

Modulating light oil burners

RL 70-190/M

GAS

LIGHT OIL

DUAL FUEL

HEAVY OIL



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RL 70-190/M series of burners covers a firing range from 261 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 70-190/M series burners guarantees high efficiency levels in all the various applications, thus reducing fuel consumption and running costs. Optimization 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.

Guidelines for installation of burners in conformity to EU Regulation:

A RIELLO burner (Heat Generator), where it is matched with a water-based boiler (Heater Housing) with a nominal output ≤ 400 kW, providing heat for heating purposes and heat to deliver sanitary hot water, can be installed:

- With boilers (heater housings) already in service in the field, for replacement of identical products, in conformity to Article 1, paragraph 2, point (G) of the EU Regulation No. 813/2013;
- With boilers (heater housings) on a new installation, if they have emissions complying with the requirement of Annex II, paragraph 4 of the EU regulation No. 813/2013.

TECHNICAL DATA

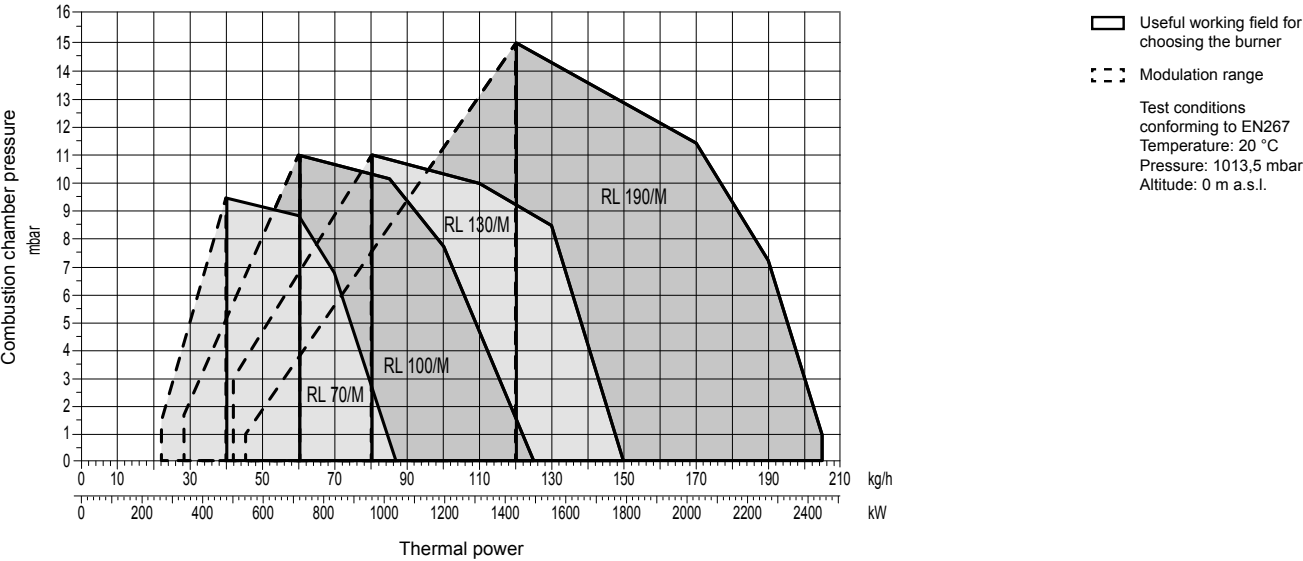
Description	Heat output		Total electrical power	Electric power supply		Note	Code
	kW	kg/h	kW	Ph/V/Hz	V/Hz		
RL 70/MZ TC FS1	261/474-1043	22/40-88	1.4	3/400/50	230/50-60	(1)	20205587
RL 70/MZ TL FS1	261/474-1043	22/40-88	1.4	3/400/50	230/50-60	(1)	20205576
RL 100/MZ TC FS1	332/711-1482	28/60-125	2.1	3/400/50	230/50-60	(1)	20205600
RL 100/MZ TL FS1	332/711-1482	28/60-125	2.1	3/400/50	230/50-60	(1)	20205603
RL 100/MZ TC FS1	332/711-1482	28/60-125	2.1	3/380-460/60	230/50-60	(1)	20205833
RL 130/MZ TC FS1	498/948-1779	42/80-150	2.6	3/400/50	230/50-60	(1)	20205645
RL 130/MZ TL FS1	498/948-1779	42/80-150	2.6	3/400/50	230/50-60	(1)	20205765
RL 130/MZ TL FS1	498/948-1779	42/80-150	2.6	3/380-460/60	230/50-60	(1)	20208634
RL 190/MZ TC FS1	534/1423-2431	45/120-205	5.5	3/400/50	230/50-60	(1)	20205588
RL 190/MZ TC FS1	534/1423-2431	45/120-205	5.5	3/230/50	230/50-60	(1)	20205799
RL 190/MZ TC FS1	534/1423-2431	45/120-205	5.5	3/460/60	220/60	(1)	20205826
RL 190/MZ TL FS1	534/1423-2431	45/120-205	5.5	3/400/50	230/50-60	(1)	20208601

Net calorific value of light oil: 11.86 kWh/kg - Viscosity at 20 °C: 4-6 mm²/s (cSt).

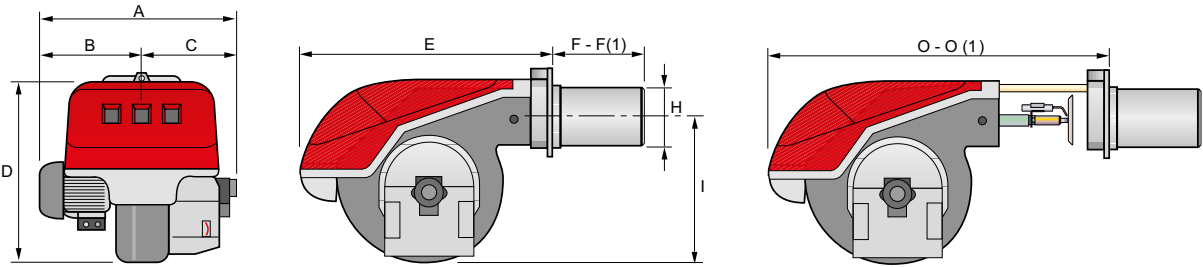
The burners comply with 2014/30/EU - 2014/35/EU - 2006/42/EC Directives and EN 267 Standard.

(1) Model with LFL control box.

FIRING RATES

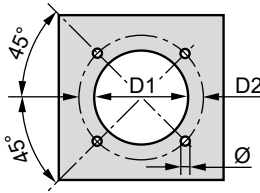


OVERALL DIMENSIONS

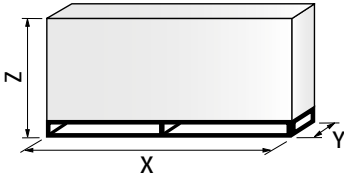


Description	A mm	B mm	C mm	D mm	E mm	F - F(1) mm	H mm	I mm	O - O(1) mm
RL 70/M	663	296	367	555	680	272 - 385	179	430	951 - 1086
RL 100/M	679	312	367	555	680	272 - 385	179	430	951 - 1086
RL 130/M	705	338	367	555	680	272 - 385	189	430	951 - 1086
RL 190/M	813	366	447	555	712	370	222	430	1166

(1) Dimension with extended head.



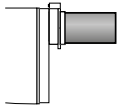






Description	D1 mm	D2 mm	Ø mm
RL 70/M	185	275 - 325	M12
RL 100/M	185	275 - 325	M12
RL 130/M	195	275 - 325	M12
RL 190/M	230	325 - 368	M16



Description	X(1) mm	Y mm	Z mm	Net weight kg
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.

ACCESSORIES

Drawing	Burner model	Specification	Code
		EXTENDED HEAD KIT "Standard head" burners can be transformed into "extended head" versions, by using the special kit. The kit available, giving the original and the extended lengths, is listed below.	
	RL 70/M	Standard head length = 272 mm - Extended head length = 385 mm	3010159
	RL 100/M	Standard head length = 272 mm - Extended head length = 385 mm	3010160
	RL 130/M	Standard head length = 272 mm - Extended head length = 385 mm	3010161
	RL 190/M	Standard head length = 370 mm - Extended head length = 526 mm	20058084
		SPACER KIT If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following table:	
	RL 70-100-130/M	Spacer thickness S = 135 mm	3010129
	RL 190/M	Spacer thickness S = 102 mm	3000722
	All models	SOUND PROOFING BOX If noise emission needs reducing even further, sound-proofing boxes are available. When a lower "B" dimension is required, it is available the box support kit code 20065135 which allows to reduce it at the fixed dimension of 55 mm. The sound-proofing boxes are not suitable for outdoor use. Box type: C4/5 Dimensions: A = 850 mm, B (min-max) = 160-980 mm, C = 110 mm, D = 980 mm, E = 930 mm Average noise reduction according to EN 15036-1 Standard = 10 dB(A).	3010404
	RL 70-100/M	DEGASING UNIT With single pipe systems, you can find air in the oil sucked by the pump that comes from the oil itself due to negative pressure or to a faulty seal. To solve this problem, we recommend fitting a degasing unit near the burner. Kit code with filter; filtering degree 50 - 75 µm. Max capability 80 kg/h (more filters are needed for higher flow).	3010055
		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.	
	RL 70-100/M	Standard head length with cylinder 375 mm - Extended head length with cylinder 488 mm	3010180
	RL 130/M	Standard head length with cylinder 375 mm - Extended head length with cylinder 488 mm	3010183
	RL 190/M	Standard head length with cylinder 493 mm.	3010241
	All models	POWER CONTROLLER To obtain modulating operation, the burner requires a regulator. For remote setpoint use RWF 55.	
		RWF 50.2 - Standard version.	20082208
		RWF 55.5 - Plus version.	20099657
	All models	TEMPERATURE PROBE The temperature probe to be fitted to the power controller must be chosen based on the application. Temperature probe type PT 100 (-100-500 °C).	3010110
	All models	PRESSURE PROBE The pressure probe to be fitted to the power controller must be chosen based on the application.	
		Pressure (0-2.5 bar) with 4-20 mA output.	3010213
		Pressure (0-16 bar) with 4-20 mA output.	3010214
		Pressure (0-25 bar) with 4-20 mA output.,	3090873
	All models	POTENTIOMETER KIT Depending on the servomotor fitted to the burner, a three-pole potentiometer (0-1000Ω) can be installed to check the position of the servomotor.	3010416

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NOZZLES

The following list shows the features and codes on the basis of the maximum required fuel output.

Drawing	Burner model	Specification	Note	Code	
		Rated delivery (kg/h)		TYPE A3	TYPE A4
	RL 70/M	40	(1)	3009853	20067277
	RL 70/M	50	(1)	3009854	20067279
	RL 70-100/M	60	(1)	3009855	20067281
	RL 70-100/M	70	(1)	3009856	20067283
	RL 100-130/M	80	(1)	3009857	20067284
	RL 100-130/M	90		3009858	20067285
	RL 100-130/M	100		3009859	20067286
	RL 130/M	110		3009860	20067287
	RL 130-190/M	120		3009861	20067288
	RL 130-190/M	130		3009862	20067289
	RL 190/M	140		3009863	20067290
	RL 190/M	150		20059496 (*)	20067291
	RL 190/M	160		3009864	20067293
	RL 190/M	180		3009865	20067295
	RL 190/M	200		3009866	20067297

(1) Each burner needs N° 1 nozzle.

(*) 60° angle.

STATE OF SUPPLY

Monoblock forced draught oil burners, two stage progressive or modulating operation with a kit, made up of:

- Air suction circuit lined with sound-proofing material
- Fan with reverse curve blades (forward curve blades on the 190/M model)
- Air damper for air setting and automatic oil output regulator controlled by a servomotor with variable cam
- Combustion head, that can be set on the basis of required output
- Gears pump for high pressure fuel supply
- 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
- Minimum oil pressure switch in the output circuit for the TRD-72, NBN versions
- Photocell for flame detection
- Burner safety control box
- 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

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