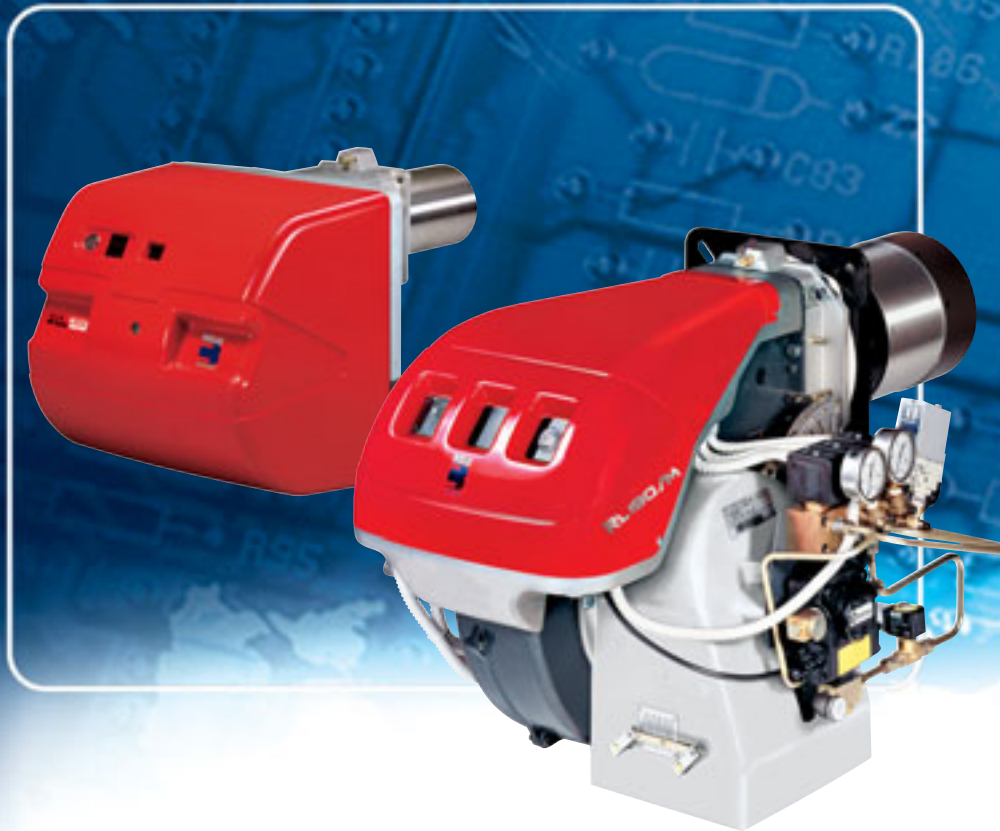


MODULATING LIGHT OIL BURNERS

▶ **RL/M SERIES**

| | |
|-------------------|--------------------|
| ▶ RL 28/M | 95/166 ÷ 332 kW |
| ▶ RL 38/M | 101/237 ÷ 450 kW |
| ▶ RL 50/M | 130/296 ÷ 593 kW |
| ▶ RL 70/M | 261/474 ÷ 1043 kW |
| ▶ RL 100/M | 332/711 ÷ 1482 kW |
| ▶ RL 130/M | 498/948 ÷ 1779 kW |
| ▶ RL 190/M | 534/1423 ÷ 2431 kW |



The RL/M series of burners covers a firing range from 95 to 2431 kW, and they have been designed for use in hot or superheater water boilers, hot air or steam generators, diathermic oil boilers.

Operation can be "two stage progressive" or, alternatively, "modulating" with the installation of a PID logic regulator and respective probes.

RL/M series burners guarantees high efficiency levels in all the various applications, thus reducing fuel consumption and running costs.

Optimisation of sound emissions is guaranteed by the use of fans with forward inclined blades and sound deadening material incorporated in the air suction circuit.

The exclusive design ensures reduced dimensions, simple use and maintenance. A wide range of accessories guarantees elevated working flexibility.



TECHNICAL DATA

| Model | | ▼ RL 28/M | ▼ RL 38/M | ▼ RL 50/M | ▼ RL 70/M | ▼ RL 100/M | ▼ RL 130/M | ▼ RL 190/M |
|--|--------------------------|--|------------------|-------------|---|---------------|-------------------|----------------------|
| Burner operation mode | | Modulating (with regulator and probes accessories) | | | | | | |
| Modulation ratio at max. output | | 3 ÷ 1 | | | | | | |
| Servomotor | type | SQN90 | | | SQN31 | | | |
| | run time | 24 | | | 42 | | | |
| Heat output | kW | 95/166÷332 | 101/237÷450 | 130/296÷593 | 261/474÷1043 | 332/711÷1482 | 498/948÷1779 | 534/1423÷2431 |
| | Mcal/h | 81,7/143÷286 | 87/204÷387 | 112/255÷510 | 224/408÷897 | 286/612÷1275 | 428/816÷1530 | 459/1224÷2091 |
| | kg/h | 8/14÷28 | 8,5/20÷38 | 11/25÷50 | 22/40÷88 | 28/60÷125 | 42/80÷150 | 45/120÷205 |
| Working temperature | °C min./max. | 0/40 | | | | | | |
| Net calorific value | kWh/kg | 11,8 | | | | | | |
| | kcal/kg | 10200 | | | | | | |
| Viscosity | mm ² /s (cSt) | 4 ÷ 6 (at 20°C) | | | | | | |
| Pump | type | AL 75C | AL 95C | | J 7C | | TA 3 | |
| | delivery | 74 (20 bar) | 99 (20 bar) | | 190 (20 bar) | | 665 (20 bar) | |
| Atomised pressure | bar | 20 | | | | | | |
| Fuel temperature | Max. °C | 50 | | | | | | |
| Fuel pre-heater | | | | | | | | |
| Fan | type | Centrifugal with reverse curve blades | | | | | | Forward curve blades |
| Air temperature | Max. °C | 60 | | | | | | |
| Electrical supply | Ph/Hz/V | 1/50/230~(±10%) | 3N/50/400~(±10%) | | | | 3/50/230~(±10%) △ | |
| Auxiliary electrical supply | Ph/Hz/V | 1/50/230~(±10%) | | | | | | |
| Control box | type | LAL 1.25 | | | LAL 1.25 (Intermittent working) - LOK 16 (Continuous working) | | | |
| Total electrical power | kW | 0,4 | 0,6 | 0,8 | 1,4 | 2,1 | 2,6 | 5,5 |
| Auxiliary electrical power | kW | 0,15 | 0,15 | 0,15 | 0,3 | 0,3 | 0,4 | 1 |
| Heaters electrical power | kW | | | | | | | |
| Protection level | IP | 44 | | | | | | |
| Pump motor electrical power | kW | -- | | | | | | |
| Rated pump motor current | A | -- | | | | | | |
| Pump motor start up current | A | -- | | | | | | |
| Pump motor protection level | IP | -- | | | | | | |
| Fan motor electrical power | kW | 0,25 | 0,45 | 0,65 | 1,1 | 1,8 | 2,2 | 4,5 |
| Rated fan motor current | A | 2,1 | 2 - 1,2 | 3 - 1,7 | 4,8 - 2,8 | 7,3 - 4,2 | 8,8 - 5,1 | 15,8 - 9,1 |
| Fan motor start up current | A | 10 | 9,5 - 5,5 | 13,8 - 8 | 25 - 14,6 | 37,6 - 21,8 | 57,2 - 33,2 | 126 - 73 |
| Fan motor protection level | IP | 40 | 54 | | | | | |
| Ignition transformer | type | | | | | | | |
| | V1 - V2 | 230V - 2x5 kV | | | | | | 230V - 2x5 kV |
| | I1 - I2 | 1,9A - 30 mA | | | | | | 1,9A - 35 mA |
| Operation | | Intermittent (at least one stop every 24 h) | | | Intermittent (at least one stop every 24 h) - Continuous (at least one stop every 72 h) | | | |
| Sound pressure | dB(A) | 68 | 70 | 75 | 75 | 77 | 78,5 | 84,9 |
| Sound power | W | -- | -- | -- | -- | -- | -- | -- |
| CO emission | mg/kWh | < 40 | | | | | | |
| Grade of smoke indicator | N° Bacharach | < 1 | | | | | | |
| C _x H _y emission | mg/kWh | <10 (after the first 20 s) | | | | | | |
| NO _x emission | mg/kWh | < 200 | | | | | | |
| Directive | | 73/23 - 89/336 - 98/37 - 92/42 EEC | | | | | | |
| Conforming to | | EN 267 | | | | | | |
| Certification | | -- | DIN 5G 975/01 | | DIN 5G 976/01 | DIN 5G 977/01 | DIN 5G 978/01 | |

Reference conditions:

Temperature: 20°C

Pressure: 1013,5 mbar

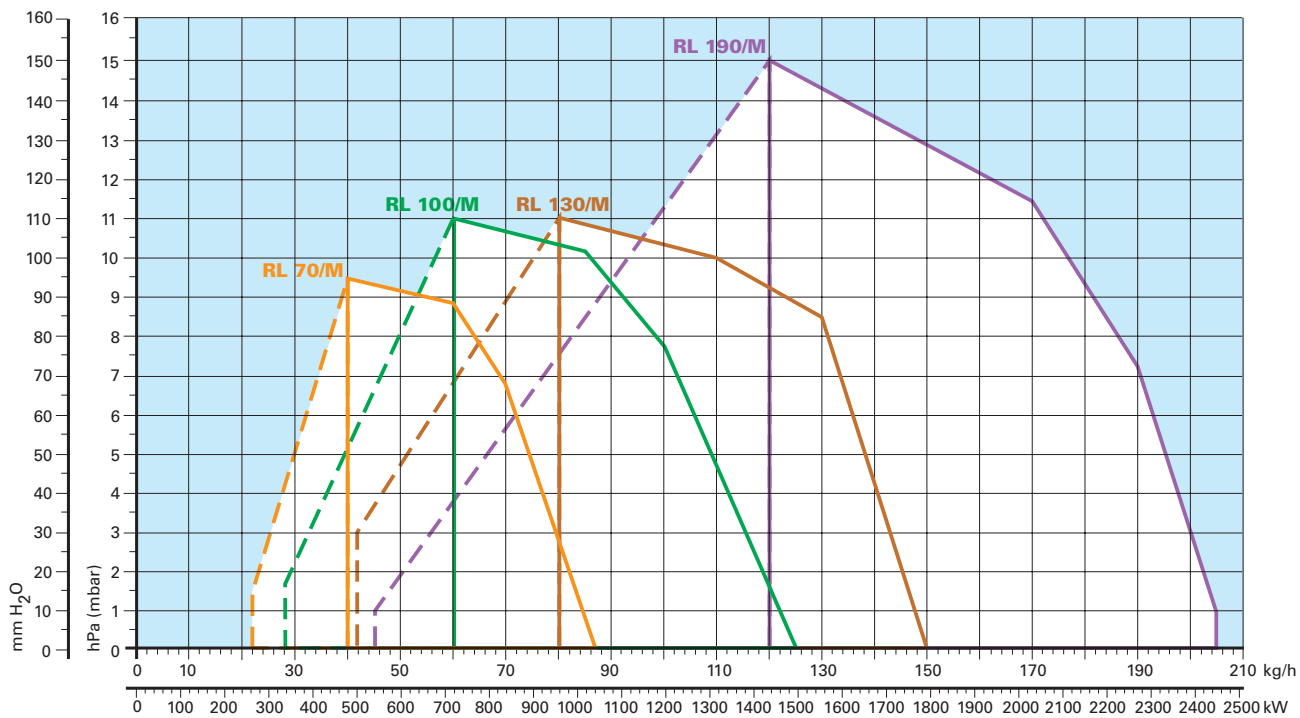
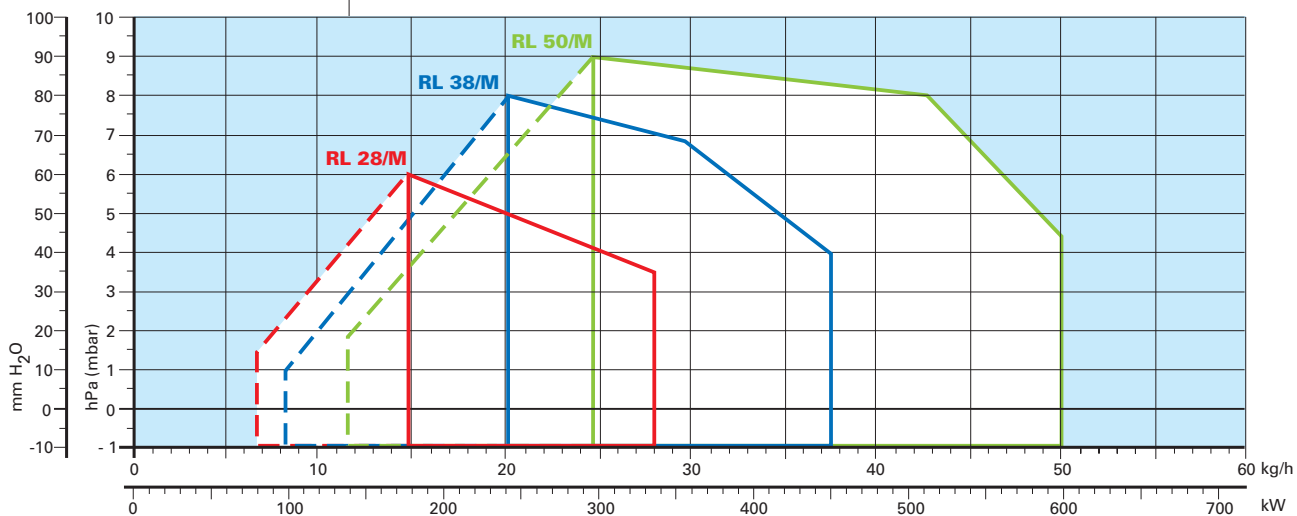
Altitude: 100 m a.s.l.

Noise measured at a distance of 1 meter.

Since the Company is constantly engaged in the production improvement, the aesthetic and dimensional features, the technical data, the equipment and the accessories can be changed.

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FIRING RATES



Useful working field for choosing the burner

Modulation range

Test conditions conforming to EN 267:

Temperature: 20°C
 Pressure: 1013,5 mbar
 Altitude: 100 m a.s.l.





FUEL SUPPLY

HYDRAULIC CIRCUITS

Various hydraulic circuits are available, depending on fuel output asset according to local norms of steam generators.

The burners are fitted with two valves for oil output from the pump: a pressure regulator on the return circuit from the nozzle allows varying the quantity of burnt fuel.

A safety valve on the return circuit impedes oil leakage from the nozzle when the burner is in stand by and pre-purge phases.

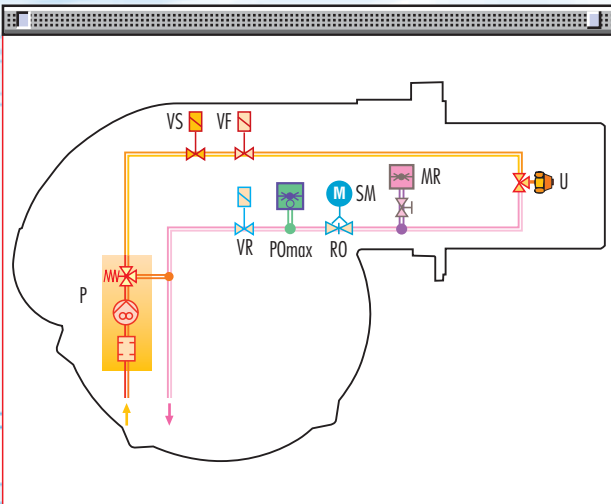
Beginning with the RL 100/M model, the burners have a double safety valve on the return circuit.

The models fitted with a minimum pressure switch on the oil delivery circuit can be installed on steam generators according to TRD-72 standard (Germany) and NBN standard (Belgium).



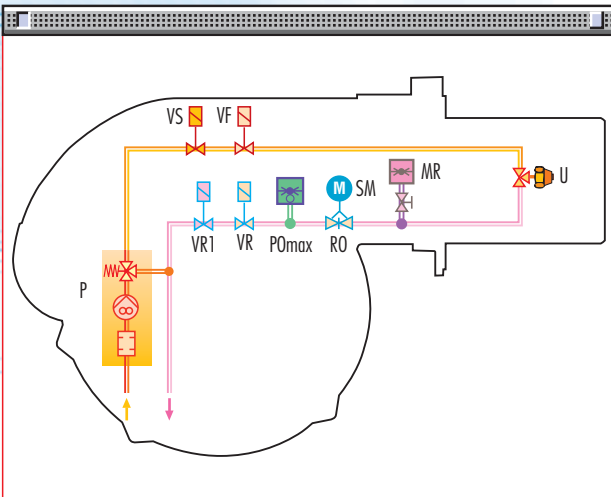
Example of the hydraulic circuit on RL70/M burners

EN 267 < 100 Kg/h

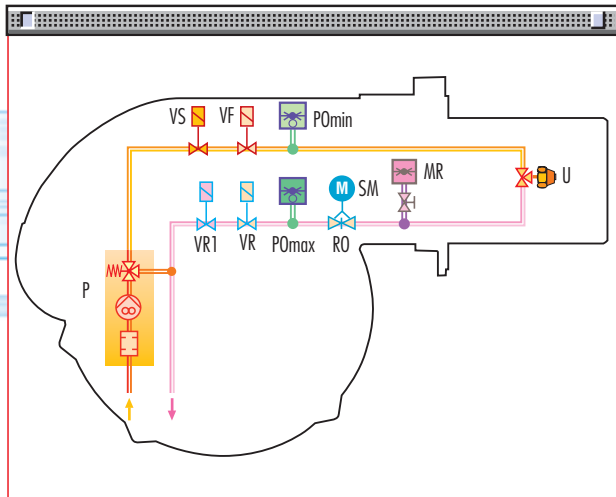


| | |
|--------|---|
| P | Pump with filter and pressure regulator on the output circuit |
| VS | Safety valve on the output circuit |
| VF | Working valve on the output circuit |
| PO min | Min. Oil pressure switch on the output circuit |
| U | Nozzle |
| MR | Pressure gauge on the return circuit |
| SM | Servomotor |
| RO | Pressure regulator on the return circuit |
| PO max | Max. Oil pressure switch on the return circuit |
| VR | 1st safety valve on the return circuit |
| VR1 | 2nd safety valve on the return circuit |

EN 267 > 100 Kg/h



Versions for TRD-72, NBN steam generators



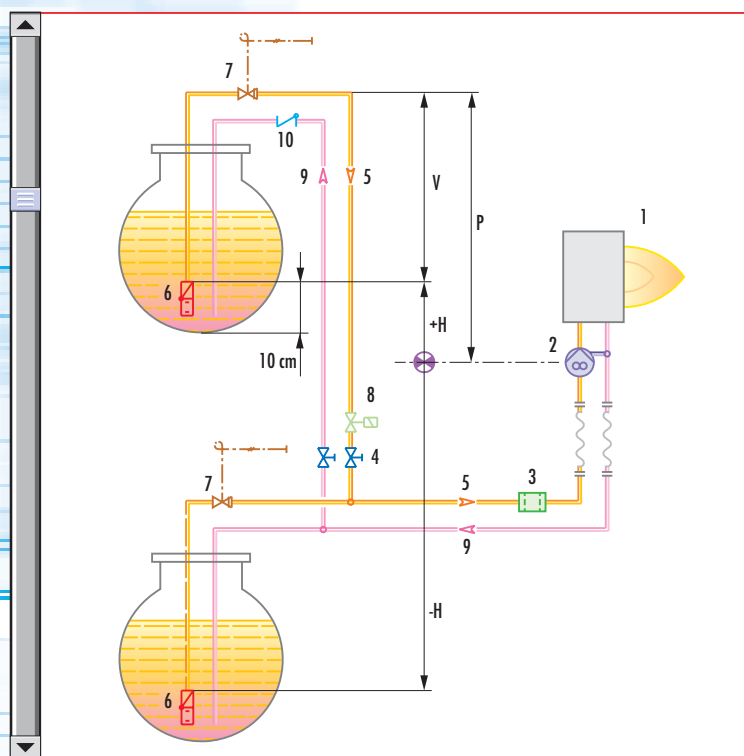


SELECTING THE FUEL SUPPLY LINES

The fuel feed must be completed with the safety devices required by the local norms.

The table shows the choice of piping diameter for the various burners, depending on the difference in height between the burner and the tank and their distance.

| MAXIMUM EQUIVALENT LENGTH FOR THE PIPING L[m] | | | | | | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Model | ▼ RL28/M | | | ▼ RL38-50/M | | | ▼ RL70-100-130/M | | | ▼ RL190/M | |
| Diameter piping | Ø10mm | Ø12mm | Ø14mm | Ø10mm | Ø12mm | Ø14mm | Ø12mm | Ø14mm | Ø16mm | Ø16mm | Ø18mm |
| +H, -H (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) | L _{max} (m) |
| +4,0 | 83 | 144 | 150 | 51 | 112 | 150 | 71 | 138 | 150 | 60 | 80 |
| +3,0 | 55 | 127 | 150 | 46 | 99 | 150 | 62 | 122 | 150 | 50 | 70 |
| +2,0 | 48 | 111 | 150 | 39 | 86 | 150 | 58 | 106 | 150 | 40 | 60 |
| +1,5 | 44 | 102 | 150 | 35 | 79 | 147 | 51 | 98 | 150 | 35 | 55 |
| +1,0 | 40 | 94 | 150 | 32 | 73 | 144 | 44 | 90 | 150 | 30 | 50 |
| +0,5 | 37 | 86 | 150 | 29 | 65 | 132 | 40 | 82 | 150 | 25 | 45 |
| 0 | 33 | 78 | 150 | 26 | 60 | 120 | 36 | 74 | 137 | 20 | 40 |
| -0,5 | 29 | 70 | 133 | 23 | 54 | 106 | 32 | 66 | 123 | 18 | 35 |
| -1,0 | 25 | 82 | 118 | 20 | 47 | 96 | 28 | 56 | 109 | 15 | 30 |
| -1,5 | 21 | 63 | 103 | 16 | 40 | 83 | 23 | 49 | 95 | 13 | 25 |
| -2,0 | 17 | 45 | 88 | 13 | 34 | 71 | 19 | 42 | 81 | 10 | 20 |
| -3,0 | 10 | 29 | 58 | 7 | 21 | 46 | 10 | 26 | 53 | 5 | 10 |
| -4,0 | 4 | 12 | 28 | 2 | 8 | 21 | 3 | 10 | 25 | 3 | 6 |



| | |
|----|---|
| H | Difference in height pump-foot valve |
| Ø | Internal pipe diameter |
| P | Height 10 m |
| V | Height 4 m |
| 1 | Burner |
| 2 | Burner pump |
| 3 | Filter |
| 4 | Manual shut off valve |
| 5 | Suction pipework |
| 6 | Bottom valve |
| 7 | Remote controlled rapid manual shut off valve (compulsory in Italy) |
| 8 | Type approved shut off solenoid valve (compulsory in Italy) |
| 9 | Return pipework |
| 10 | Check valve |

note With ring distribution oil systems, the feasible drawings and dimensioning are the responsibility of specialised engineering studios, who must check compatibility with the requirements and features of each single installation.



VENTILATION

The ventilation circuit produces low noise levels with high performance pressure and air output, in spite of the compact dimensions.

Except for the RL 190/M model, the use of reverse curve blades and sound proofing material keeps noise level very low.

In the RL 190/M model, sound has been reduced by the special design of the air suction circuit.

A variable profile cam connects fuel and air setting, ensuring high fuel efficiency in all firing ranges.



Example of the servomotor for air/oil setting



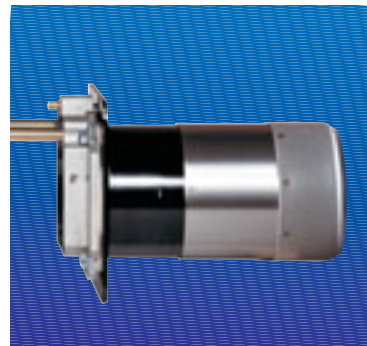
COMBUSTION HEAD

Different lengths of the combustion head can be chosen for the RL/M series of burners.

The choice depends on the thickness of the front panel and the type of boiler.

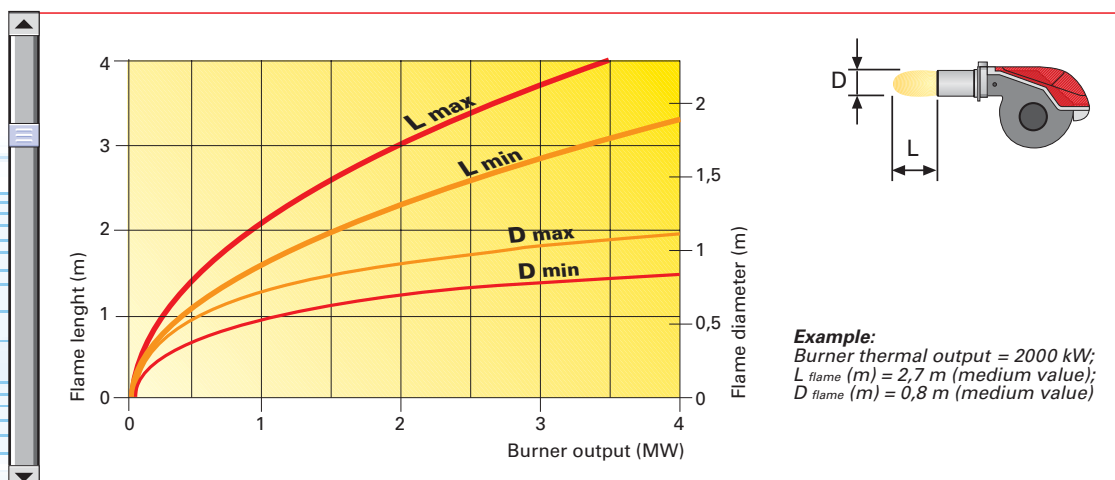
Depending on the type of generator, check that the penetration of the head into the combustion chamber is correct.

The internal position of the combustion head can easily be adjusted to the maximum defined output by adjusting a screw fixed to the flange.



Example of a RL/M burner combustion head

Flame dimensions



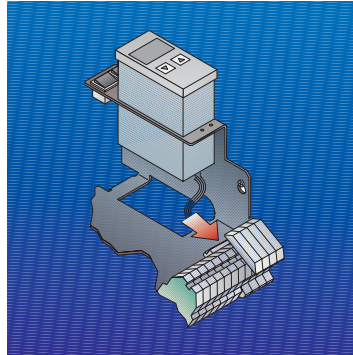
ADJUSTMENT



BURNER OPERATION MODE

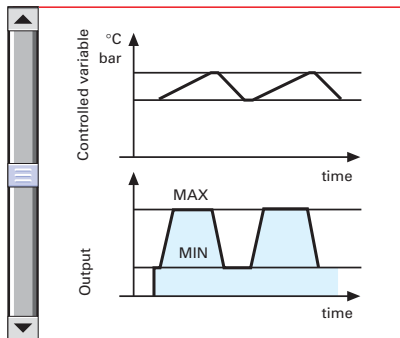
The RL/M series of burners can have "two-stage progressive" or "modulating" operation.

On "two-stage progressive" operation, the burner gradually adapts the output to the requested level, by varying between two pre-set levels (see picture A).



Example of a regulator

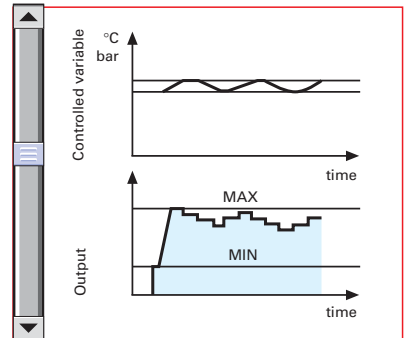
"Two-stage progressive" operation



Picture A

"Modulating" operation

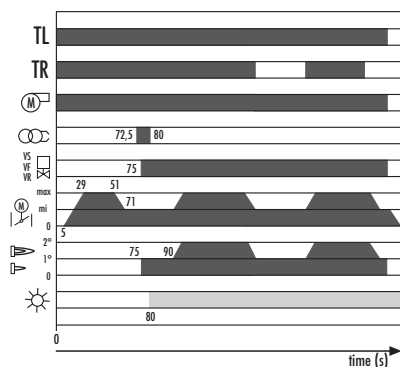
On "modulating" operation, normally required in steam generators, in superheater boilers or diathermic oil burners, a specific regulator and probes are required. These are supplied as accessories that must be ordered separately. The burner can work for long periods at intermediate output levels (see picture B).



Picture B

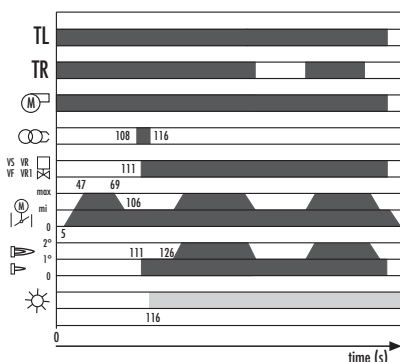
START UP CYCLE

RL 28/M - 38/M - 50/M



- 0" The burner begins the firing cycle: the motor starts turning.
- 5"-29" The servomotor opens the air damper.
- 29"-51" Pre-purge with the air damper open.
- 51"-71" The servomotor takes the air damper to the firing position.
- 72.5" Pre-ignition.
- 75" Firing: all the oil solenoid valves are supplied.
- 90" Output can be increased.

RL 70/M - 100/M - 130/M - 190/M



- 0" The burner begins the firing cycle: the motor starts turning.
- 5"-47" The servomotor opens the air damper.
- 47"-69" Pre-purge with the air damper open.
- 69"-106" The servomotor takes the air damper to the firing position.
- 108" Pre-ignition.
- 111" Firing: all the oil solenoid valves are supplied.
- 126" Output can be increased.



WIRING DIAGRAMS



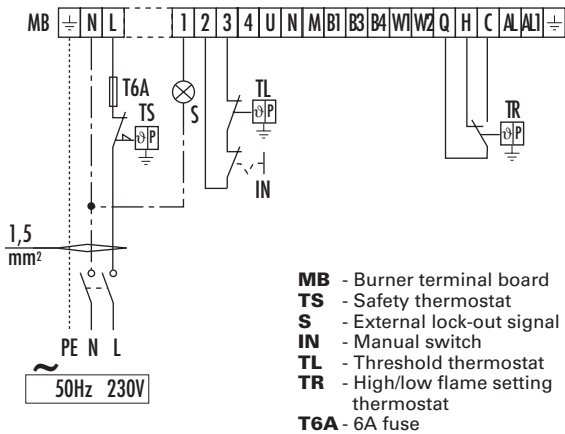
Electrical connections must be made by qualified and skilled personnel, according to the local norms.



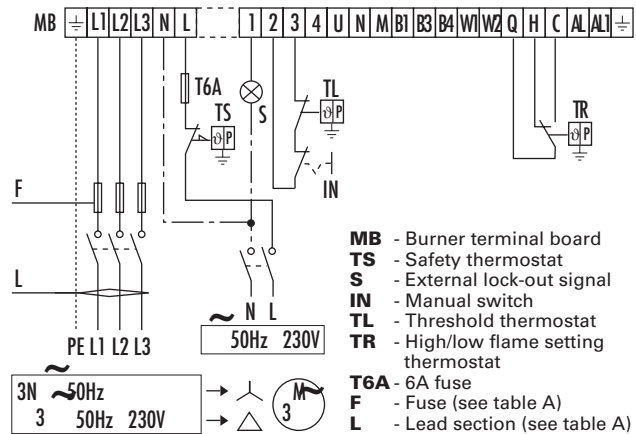
Example of the terminal board for electrical connections for the RL 70-100-130-190/M models

“TWO-STAGE PROGRESSIVE” OPERATION

RL 28/M

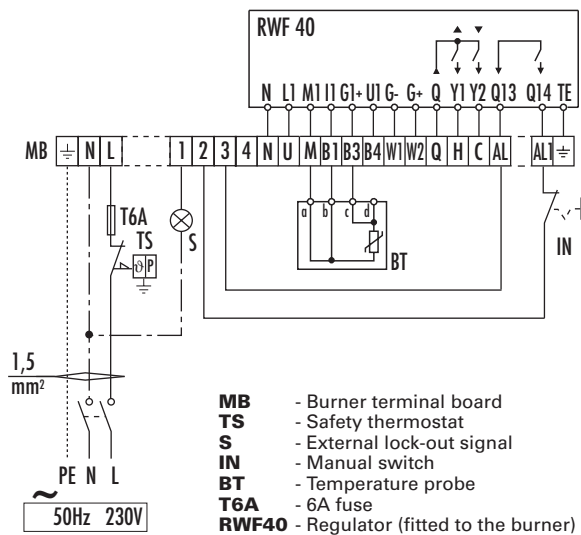


RL 38/M - 50/M - 70/M - 100/M - 130/M - 190/M

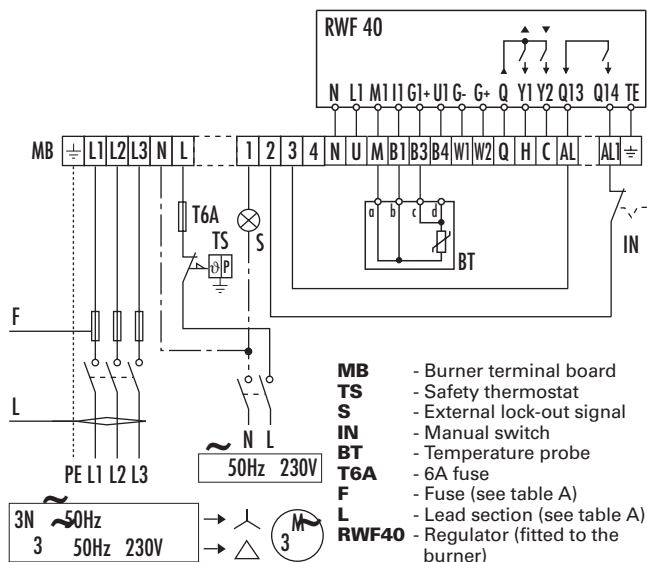


“MODULATING” OPERATION - temperature probe

RL 28/M

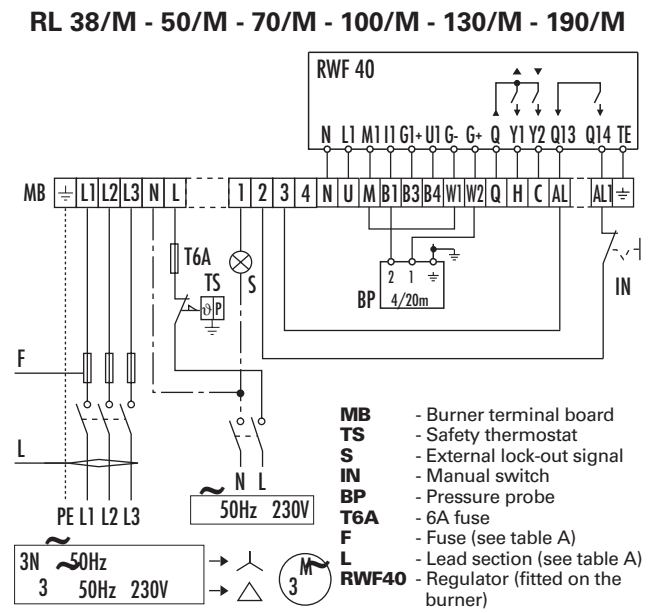
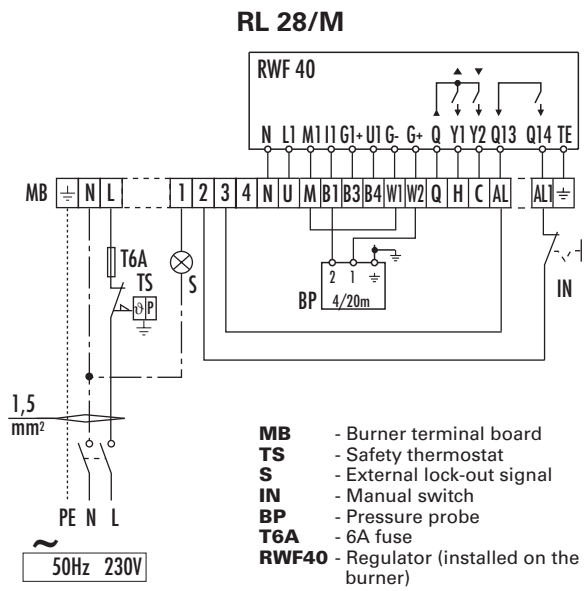


RL 38/M - 50/M - 70/M - 100/M - 130/M - 190/M





“MODULATING” OPERATION - pressure probe



The following table shows the supply lead sections and the type of fuse to be used.

| Model | ▼ RL 28/M | ▼ RL 38/M | ▼ RL 50/M | ▼ RL 70/M | ▼ RL 100/M | ▼ RL 130/M | ▼ RL 190/M |
|-------------------|-----------|-----------|-----------|-----------|------------|------------|------------|
| | 230V | 230V | 400V | 230V | 400V | 230V | 400V |
| F A | T6 | T6 | T6 | T6 | T6 | T10 | T6 |
| L mm ² | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 | 1,5 |

Table A

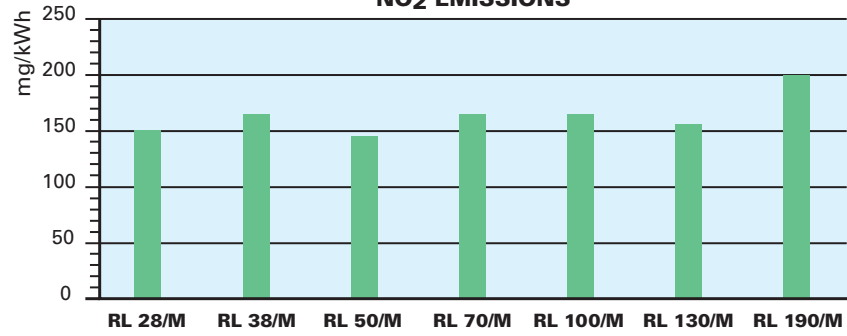




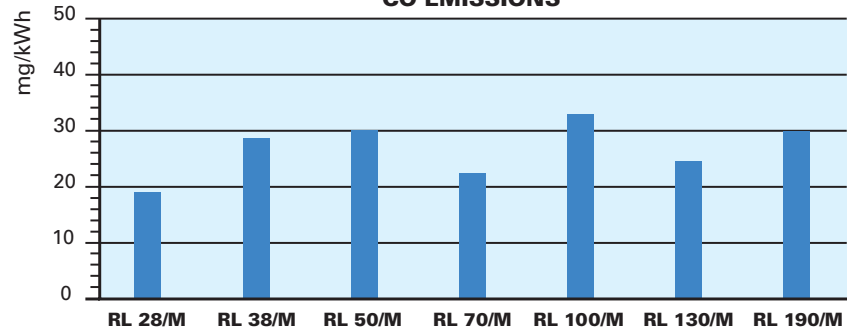
EMISSIONS



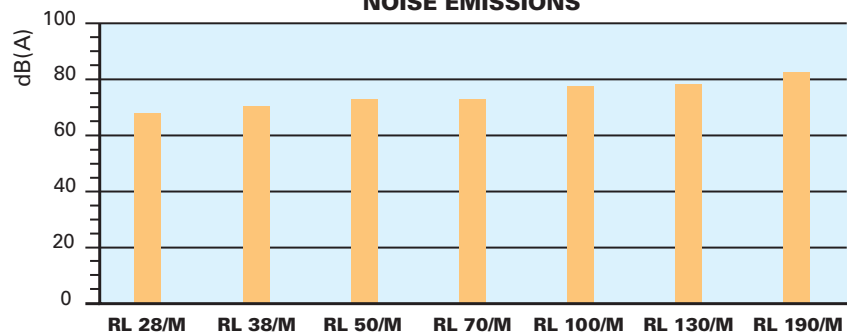
NO₂ EMISSIONS



CO EMISSIONS



NOISE EMISSIONS



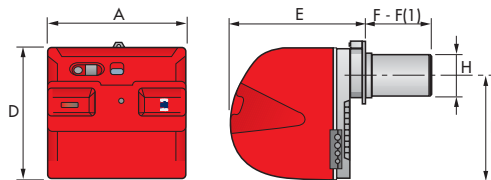
The emission data has been measured in the various models at maximum output, according to EN 267 standard.

OVERALL DIMENSIONS (mm)

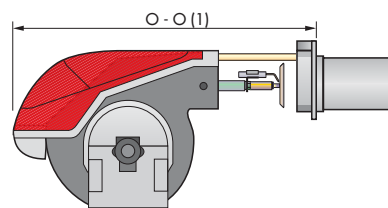
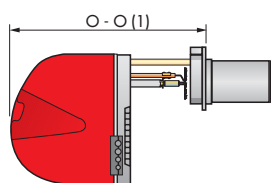
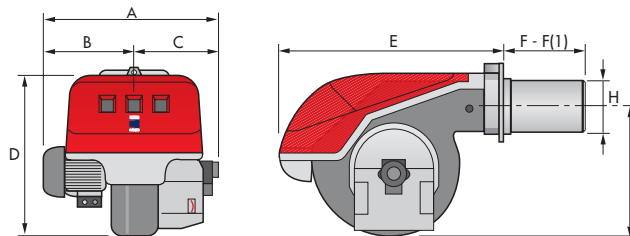


BURNER

RL 28/M - 38/M - 50/M



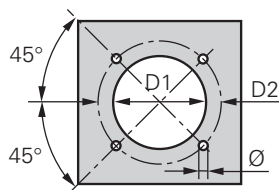
RL 70/M - 100/M - 130/M - 190/M



| Model | A | B | C | D | E | F - F (1) | H | I | O - O (1) |
|------------|-----|-----|-----|-----|-----|-----------|-----|-----|------------|
| ▶ RL 28/M | 476 | - | - | 474 | 468 | 241 - 351 | 140 | 352 | 672 - 807 |
| ▶ RL 38/M | 476 | - | - | 474 | 468 | 241 - 351 | 140 | 352 | 672 - 807 |
| ▶ RL 50/M | 476 | - | - | 474 | 468 | 241 - 351 | 152 | 352 | 672 - 807 |
| ▶ RL 70/M | 663 | 296 | 367 | 555 | 680 | 272 - 385 | 179 | 430 | 951 - 1086 |
| ▶ RL 100/M | 679 | 312 | 367 | 555 | 680 | 272 - 385 | 179 | 430 | 951 - 1086 |
| ▶ RL 130/M | 705 | 338 | 367 | 555 | 680 | 272 - 385 | 189 | 430 | 951 - 1086 |
| ▶ RL 190/M | 813 | 366 | 447 | 555 | 696 | 370 - | 222 | 430 | 1102 - |

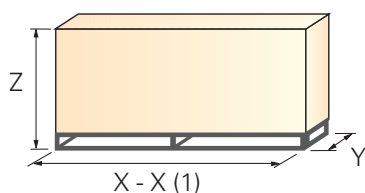
(1) Length with extended combustion head

BURNER - BOILER MOUNTING FLANGE



| Model | D1 | D2 | Ø |
|------------|-----|---------|-----|
| ▶ RL 28/M | 160 | 224 | M8 |
| ▶ RL 38/M | 160 | 224 | M8 |
| ▶ RL 50/M | 160 | 224 | M8 |
| ▶ RL 70/M | 185 | 275-325 | M12 |
| ▶ RL 100/M | 185 | 275-325 | M12 |
| ▶ RL 130/M | 195 | 275-325 | M12 |
| ▶ RL 190/M | 230 | 325-368 | M16 |

PACKAGING



| Model | X - X (1) | Y | Z | kg |
|------------|-----------|-----|-----|----|
| ▶ RL 28/M | 872 | 540 | 550 | 39 |
| ▶ RL 38/M | 872 | 540 | 550 | 41 |
| ▶ RL 50/M | 872 | 540 | 550 | 42 |
| ▶ RL 70/M | 1150 | 792 | 600 | 65 |
| ▶ RL 100/M | 1150 | 792 | 600 | 68 |
| ▶ RL 130/M | 1150 | 792 | 600 | 71 |
| ▶ RL 190/M | 1200 | 800 | 850 | 95 |

(1) Length with extended combustion head



INSTALLATION DESCRIPTION

Installation, start up and maintenance must be carried out by qualified and skilled personnel.
All operations must be performed in accordance with the technical handbook supplied with the burner.

BURNER SETTING

- ▶ All the burners have slide bars, for easier installation and maintenance.
- ▶ After drilling the boilerplate, using the supplied gasket as a template, dismantle the blast tube from the burner and fix it to the boiler.
- ▶ Adjust the combustion head.
- ▶ Refit the burner casing to the slide bars.
- ▶ Install the nozzle, choosing this on the basis of the maximum boiler output and following the diagrams included in the burner instruction handbook.
- ▶ Check the position of the electrodes.
- ▶ Close the burner, sliding it up to the flange, keeping it slightly raised to avoid the flame stability disk rubbing against the blast tube.



HYDRAULIC / ELECTRICAL CONNECTIONS AND START-UP

- ▶ The burners are supplied for connection to two pipes fuel supply system.
- ▶ Connect the ends of the flexible pipes to the suction and return pipework using the supplied nipples.
- ▶ Make the electrical connections to the burner following the wiring diagrams included in the instruction handbook.
- ▶ Prime the pump by turning the motor (after checking rotation direction if it is a three phase motor).
- ▶ On start up, check:
 - Pressure pump and valve unit regulator (to max. and min.)
 - Combustion quality, in terms of unburned substances and excess air.

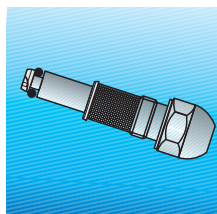


BURNER ACCESSORIES



Nozzles

The return nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required fuel output.

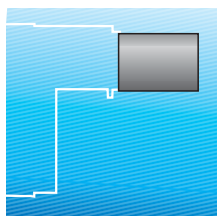


| Nozzles type A3 45° | | |
|-----------------------|---------------------------|-------------|
| Burner | Rated delivery (kg/h) (*) | Nozzle code |
| RL 28/M | 15 | 3009850 |
| RL 28/M - 38/M | 20 | 3009851 |
| RL 28/M - 38/M - 50/M | 30 | 3009852 |
| RL 38/M - 50/M - 70/M | 40 | 3009853 |
| RL 50/M - 70/M | 50 | 3009854 |
| RL 70/M - 100/M | 60 | 3009855 |
| RL 70/M - 100/M | 70 | 3009856 |
| RL 100/M - 130/M | 80 | 3009857 |
| RL 100/M - 130/M | 90 | 3009858 |
| RL 100/M - 130/M | 100 | 3009859 |
| RL 130/M | 110 | 3009860 |
| RL 130/M - 190/M | 120 | 3009861 |
| RL 130/M - 190/M | 130 | 3009862 |
| RL 190/M | 140 | 3009863 |
| RL 190/M | 160 | 3009864 |
| RL 190/M | 180 | 3009865 |
| RL 190/M | 200 | 3009866 |

(*) Nozzle rated delivery is referred to atomised pressure

Extended head kit

“Standard head” burners can be transformed into “extended head” versions, by using the special kit. The kits available for the various burners, giving the original and the extended lengths, are listed below.

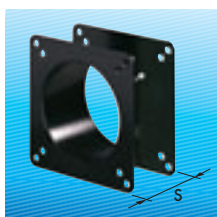


| Extended head kit | | | |
|-------------------|---------------------------|---------------------------|----------|
| Burner | Standard head length (mm) | Extended head length (mm) | Kit code |
| RL 28/M | 241 | 351 | 3010120 |
| RL 38/M | 241 | 351 | 3010121 |
| RL 50/M | 241 | 351 | 3010122 |
| RL 70/M | 272 | 385 | 3010159 |
| RL 100/M | 272 | 385 | 3010160 |
| RL 130/M | 272 | 385 | 3010161 |
| RL 190/M | 370 | - | - |



Spacer kit

If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following table:



| Spacer kit | | |
|-------------------------|-------------------------|----------------|
| Burner | Spacer thickness S (mm) | Kit code |
| RL 28/M - 38/M - 50/M | 90 | 3010095 |
| RL 70/M - 100/M - 130/M | 135 | 3010129 |
| RL 190/M | 110 | 3000722 |

Sound proofing box

If noise emission needs reducing even further, sound-proofing boxes are available, as given in the following table:



| Sound proofing box | | | |
|-------------------------|----------|-------------------------------------|----------------|
| Burner | Box type | Average noise reduction [dB(A)] (*) | Box code |
| RL 28/M - 38/M - 50/M | C1/3 | 10 | 3010403 |
| RL 70/M - 100/M - 130/M | C1/3 | 10 | 3010403 |
| RL 190/M | C4/5 | 10 | 3010404 |

(*) according to EN 15036-1 standard

Degasing unit

To solve problem of air in the oil sucked, two versions of degasing unit are available.



| Degasing unit | | | |
|--|----------------|-----------------------|--------------------|
| Burner | Filter | Filtering degree (µm) | Degasing unit code |
| RL 28/M - 38/M - 50/M RL 70/M - 100/M | With filter | 50 - 75 | 3010055 |
| RL 28/M - 38/M - 50/M RL 70/M - 100/M | Without filter | - | 3010054 |



Head kit for “reverse flame chamber”

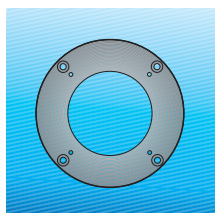
In certain cases, the use of the burner on reverse flame boilers can be improved by using an additional cylinder.



| Head kit for “reverse flame chamber” | | | |
|--------------------------------------|---|--|----------------|
| Burner | Standard head length with cylinder (mm) | Extended head length with cylinder(mm) | Kit code |
| RL 28/M - 38/M | 319 | 429 | 3010178 |
| RL 50/M | 319 | 429 | 3010179 |
| RL 70/M - 100/M | 375 | 488 | 3010180 |
| RL 130/M | 375 | 488 | 3010183 |
| RL 190/M | 493 | - | 3010241 |

Connection flange kit

A kit is available for use where the burner opening on the boiler is of excessive diameter.



| Connection flange kit | |
|-----------------------|----------------|
| Burner | Kit code |
| RL 28/M - 38/M - 50/M | 3010138 |



Accessories for modulating operation

To obtain modulating operation, the RL/M series of burners requires a regulator with three point outlet controls. The following table lists the accessories for modulating operation with their application range.



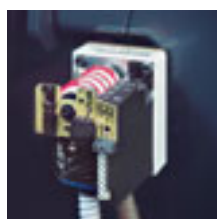
| Burner | Regulator type | Regulator code |
|---------------------------------|----------------|----------------|
| RL 28/M - 38/M - 50/M | RWF 40 | 3010212 |
| RL 70/M - 100/M - 130/M - 190/M | | |

The relative temperature or pressure probes fitted to the regulator must be chosen on the basis of the application.



| Probe type | Range (°C) (bar) | Probe code |
|--------------------|------------------|----------------|
| Temperature PT 100 | -100 ÷ 500°C | 3010110 |
| Pressure 4 ÷ 20 mA | 0 ÷ 2,5 bar | 3010213 |
| Pressure 4 ÷ 20 mA | 0 ÷ 16 bar | 3010214 |

Depending on the servomotor fitted to the burner, a three-pole potentiometer (1000 Ω) can be installed to check the position of the servomotor. The KITS available for the various burners are listed below.



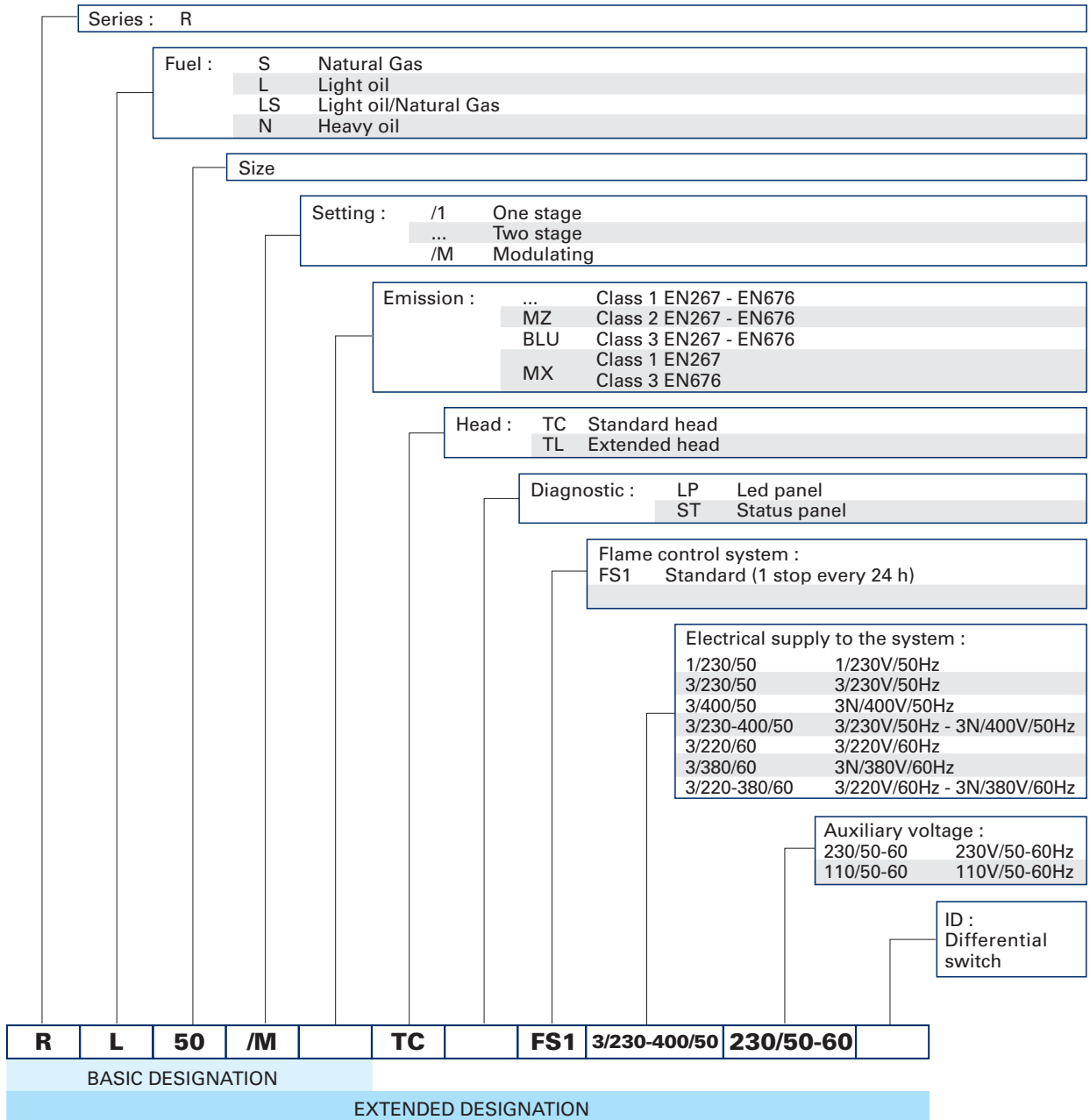
| Burner | Potentiometer kit code |
|---------------------------------|------------------------|
| RL 28/M - 38/M - 50/M | 3010109 |
| RL 70/M - 100/M - 130/M - 190/M | 3010021 |

SPECIFICATION



A specific index guides your choice of burner from the various models available in the RL/M series. Below is a clear and detailed specification description of the product.

DESIGNATION OF SERIES





AVAILABLE BURNER MODELS

| | | | | | |
|----------------|--------------|-----------|-----------------|--------------|-----------|
| RL 28/M TC FS1 | 1/230/50 | 230/50-60 | RL 100/M TC FS1 | 3/230-400/50 | 230/50-60 |
| RL 28/M TL FS1 | 1/230/50 | 230/50-60 | RL 100/M TL FS1 | 3/230-400/50 | 230/50-60 |
| RL 38/M TC FS1 | 3/230-400/50 | 230/50-60 | RL 100/M TC FS2 | 3/230-400/50 | 230/50-60 |
| RL 38/M TL FS1 | 3/230-400/50 | 230/50-60 | RL 100/M TL FS2 | 3/230-400/50 | 230/50-60 |
| RL 50/M TC FS1 | 3/230-400/50 | 230/50-60 | RL 130/M TC FS1 | 3/230-400/50 | 230/50-60 |
| RL 50/M TL FS1 | 3/230-400/50 | 230/50-60 | RL 130/M TL FS1 | 3/230-400/50 | 230/50-60 |
| RL 70/M TC FS1 | 3/230-400/50 | 230/50-60 | RL 130/M TC FS2 | 3/230-400/50 | 230/50-60 |
| RL 70/M TL FS1 | 3/230-400/50 | 230/50-60 | RL 130/M TL FS2 | 3/230-400/50 | 230/50-60 |
| RL 70/M TC FS2 | 3/230-400/50 | 230/50-60 | RL 190/M TC FS1 | 3/230-400/50 | 230/50-60 |
| RL 70/M TL FS2 | 3/230-400/50 | 230/50-60 | RL 190/M TC FS2 | 3/230-400/50 | 230/50-60 |

Other versions are available on request.

PRODUCT SPECIFICATION

Burner:

Monoblock forced draught oil burner with two stage progressive or modulating setting, with a specific kit, fully automatic, made up of:

- air suction circuit lined with sound-proofing material
- fan with reverse curve blades (forward curve blades on the 190/M model) high performance with low sound emissions
- air damper for air setting and automatic oil output regulator controlled by a servomotor with variable cam
- starting motor at 2800 rpm, three-phase 400V with neutral, 50Hz (single-phase, 230V and 50Hz for the 28/M model)
- combustion head, that can be set on the basis of required output, fitted with:
 - stainless steel end cone, resistant to corrosion and high temperatures
 - ignition electrodes
 - flame stability disk
- gears pump for high pressure fuel supply, fitted with:
 - filter
 - pressure regulator
 - connections for installing a pressure gauge and vacuumeter
 - internal by-pass for single pipe installation
- valve unit with a double oil safety valve on the output circuit and safety valve on the return circuit; double safety valve on the return circuit for models RL 100/M, RL 130/M, RL 190/M and for all models in the TRD-72, NBN version
- safety oil pressure switch for stop the burner in case of problems in the return circuit
- minimum oil pressure switch in the output circuit for the TRD-72, NBN versions
- photocell for flame detection
- flame control panel, fitted with control function for the correct positioning of the servomotor and possibility of post-ventilation by just changing the electric wiring
- burner on/off switch
- flame inspection window
- manual or automatic output increase/decrease switch
- slide bars for easier installation and maintenance
- protection filter against radio interference
- IP 44 electric protection level.

Conforming to:

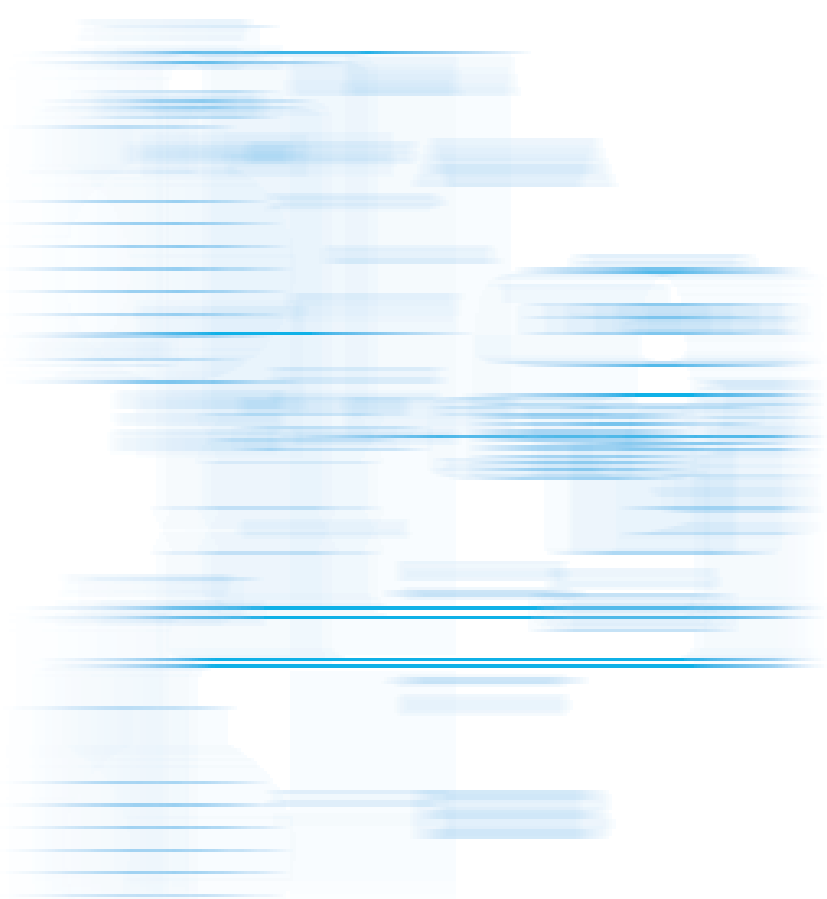
- 89/336/EEC directive (electromagnetic compatibility)
- 73/23/EEC directive (low voltage)
- 92/42/EEC directive (performance)
- 98/37/EEC directive (machinery)
- EN 267 (liquid fuel burners).

**Standard equipment:**

- 2 flexible pipes for connection to the oil supply network
- 2 gaskets for the flexible pipes
- 2 nipples for connection to the pump
- 4 screws for fixing the burner flange to the boiler
- 1 thermal screen
- wiring loom fittings for electrical connections
- 2 slide bar extensions (for the extended head models and the RL 190/M model)
- instruction handbook for installation, use and maintenance
- spare parts catalogue.

Available accessories to be ordered separately:

- return nozzles
- extended head kit (except for the RL 190/M model)
- spacer kit
- sound-proofing box
- degasing unit
- head kit for "reverse flame chamber"
- connection flange kit
- RWF 40 output regulator
- temperature probe -100 – 500°C
- pressure probe 0 – 2.4 bar
- pressure probe 0 – 16 bar
- potentiometer kit for the servomotor.





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