
125	A	25	24	25	26	27	28	29	30	31	32	34	35	37	40	43	45	52	60	68	80	95	115							
125	B	25	330	328	325	320	315	307	300	285	280	275	260	250	235	220	190	180	180	170	168	150	135							
125	A	30	25	26	26	27	28	28	29	30	31	32	33	35	37	38	42	43	46	50	54	60	65	72	80	90	108	130		
125	B	30	370	365	360	355	350	348	345	340	335	328	320	305	300	290	280	270	260	245	240	225	210	190	180	165	150	130		
150	A	20	30	33	34	35	37	39	43	46	50	55	60	68	75	85	100	120												
150	B	20	325	320	315	308	300	290	285	275	260	250	240	220	190	180	160	140												
150	A	25	32	33	34	35	37	37	38	42	45	47	50	55	60	65	70	78	83	94	110	120	150							
150	B	25	375	370	365	363	358	355	350	345	330	320	310	300	285	275	260	250	240	220	195	180	150							
150	A	30	35	36	36	37	37	37	39	41	42	45	46	48	50	54	58	62	65	70	75	80	88	95	110	120	140	180		
150	B	30	420	420	415	410	405	400	400	395	390	380	375	365	350	345	340	330	320	300	290	280	270	250	240	220	200	180		
175	A	20	35	37	39	42	44	46	48	55	58	62	68	75	84	95	118	155												
175	B	20	350	350	349	348	330	325	315	300	290	280	265	248	225	195	175	155												
175	A	25	35	36	37	41	42	44	45	47	50	52	58	62	65	70	78	88	95	110	120	140	170							
175	B	25	395	390	385	382	380	378	370	360	350	348	330	325	315	300	280	275	260	240	225	200	170							
175	A	30	42	43	44	45	46	47	48	50	52	55	58	60	62	65	70	72	78	85	90	100	110	118	135	158	190			
175	B	30	440	440	435	430	425	420	415	410	408	400	390	380	370	360	350	330	320	300	285	275	260	250	235	220	190			
200	A	20	38	40	42	44	47	50	55	60	65	70	80	90	100	120	140	170												
200	B	20	400	398	388	380	370	360	350	340	330	320	300	280	275	250	230	210												
200	A	25	42	43	43	44	45	47	50	52	55	60	65	70	78	85	95	105	115	130	150	170	220							
200	B	25	450	448	448	445	440	430	425	412	405	400	390	380	375	360	345	325	315	290	280	260	220							
200	A	30	48	49	50	51	52	53	55	56	58	60	62	64	68	70	75	80	85	92	100	110	120	130	150	175	200			
200	B	30	500	500	495	490	485	480	475	470	460	450	440	430	420	410	395	385	375	350	340	325	315	300	290	275	260			
225	A	20	42	43	45	47	48	52	56	60	65	70	80	90	100	115	140	180												
225	B	20	420	410	405	400	395	380	375	365	350	345	335	320	300	280	265	250												
225	A	25	45	46	47	48	50	52	55	58	60	63	68	73	80	90	98	108	120	140	160	180	225							
225	B	25	475	468	460	455	450	450	445	437	425	410	400	380	375	360	350	340	315	300	280	260	240							
225	A	30	50	50	51	52	52	53	54	55	57	60	62	66	68	75	80	88	94	100	110	120	130	140	155	175	200	240		
225	B	30	510	510	505	505	503	500	495	490	480	460	440	430	420	410	400	390	380	370	360	350	340	325	310	300	285	275		
250	A	20	42	44	46	47	50	55	60	65	70	80	90	100	115	140	160	220												
250	B	20	425	415	408	403	400	380	375	365	350	338	325	300	280	265	250	240												
250	A	25	46	47	49	50	52	55	58	60	63	66	72	78	85	92	100	110	130	140	165	200								
250	B	25	480	475	475	470	465	450	445	440	425	410	400	380	375	355	340	330	310	300	280	275								
250	A	30	52	52	52	53	54	55	58	60	62	65	68	72	78	82	90	95	105	105	125	135	150	165	180	220	260			
250	B	30	520	515	515	510	510	505	500	500	490	480	475	460	450	440	430	420	400	380	370	360	350	340	325	310	280			
275	A	20	52	53	55	58	60	63	68	75	80	90	100	115	125	150	170	225												
275	B	20	540	530	520	510	500	490	475	450	440	420	400	375	350	325	300	275												
275	A	25	55	56	57	58	60	64	68	70	75	80	85	95	100	115	125	135	150	170	190	225	265							
275	B	25	600	600	595	590	580	570	560	550	540	525	510	500	480	460	440	425	400	375	350	325	300							
275	A	30	60	61	62	63	64	65	66	67	70	74	78	82	88	95	100	110	118	125	135	150	165	180	200	240	275			
275	B	30	680	675	668	662	658	650	640	630	620	610	600	590	580	565	555	545	525	500	480	460	440	425	400	375	350			

output (kg/h)

A= nozzle output

B= pump output

BERGONZO NOZZLE TABLE

Pump pressure (bar)

GPH		Atm	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
300	A	20	55	58	60	64	65	70	76	85	92	105	118	135	145	175	200	270												
300	B	20	550	535	525	515	500	485	470	450	430	410	380	375	360	330	310	280												
300	A	25	24	25	26	27	28	29	30	31	32	34	35	37	40	43	45	52	60	68	80	95	115							
300	B	25	330	328	325	320	315	307	300	285	280	275	260	250	235	220	190	180	180	170	168	150	135							
300	A	30	25	26	26	27	28	28	29	30	31	32	33	35	37	38	42	43	46	50	54	60	65	72	80	90	108	130		
300	B	30	370	365	360	355	350	348	345	340	335	328	320	305	300	290	280	270	260	245	240	225	210	190	180	165	150	130		
325	A	20	58	62	65	68	72	78	88	95	110	118	135	150	170	200	240	290												
325	B	20	570	560	550	530	510	500	485	475	450	440	425	400	370	350	330	300												
325	A	25	65	67	69	72	74	75	80	85	90	98	105	115	125	140	160	170	190	225	270	320								
325	B	25	650	643	638	630	628	620	610	600	590	580	565	540	520	500	475	450	425	400	375	350								
325	A	30	68	69	70	71	73	75	78	82	88	92	98	105	110	120	130	140	150	165	180	200	225	250	280	320	360			
325	B	30	720	715	710	705	702	700	700	690	680	670	655	620	610	600	580	570	550	520	500	480	460	440	420	400	380			
350	A	20	64	68	70	75	80	90	98	105	118	130	145	160	180	210	250	310												
350	B	20	620	600	590	580	570	550	530	500	480	460	440	420	400	375	360	340												
350	A	25	68	69	70	75	80	85	90	98	105	112	120	130	145	160	170	190	210	240	270	300	350							
350	B	25	700	700	690	680	670	660	650	630	610	590	580	550	520	500	480	465	450	430	410	380	360							
350	A	30	68	69	70	73	78	82	88	92	98	105	110	120	128	138	145	160	170	190	210	225	250	275	300	350	375			
350	B	30	790	780	770	760	750	740	720	710	700	690	680	665	650	625	610	590	570	550	520	505	490	475	440	425	400			
375	A	20	72	76	82	88	94	105	115	125	140	155	170	195	225	250	300													
375	B	20	630	615	600	590	580	565	550	520	490	475	450	425	400	375	360													
375	A	25	78	80	85	90	95	100	105	110	120	130	140	155	170	190	200	230	250	280	325	375								
375	B	25	700	690	680	670	660	650	640	625	615	600	580	565	550	520	500	480	460	440	420	400								
375	A	30	90	92	93	95	98	100	105	110	115	120	130	140	150	160	170	180	200	220	240	260	280	320	350	400				
375	B	30	800	790	786	778	770	760	750	730	710	700	690	670	650	630	610	600	590	570	550	530	510	490	470	440				
400	A	20	85	90	98	105	115	125	135	150	165	185	210	240	270	320														
400	B	20	610	605	595	585	575	565	550	520	500	480	460	440	420	400														
400	A	25	85	90	98	104	110	118	125	135	145	155	170	190	200	225	250	280	310	360	400									
400	B	25	710	705	700	695	690	680	670	650	630	610	590	580	560	540	520	500	480	450	425									
400	A	30	100	102	106	110	114	117	120	130	138	148	158	170	180	195	210	230	250	275	300	340	360	400	440					
400	B	30	800	790	786	778	770	760	750	730	710	700	690	670	650	630	610	600	590	570	550	530	510	490	470					
425	A	20	78	80	85	90	95	100	110	120	135	150	170	190	220	250	300	350												
425	B	20	700	690	680	670	650	630	615	600	590	570	530	510	490	450	410	380												
425	A	25	85	88	90	93	95	100	105	110	120	130	140	150	165	180	195	225	250	280	325	380								
425	B	25	750	745	740	730	720	710	700	685	675	665	650	630	610	600	580	560	540	515	490	430								
425	A	30	91	92	94	96	98	99	100	104	110	118	128	138	145	158	168	180	195	210	235	260	280	320	350	400	450			
425	B	30	820	816	812	808	804	800	790	780	770	760	750	740	730	720	710	695	680	650	625	600	590	570	540	515	490			
450	A	20	86	90	94	98	105	115	125	135	150	170	195	225	250	280	340	380												
450	B	20	700	685	660	645	635	620	605	585	570	545	530	515	490	470	440	410												
450	A	25	92	95	100	105	110	115	120	130	140	150	165	175	190	210	230	260	280	325	375	425								
450	B	25	805	800	790	775	760	745	730	715	700	690	670	650	625	605	580	560	540	520	500	480								
450	A	30	100	102	105	108	111	114	117	120	130	140	150	160	170	180	190	220	240	260	280	310	350	380	425	475				
450	B	30	860	856	850	842	834	826	818	810	790	760	750	740	730	720	700	680	660	640	620	600	580	540	520	500				

output (kg/h)

A= nozzle output B= pump output

Ecoflam

BERGONZO NOZZLE TABLE

Pump pressure (bar)

GPH		Atm	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
GPH		Atm	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
475	A	20	82	88	95	100	110	120	130	145	160	170	195	225	260	300	360													
475	B	20	800	780	760	740	720	700	680	655	625	600	580	560	520	480	440													
475	A	25	98	102	108	112	116	120	130	140	150	160	170	180	195	225	250	275	300	350	400	475								
475	B	25	910	905	900	880	860	840	820	800	780	750	730	710	690	670	650	620	590	560	530	500								
475	A	30	104	107	110	113	117	120	125	135	145	155	163	170	180	190	200	225	250	275	300	325	360	390	440	480				
475	B	30	1000	990	975	965	945	930	915	900	890	880	860	840	820	800	780	760	730	700	680	660	640	620	590	460				
500	A	20	94	102	106	113	120	130	150	170	190	210	230	250	280	325	380													
500	B	20	800	780	760	740	720	710	680	660	640	610	580	560	520	500	475													
500	A	25	100	104	108	116	120	130	140	150	160	170	190	210	230	250	270	325	350	400	475									
500	B	25	900	895	880	865	850	845	830	815	800	780	750	720	700	670	650	620	600	580	550									
500	A	30	110	113	117	120	125	130	135	140	150	160	170	180	190	220	250	280	250	300	325	350	380	425	480	520				
500	B	30	1000	990	980	970	960	950	940	925	910	900	880	860	840	820	800	775	750	725	700	775	750	725	600	575				
575	A	20	105	110	115	125	135	150	160	180	200	230	265	300	350	425	500													
575	B	20	910	900	890	870	830	800	780	750	720	690	670	640	600	580	530													
575	A	25	110	113	115	125	130	140	150	160	170	190	210	230	260	300	340	375	425	500	550									
575	B	25	1000	990	975	960	950	930	910	890	870	850	830	800	780	750	720	700	670	630	600									
575	A	30	120	122	125	127	130	135	140	145	155	165	180	195	210	230	250	280	300	340	375	420	475	530	600					
575	B	30	1190	1170	1150	1120	1100	1080	1050	1020	1000	990	975	965	950	920	900	880	850	820	800	770	740	700	680					
600	A	20	115	120	130	140	150	165	180	200	225	250	280	325	375	440														
600	B	20	920	900	890	850	820	800	780	760	740	710	690	670	650	610														
600	A	25	120	125	130	140	150	160	170	180	190	220	240	260	280	330	370	410	460	530										
600	B	25	1050	1030	1010	1000	990	980	960	940	920	900	880	840	810	790	760	730	700	680										
600	A	30	135	140	145	150	155	160	165	170	185	200	220	240	250	270	290	310	340	370	400	450	500	550	640					
600	B	30	1120	1115	1110	1105	1100	1095	1090	1085	1075	1050	1020	1000	980	960	940	920	900	880	850	825	800	780	720					
650	A	20	120	130	140	155	165	180	190	220	240	270	320	370	425	510														
650	B	20	990	950	920	900	890	870	850	800	780	760	710	680	660	620														
650	A	25	130	135	140	145	150	165	175	190	200	225	250	270	300	330	370	420	475	580										
650	B	25	1100	1090	1080	1060	1040	1000	990	970	945	920	900	880	850	820	800	780	750	720										
650	A	30	145	150	155	160	165	170	175	185	200	210	230	250	270	290	310	340	370	400	450	500	580	650						
650	B	30	1200	1195	1190	1185	1175	1150	1120	1100	1085	1065	1045	1020	1000	980	960	940	920	900	880	845	815	770						
700	A	20	130	140	155	170	180	200	230	250	280	325	375	425	500	630														
700	B	20	1000	980	960	940	920	900	880	850	830	800	780	740	700	680														
700	A	25	140	145	150	160	170	190	200	225	250	275	300	325	360	400	450	525	600	700										
700	B	25	1150	1130	1110	1100	1080	1060	1040	1020	1000	980	960	940	920	900	870	840	810	780										
700	A	30	150	155	160	170	180	190	200	215	230	250	270	290	320	345	370	400	440	480	540	600	680	780						
700	B	30	1250	1240	1230	1220	1210	1200	1180	1160	1140	1120	1100	1080	1060	1040	1020	1000	970	940	910	890	870	850						
750	A	25	150	155	160	170	175	185	195	200	225	240	260	280	320	350	375	400	500	600	750									
750	B	25	1200	1180	1160	1140	1120	1100	1080	1060	1040	1020	1000	980	965	950	930	910	900	880	850	820								
800	A	25	160	165	170	175	185	190	210	225	250	270	290	325	350	400	480	580	680	800										
800	B	25	1230	1215	1200	1180	1140	1120	1100	1080	1050	1020	1000	980	960	940	920	900	890	870										
900	A	25	300	325	350	375	400	430	470	500	550	600	650	700	750	800	850	900												
900	B	25	1350	1330	1310	1300	1285	1275	1260	1245	1230	1215	1200	1180	1160	1140	100	970												

output (kg/h)

A= nozzle output

B= pump output

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 ÷ 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. Heavy-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:

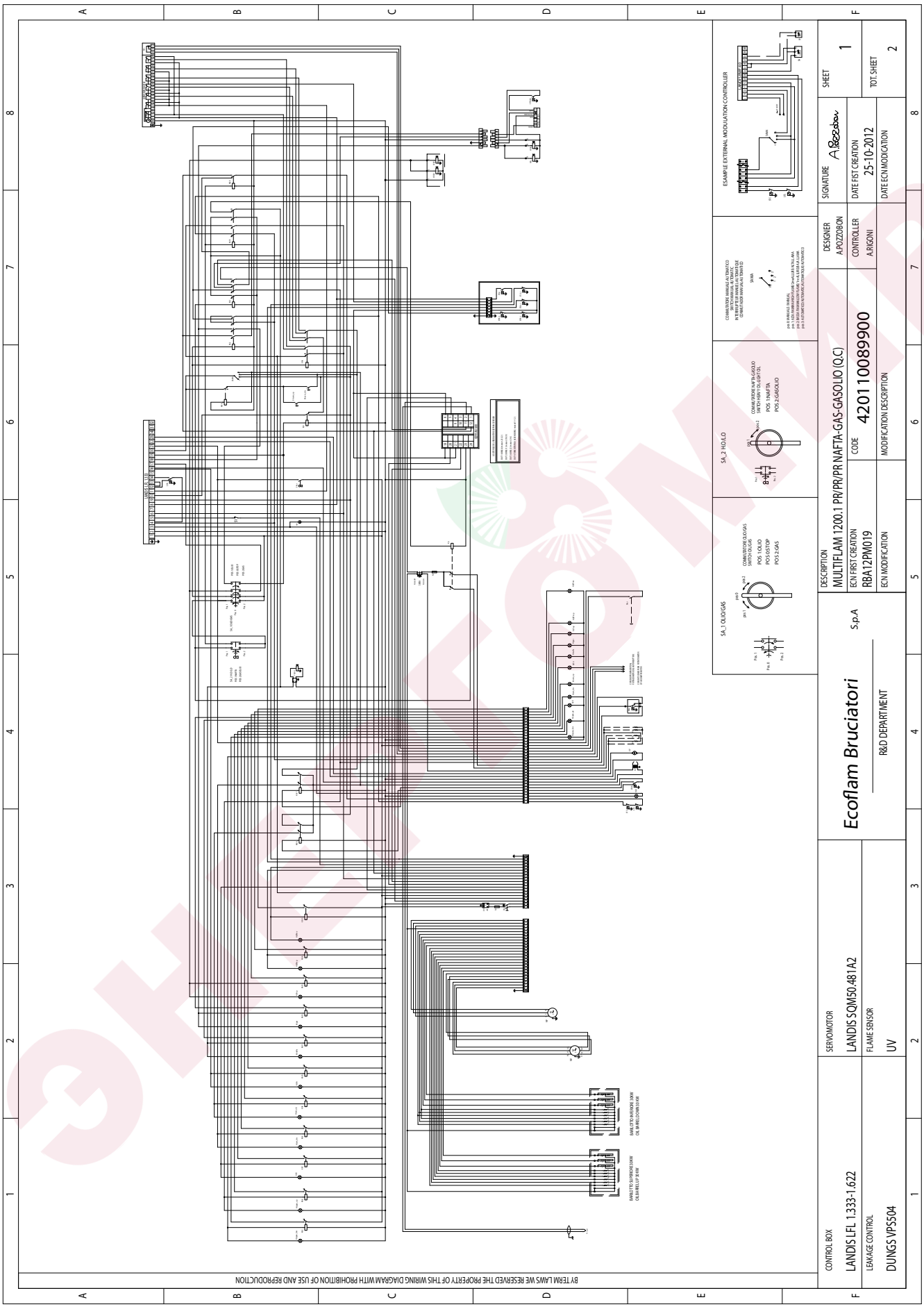
Check phase and neutral for a correct connection.
Check gas solenoid valve.
Check the position of UV cell and its connection.
Check the control box.
Check nozzles (clogged or worn).
The UV cell does not detect the flame.
The filters are clogged.
Heavy-oil pressure too low.
Combustion air's flow rate 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 detector current 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.

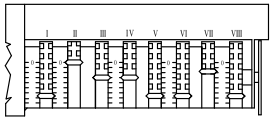

Ecoflam Bruciatori S.p.A
R&D DEPARTMENT
DESCRIPTION
MULTIFLAM 1200.1 PR/PR NAFTA-GAS-GASOLIO (Q.C.)
ECN FIRST CREATION
RBA12PM019
CODE
420110089900
ECN MODIFICATION
MODIFICATION DESCRIPTION
DESIGNER
A.POZZOBON
CONTROLLER
A.RIGONI
SIGNATURE
DATE FIST CREATION
25-10-2012
DATE ECN MODIFICATION
SHEET
1
TOT. SHEET
2
CONTROL BOX
LANDIS LFL 1.333-1.622
LEAKAGE CONTROL
DUNGS VPS504
SERVOMOTOR
LANDIS SQM50.481A2
FLAME SENSOR
UV
SA_1 OLIO/GAS
SA_2 HO.LO
ESAMPLE EXTERNAL MODULATION CONTROLLER
BY TERMI LAWS WE RESERVED THE PROPERTY OF THIS WIRING DIAGRAM WITH PROHIBITION OF USE AND REPRODUCTION

Z	FILTRO ANTIDISTURBO ANTI JAMMING FILTER FILTRE ANTIPARASITES FILTRO DE PROTECION ANTIDISTURBIO
UV	FOTORESISTENZA PHOTO-RESISTOR PHOTORESISTANCE FOTORESISTENCIA
FU	FUSIBILE FUSE FUSIBLE FUSIBLE
RA	RESISTENZA AUSILIARIA AUXILIAIRY RESISTOR RESISTANCE AUXILIAIRE RESISTENCIA AUXILIARIA
HLB	LAMPADA DI BLOCCO LOCK-OUT LAMP LAMPE DE SECURITE ESPIA DE BLOQUEO
HLF	LAMPADA DI FUNZIONAMENTO WORKING LAMP LAMPE DE FONCTIONNEMENT ESPIA DE FUNCIONAMIENTO
HLFtr	LAMPADA DI FUNZIONAMENTO TRASFORMATORE TRANSFORMER LAMP
HLFvp	LAMPADA DI FUNZIONAMENTO ELETTROVALVOLA PILOTA PILOT GAS VALVE LAMP
HLR	LAMPADA RESISTENZE RESISTOR LAMP TÉMOIN RESISTENCES INDICADOR RESISTENCIAS
HLserv_down	LAMPADA CHIUSURA SERVOMOTORE AIR DAMPER MOTOR CLOSING LAMP
HLserv_up	LAMPADA APERTURA SERVOMOTORE AIR DAMPER MOTOR OPENING LAMP
HLBTmp	LAMPADA BLOCCO TERMICO MOTORE VENTILATORE FAN MOTOR LOCK OUT LAMP
HLBTmv	LAMPADA BLOCCO TERMICO MOTORE POMPA OIL PUMP MOTOR LOCK OUT
KA	RELE' RELAY RELAIS RELE'
KA1	RELE' RELAY RELAIS RELE'
KA2	RELE' RELAY RELAIS RELE'
KA3	RELE' RELAY RELAIS RELE'
KA4	RELE' RELAY RELAIS RELE'
KA5	RELE' RELAY RELAIS RELE'
KA6	RELE' RELAY RELAIS RELE'
KA7	RELE' RELAY RELAIS RELE'
KA8	RELE' RELAY RELAIS RELE'
KA9	RELE' RELAY RELAIS RELE'

KA10	RELE' RELAY RELAIS RELE'
KA11	RELE' RELAY RELAIS RELE'
KA12	RELE' RELAY RELAIS RELE'
KA13	RELE' RELAY RELAIS RELE'
KA14	RELE' RELAY RELAIS RELE'
KA15	RELE' RELAY RELAIS RELE'
KA16	RELE' RELAY RELAIS RELE'
KA17	RELE' RELAY RELAIS RELE'
KA18	RELE' RELAY RELAIS RELE'
KA19	RELE' RELAY RELAIS RELE'
STSR	TERMOSTATO DI SICUREZZA RESISTENZE RESTOR SAFETY TERMOSTAT TERMOSTAT DE SECURITE RESISTANCES TERMOSTATO DE SEGURIDAD RESISTENCIAS
STS	TERMOSTATO DI SICUREZZA SAFETY THERMOSTAT THERMOSTAT DE SECURITE TERMOSTATO DE SEGURIDAD
TV	TRASFORMATORE IGNITION TRANSFORMER TRANSFORMATEUR D'ALLUMAGE TRANSFORMADOR
YVGP	ELETTROVALVOLA GAS PILOTA PILOT FLAME SOLENOID GAS VALVE ELECTROVANNE GAZ PILOTE ELECTROVALVULA GAS PILOTO
YVgC-U	SOLENOIDE CHIUSURA UGELLO OIL SHUT-OFF SOLENOID
YVGS	ELETTROVALVOLA GAS DI SICUREZZA EXTRA SAFETY GAS SOLENOID VALVE ELECTROVANNE GAZ DE SECURITE ELECTROVALVULA GAS DE SEGURIDAD
YVG	ELETTROVALVOLA GAS GAS SOLENOID VALVE ELECTROVANNE GAZ ELECTROVALVULA DE GAS
SPGmin	PRESSOSTATO GAS DI MINIMA GAS PRESSURE SWITCH MIN PRESSOSTAT GAZ PRESSION MIN PRESOSTATO GAS DE MINIMA POT.
SPao	PRESSOSTATO OLIO ANELLO OIL RING PRESSURE
RP	RESISTENZA POMPA PUMP RESISTOR RESISTANCE POMPE RESISTENCIA BOMBA
SAL	INTERRUTTORE DI LINEA WORKING SWITCH INTERRUPTEUR DE LIGNE INTERRUPTOR DE LINEA
SAMA	COMMUTATORE MANUALE-AUTOMATICO SWITCH (MANUAL-AUTOMATIC)) INTERRUPTEUR MANUEL-AUTOMATIQUE CONMUTADOR MANUAL-AUTOMATICO
STLA_I	TERMOSTATO DI LAVORO INFERIORE DOWN WORKING THERMOSTAT THERMOSTAT TRAVAIL TERMOSTATO DE TRABAJO

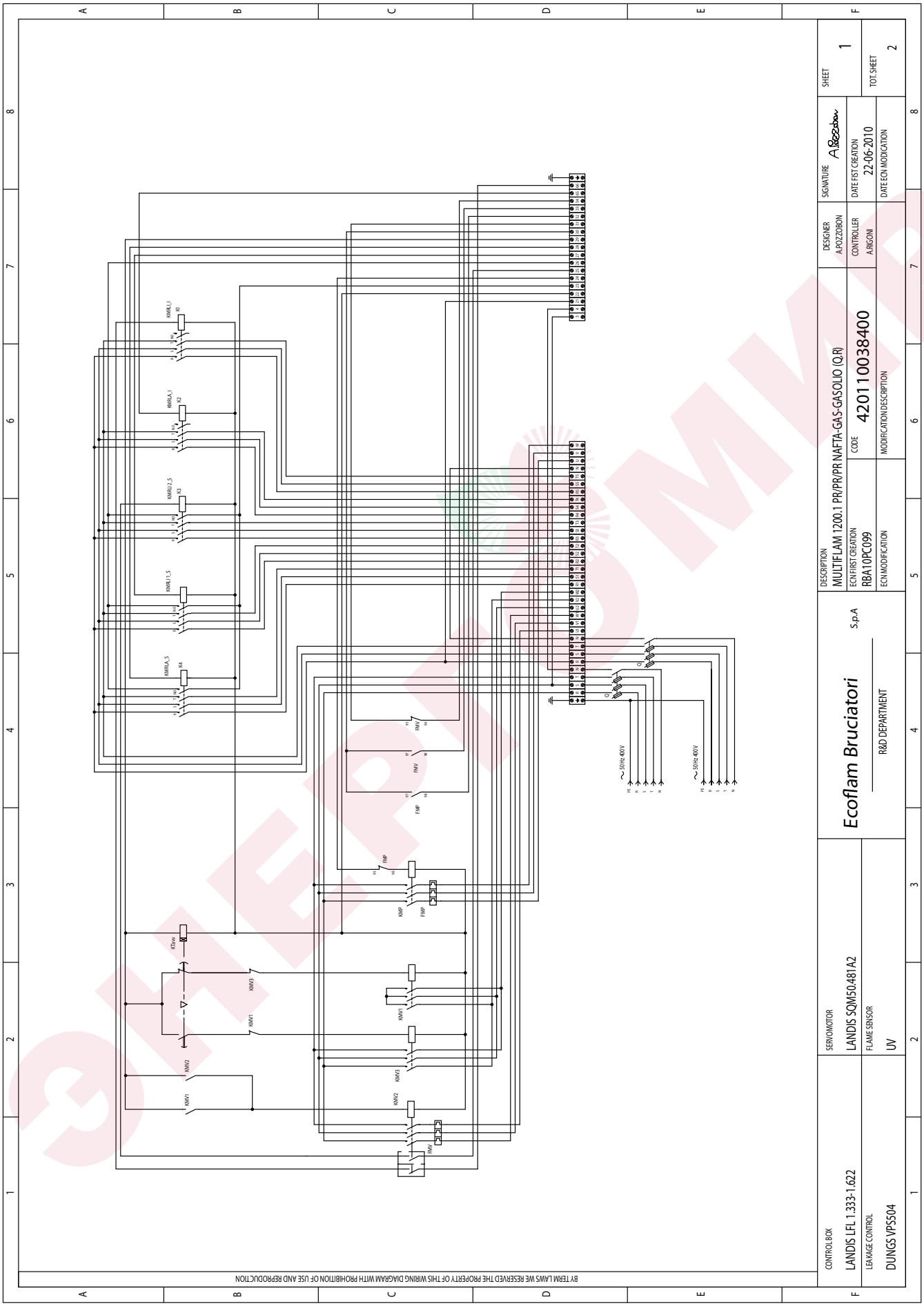
KA20	RELE' RELAY RELAIS RELE'
YVGPS	ELETTROVALVOLA GAS PILOTA DI SICUREZZA EXTRA SAFETY PILOT SOLENOID GAS VALVE ELECTROVANNE GAZ PILOTE DE SICURITE ELECTROVALVULA GAS PILOTO DE SEGURIDAD
STU_I	TERMOSTATO DI LIVELLAMENTO INFERIORE DOWN LEVELLING OF THERMOSTAT TERMOSTAT DE NIVELLEMENT TERMOSTATO DE NIVELACION
STSR_S	TERMOSTATO DI SICUREZZA RESISTENZE SUPERIORE UP RESTOR SAFETY TERMOSTAT TERMOSTAT DE SECURITE RESISTANCES TERMOSTATO DE SEGURIDAD RESISTENCIAS
STSR_I	TERMOSTATO DI SICUREZZA RESISTENZE INFERIORE UP RESTOR SAFETY TERMOSTAT TERMOSTAT DE SECURITE RESISTANCES TERMOSTATO DE SEGURIDAD RESISTENCIAS
SA sr	PULSANTE DI SBLOCCO REMOTO EXTERNAL RESET AND LOCK OUT BUTTON
SA serv.up	PULSANTE SERVOCOMANDO ARIA SU UP AIR SERVO CONTROL BUTTON
SA serc_dw	PULSANTE SERVOCOMANDO ARIA GIU DOWN AIR SERVO CONTROL BUTTON
SPA	PRESSOSTATO ARIA AIR PRESSURE SWITCH PRESSOSTAT AIR PRESOSTATO AIRE
STAB	TERMOSTATO DI ALTA-BASSA FIAMMA HIGH-LOW FLAME THERMOSTAT THERMOSTAT GRANDE-PETITE ALLURE TERMOSTATO DE ALTA-BAJA LLAMA
STC	TERMOSTATO CALDAIA BOILER THERMOSTAT THERMOSTAT CHAUDIERE TERMOSTATO CALDERA
STmr	TERMOSTATO DI MINIMA RITORNO THERMOSTAT MIN THERMOSTAT DE MIN TERMOSTATO DE MINIMA
S1	FINECORSA LIMIT SWITCH INTERRUPTEUR DE FIN DE COURSE LIMITADOR DE CARRERA
SARA	INTERRUTTORE RESISTENZE AUSILIARIE AUX HEATER SWITCH INTERRUPTEUR DES RESISTACES AUXILIAIRES INTERRUPTOR RESISTENCIA AUXILIAR
SA_1 OLIO/GAS	COMMUTATORE OLIO-GAS SWITCH HEAVY OIL - GAS INTERRUPTEUR FUEL LOURD - GAZ INTERRUPTOR ACEITE PESADO - GAZ
SA_2 H.OIL.O	COMMUTATORE NAFTA-GASOLIO SWITCH HEAVY HEAVY OIL-LIGHT OIL INTERRUPTEUR HEAVY OIL-DIESEL INTERRUPTOR ACEITE PESADO-DIESEL

REGOLAZIONE CAMME PER MULTIFLAM 1200.1 PR/PR/PR



I: CAMMA DI REGOLAZIONE ARIA MASSIMA FIAMMA NAFTA-GASOLIO
II: CAMMA DI REGOLAZIONE CHIUSURA TOTALE
III: CAMMA DI REGOLAZIONE ARIA ACCENSIONE GAS
IV: CAMMA DI REGOLAZIONE ARIA ACCENSIONE NAFTA-GASOLIO
V: CAMMA DI REGOLAZIONE ARIA BASSA FIAMMA GAS
VI: CAMMA DI REGOLAZIONE ARIA BASSA FIAMMA NAFTA-GASOLIO
VII: CAMMA DI REGOLAZIONE ARIA MASSIMA FIAMMA GAS
VIII: CAMMA NON UTILIZZATA

CONTROL BOX LANDIS LFL 1.333-1.622	SERVOMOTOR LANDIS SQM50.481A2	Ecoflam Bruciatori S.p.A R&D DEPARTMENT	DESCRIPTION MULTIFLAM 1200.1 PR/PR/PR NAFTA-GAS-GASOLIO (Q.C)		DESIGNER A.POZZOBON	SIGNATURE A.Pozzobon	SHEET 2
LEAKAGE CONTROL DUNGS VPS504	FLAME SENSOR UV		ECN FIRST CREATION RBA12PM019	CODE 420110089900	CONTROLLER A.RIGONI	DATE FIST CREATION 25-10-2012	TOT. SHEET 2
			ECN MODIFICATION	MODIFICATION DESCRIPTION		DATE ECN MODICATION	


DESCRIPTION
MULTIFLAM 1200.1 PR/PR NAFTA-GAS-GASOLIO (Q.R)
ECN FIRST CREATION
RBA10PC099
ECN MODIFICATION
CODE
420110038400
MODIFICATION DESCRIPTION
DESIGNER
A.POZZOBON
CONTROLLER
A.RIGONI
SIGNATURE
DATE FIST CREATION
22-06-2010
DATE ECN MODICATION
SHEET
1
TOT. SHEET
2
Ecoflam Bruciatori S.p.A
R&D DEPARTMENT
CONTROL BOX
LANDIS LFL 1.333-1.622
SERVOMOTOR
LANDIS SQM50.481 A2
LEAKAGE CONTROL
DUNGS VPS504
FLAME SENSOR
UV
BY TERM LAWS WE RESERVED THE PROPERTY OF THIS WIRING DIAGRAM WITH PROHIBITION OF USE AND REPRODUCTION

Q	INTERRUTTORE GENERALE CON FUSIBILE MAIN SWITCH WITH FUSE INTERRUPTEUR GENERAL AVEC FUSIBLE INTERRUPTOR GENERAL CON FUSIBLE
FMP	RELE' TERMICO MOTORE POMPA MOTOR PUMP THERMAL RELAY RELAIS THERMIQUE MOTEUR POMPE RELE' TERMICO MOTOR BOMBA
FMV	RELE' TERMICO MOTORE VENTILATORE MOTOR THERMAL RELAY (FAN MOTOR) RELAIS THERMIQUE MOTEUR VENTILATEUR RELE' TERMICO MOTOR VENTILADOR
KMRLA_S	CONTATTORE RESISTENZE DI LAVORO SUPERIORE UP WORKING RESISTOR SWITCH INTERRUPTEUR DES RESISTANCES DE TRAVAIL INTERRUFTOR DE LAS RESISTENCIAS DE TRABAJIO
KMRLI 1_S	CONTATTORE RESISTENZE DI LIVELLAMENTO 1 SUPERIORE UP 1 S.T LEVELLING RESISTOR SWITCH INTERRUPTEUR DES RESISTANCES DE NIVELLEMENT INTERRUFTOR DE LAS RESISNCIAS DE NIVELACION
KMRLI 2_S	CONTATTORE RESISTENZE DI LIVELLAMENTO 2 SUPERIORE UP 2 N.D LEVELLING RESISTOR SWITCH INTERRUPTEUR DES RESISTANCES DE NIVELLEMENT INTERRUFTOR DE LAS RESISNCIAS DE NIVELACION
KMRLA_I	CONTATTORE RESISTENZE DI LAVORO INFERIORE DOWN WORKING RESISTOR SWITCH
KMRLI_I	CONTATTORE RESISTENZE DI LIVELLAMENTO INFERIORE DOWN LEVELLING RESISTOR SWITCH
KMP	CONTATTORE MOTORE POMPA POMP REMOTE CONTROL SWITCH CONTACTEUR MOTEUR POMPE EMPALME MOTOR BOMBA
KTavv	TEMPORIZZATORE ELETTRONICO AVVIAMENTO STELLA/TRINAGOLO ELECTRONIC TIMER WITH STAR/DELTA STARTER TEMPORIZADOR ELÉCTRONICO PREPARADO PARA TEMPORIZADOR ELÉCTRONICO PREPARADO PARA

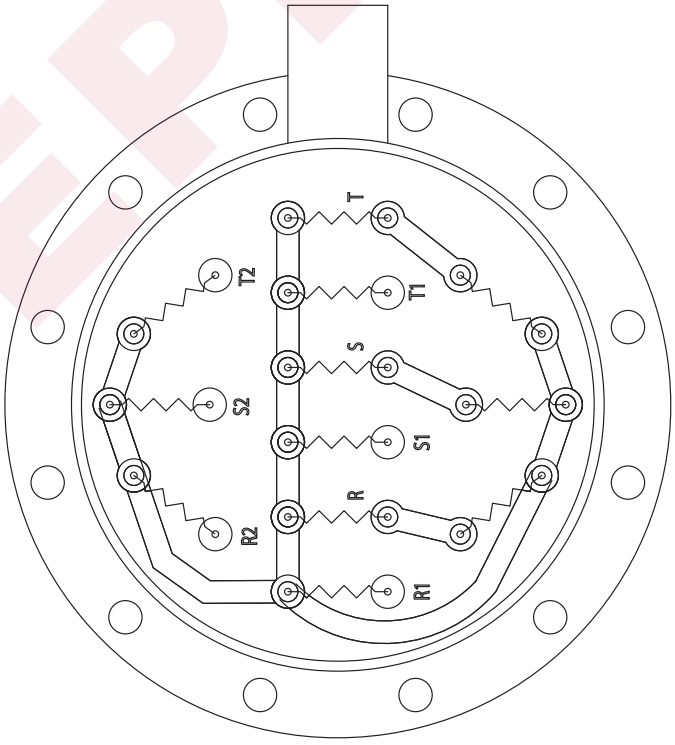
KMV1	CONTATTORE DI STELLA STAR CONTACTOR CONTACTEUR D'ETOILE CONTATTORE DI STELLA
KMV2	CONTATTORE MOTORE VENTILATORE REMOTE CONTROL SWITCH (FAN MOTOR) CONTACTEUR MOTEUR VENTILATEUR TELERRUPTOR MOTOR VENTILATOR
KMV3	CONTATTORE DI TRIANGOLO CONTACTEUR TRIANGLE

CONTROL BOX: LANDIS LFL 1.333-1.622	SERVOMOTOR: LANDIS SQM50.481A2	Ecoflam Bruciatori S.p.A R&D DEPARTMENT	DESCRIPTION: MULTIFLAM 1200.1 PR/PR/PR NAFTA-GAS-GASOLIO (Q.R)		DESIGNER: A.POZZOBON	SIGNATURE: A.Pozzobon	SHEET: 2
LEAKAGE CONTROL: DUNGS VPS504	FLAME SENSOR: UV		ECN FIRST CREATION: RBA10PC099	CODE: 420110038400	CONTROLLER: A.RIGONI	DATE FIST CREATION: 22-06-2010	TOT. SHEET: 2
			ECN MODIFICATION	MODIFICATION DESCRIPTION		DATE ECN MODICATION	

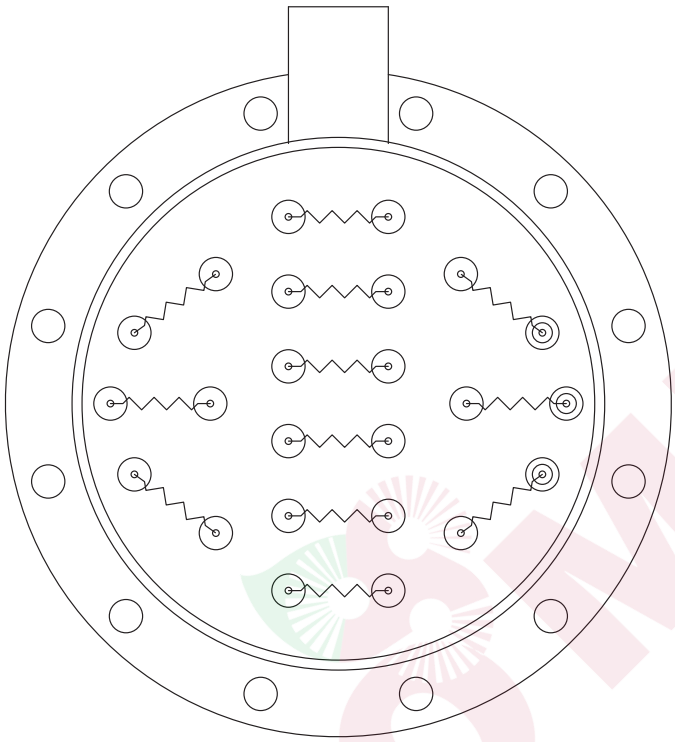
COLLEGAMENTO BARILOTTO ECOFLAM

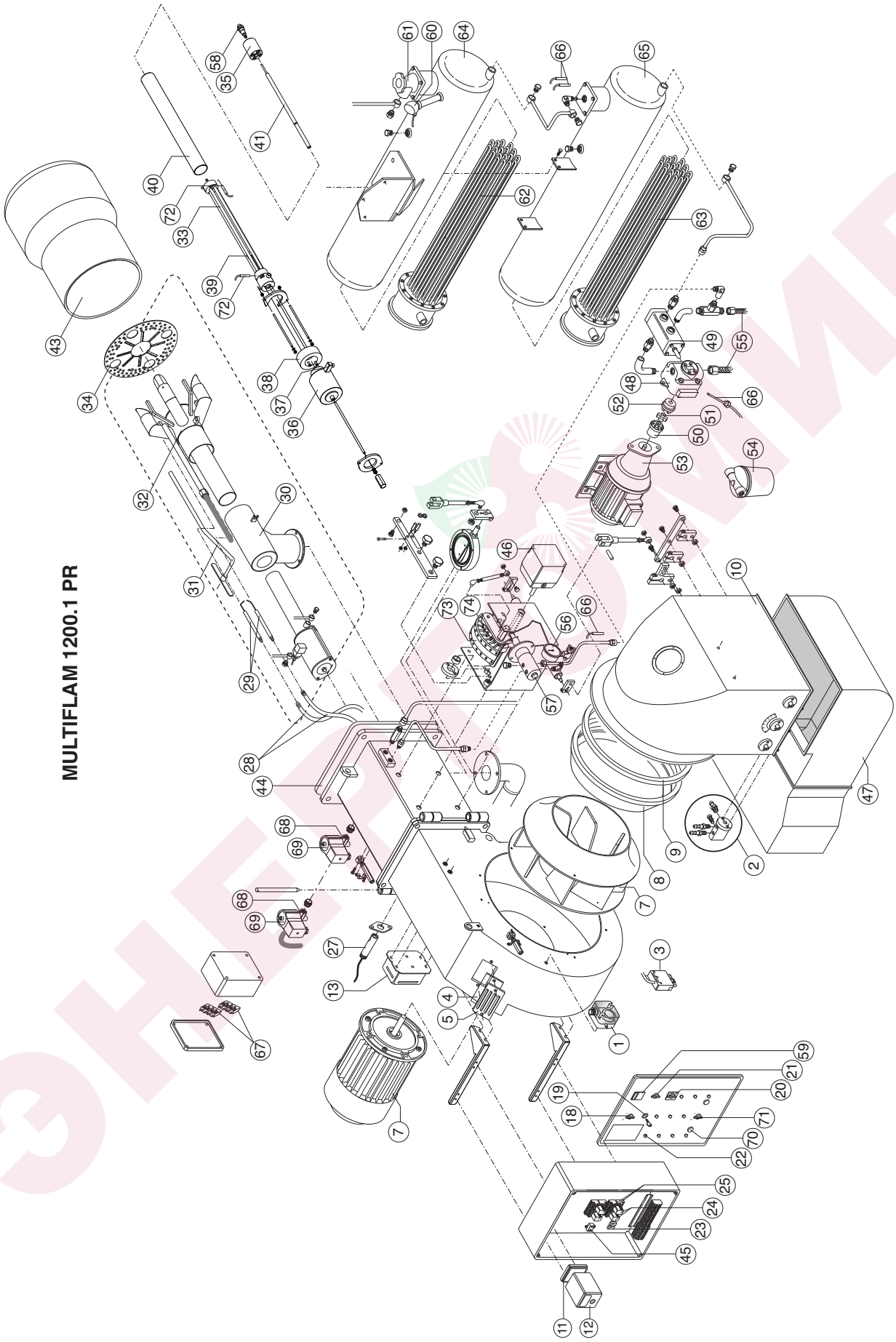
Collegamento elettrico resistenze

Parte superiore



Posizionamento resistenze




MULTIFLAM 1200.1 PR

			MULTIFLAM 1200.1
N°	DESCRIPTION		code
1	AIR PRESSURE SWITCH	LGW 10 A4	65323033
2	AIR INTAKE SET		65322346
3	WIELAND PLUG	6 pin	65322072
4	GLASS		65320487
5	PEED WINDOM FRAME		65320488
6	MOTOR	37 kW	65325341
7	FAN	RU-630 M.D.55	65321804
8	AIR CONVEYOR		65324064
9	CONVEYOR RING		65320646
10	AIR INTAKE		65324065
11	CONTROL BOX BASE	SIEMENS	65320091
12	CONTROL BOX	SIEMENS LFL1.333	65320031
13	IGNITION TRANSFORMER	T8 13000/35	65323222
14	REMOTE CONTROL SWITCH		-
15	REMOTE CONTROL SWITCH (PUMP)		-
16	MOTOR THERMAL RELAY		-
17	MOTOR THERMAL RELAY (PUMP)		-
18	MAIN SWITCH	COMEPI art.ECX1252	65324098
19	RESET BUTTON KEY	COMEPI a.ECX1430	65324468
20	SELECTOR	RCK 194L-E12-8751	740160016800
21	SELECTOR GAS/HEAVY OIL	COMEPI ART.ECX1370	65324099
22	LAMP	LYVIA 10x28 BA9S	65324100
23	FUSE SUPPORT	HK 520 04/1 10A	65324279
24	RELE BASE	FINDER 95.75	65323152
		FINDER 5532	65323149
		FINDER 5534	65323150
25	RELE	FINDER MINI 40.52	65323142
		FINDER 5532	65323139
		FINDER 5534	65323140
26	TIMER		-
27	UV CELL	SIEMENS QRA 2	65320075
28	IGNITION CABLE	TC	65320948
29	IGNITION ELECTRODES SET		65322165
30	GAS PIPE SUPPORT		65324422
31	ROD	TC	65324423
32	GAS FIRING HEAD		65324424
33	OIL FIRING HEAD		65324889
34	FRONT DISC		65324159
35	NOZZLE HOLDER	7/8 UNEF	65324890
36	COIL	EL011	65323809
37	CONNECTOR WITH RECTIFIER		65323571
38	RING		65321721
39	SPRING HOLDER		65321720
40	PIPE		65324426
41	ROD NOZZLE HOLDER	TC	65324427
42	DIFFUSER		65321672
43	BLAST TUBE	TC	65324070
44	GASKET ISOMART		65321136
45	ANTIJAMMING FILTER		65323170
46	AIR DAMPER MOTOR	SIEMENS SQM50.481A2	65322902
47	SILENCER		65324071
48	OIL PUMP	SUNTEC T5C105	65322998
49	OIL PUMP VALVE	SUNTEC TV40011	65322995
50	COUPLING (MOTOR)		65324479

TC = SHORT HEAD TL = LONG HEAD

			MULTIFLAM 1200.1
N°	DESCRIPTION		code
51	UNION		65321791
52	COUPLING (PUMP)		65324364
53	PUMP MOTOR	ABB 5,5 KW	65325344
54	OIL FILTER	70501/03	65324103
55	HOSES	25X1500	65323181
56	MANOMETER	CEWAL R1/4 D50-40BAR	65324105
57	ADJUSTMENT OF OIL PRESSURE	B-GH-PRO-2	65323167
58	NOZZLE	Bergonzo 800 kg/h	
59	ADJUSTMENT OF FUEL TEMPERATURE	Gefran 600	65322045
60	THERMOCOUPLE	TC6MD2JBC	65322046
61	FILTER	U21008/01	65323158
62	UP HEATER	30 kW	65323091
63	DOWN HEATER	30 kW	65323091
64	UP OIL TANK		65324481
65	DOWN OIL TANK		65324481
66	HEATING ELEMENT	50 W	65323072
67	THERMOSTAT	IMIT TR2 40/200	65323147
68	PILOT GAS VALVE	KROMSCH.VCS 125R/LW	65324722
69	COIL	KROMSCH.VCS 125R/LW	65324623
70	BUTTON	COMEPI ART.ECX1100	65324483
71	SELECTOR	COMEPI ART.ECX1255	65324639
72	HEATING ELEMENT	30 W	65324207
73	GAS CAM GROUP		65322355
74	OIL CAM GROUP		65322356

TC = SHORT HEAD TL = LONG HEAD

NOTE :

NOTE :

NOTE :