

ONE STAGE LIGHT OIL BURNERS

▶ RIELLO 40 H SERIES ▶ H5 21 ÷ 65 kW



The Riello 40 H series of one stage light oil burners, has been designed to be used friendly and to respond to any request for hotel kitchen applications. The Riello 40 H series is available in a single model with an output ranging from 21 to 65 kW. The high quality level guarantees safe working. In developing this burner, special attention was paid to the ease of installation and adjustment, to obtaining the smallest size possible to fit into any sort of application. This burner can work in two stages, choosing the output required according with the heat input that the application needs. This results in very economical operation of the system and a decrease of the cyclic phases of ignition/shut down, less thermal stress of the plant and a significant decrease in emissions. The model is approved by the EN 267 European Standard and conform to European Directives for EMC, Low Voltage, Machinery and boiler Efficiency. All the Riello 40 H burners are fired before leaving the factory.

TECHNICAL DATA

Model		▼ H5	
Burner operation mode		One stage	
Modulation ratio at max. output		--	
Servo-motor	type	--	
	run time	s	
Heat output	kW	21 - 65	
	Mcal/h	18,4 - 56	
	kg/h	1,8 - 5,5	
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	R.B.L.	
	delivery	kg/h	
Atomised pressure	bar	7 - 15	
Fuel temperature	max. °C	50	
Fuel pre-heater		NO	
Fan	type	centrifugal with forward curve blades	
Air temperature	max. °C	40	
Electrical supply	Ph/Hz/V	1/50/230±10%	
Auxiliary electrical supply	Ph/Hz/V	--	
Control box	type	R.B.L. 530 SE	
Total electrical power	kW	0,13	
Auxiliary electrical power	kW	--	
Heaters electrical power	kW	--	
Protection level	IP	40	
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	0,1	
Rated fan motor current	A	0,75	
Fan motor start up current	A	3	
Fan motor protection level	IP	20	
Ignition transformer	type	Incorporated in the control box	
	V1-V2	8 kV	
	I1-I2	22 mA	
Operation		intermittent (at least one stop every 24h)	
Sound pressure	dB(A)	59	
Sound power	W	--	
CO emission	mg/kWh	<60	
Grade of smoke indicator	N° Bach.	<1	
C _x H _y Emissions	mg/kWh	<10 (after the first 20s)	
NO _x Emissions	mg/kWh	<250	
Directive		89/336/EEC, 73/23/EEC, 98/37/EEC, 92/42/EEC	
Conforming to		EN 267	
Certification		--	

Reference conditions:

Temperature: 20 °C

Pressure: 1013,5 mbar

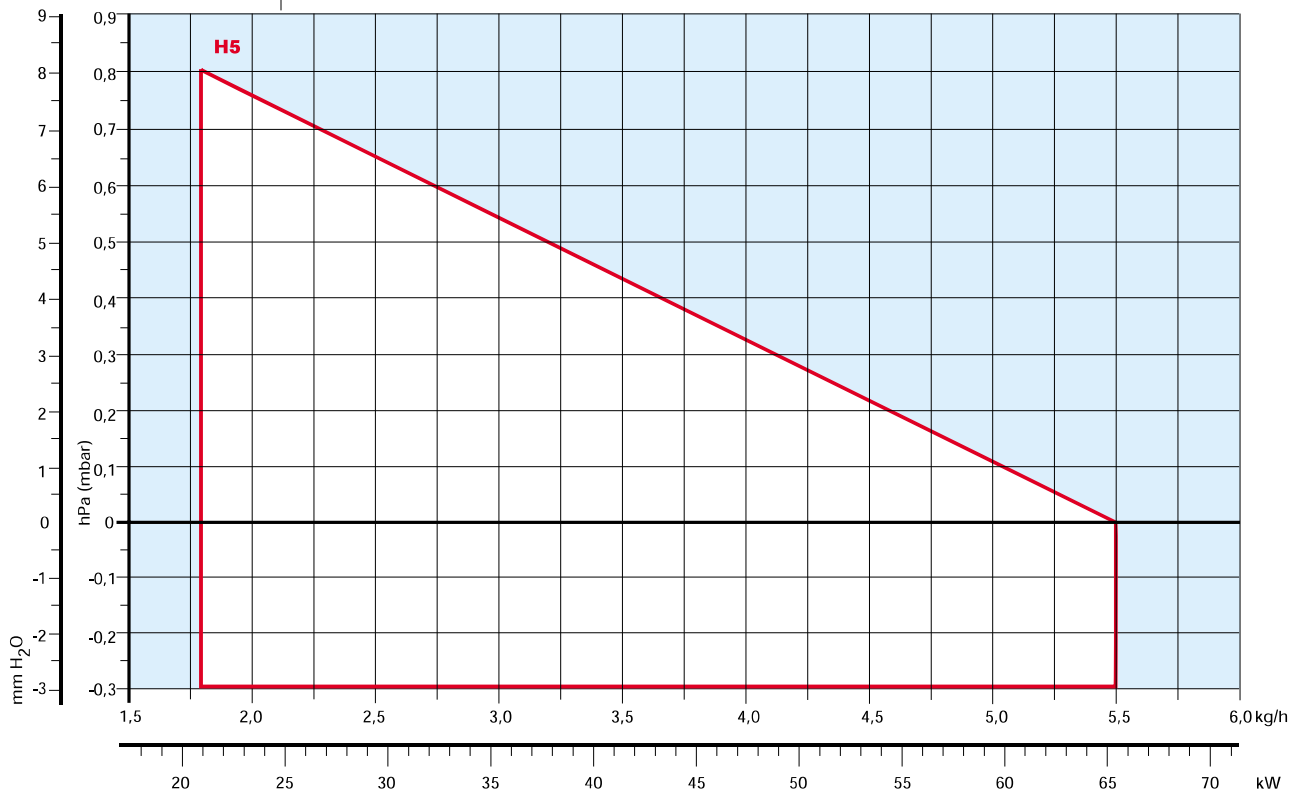
Altitude: 100 m a.s.l.

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

Test conditions conforming to EN 267:

Temperature: 20°C
Pressure: 1013.5 mbar
Altitude: 100 m a.s.l.



FUEL SUPPLY



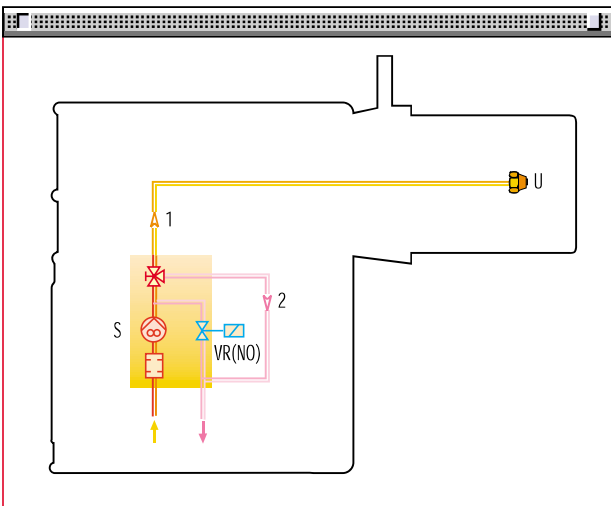
► HYDRAULIC CIRCUIT

The burner has a R.B.L. geared pump with safety valve on the return circuit.



Fuel pump

H5



S	Pump with filter and pressure regulator on the delivery pipe
VR(NO)	Oil return valve on the delivery pipe
1	Oil input pipe to the nozzle
2	Oil return pipe from the regulator
U	Nozzle

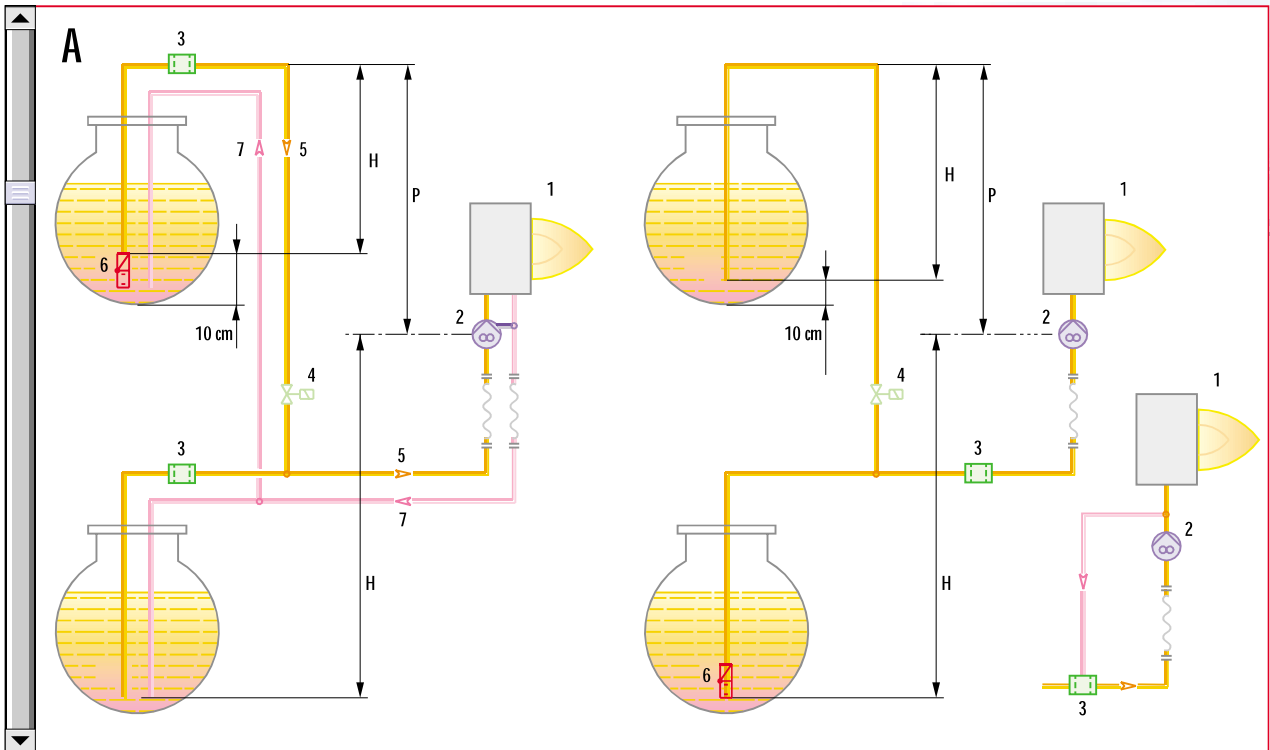
Fuel feed to the burner can be from the right or the left side on the model.

SELECTING THE FUEL SUPPLY LINES

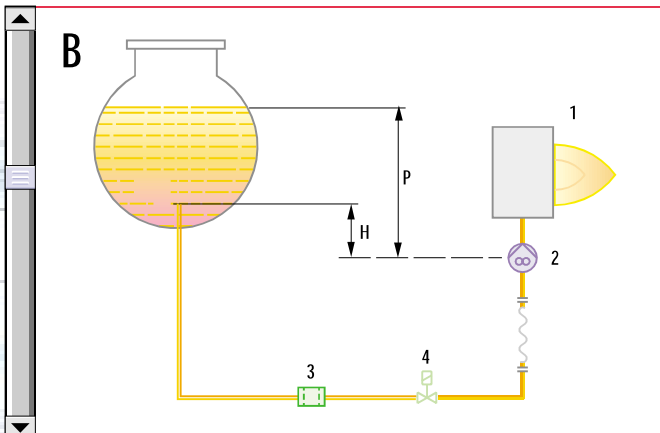
The fuel feed must be completed with the safety devices required by the local regulations in force.

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

MAXIMUM EQUIVALENT LENGTH OF THE PIPEWORK L[m]				
Pipe size	▼ Type A system		▼ Type B system	
	Ø8mm	Ø10mm	Ø8mm	Ø10mm
H (m)	L _{max} (m)	L _{max} (m)	L _{max} (m)	L _{max} (m)
0	35	100	-	-
0,5	30	100	10	20
1,0	25	100	20	40
1,5	20	90	40	80
2,0	15	70	60	100
3,0	8	30	-	-
3,5	6	20	-	-



Type of system that can be installed



H	Difference in height
Ø	Internal pipe diameter
P	Difference in height ≤ 4 m
1	Burner
2	Pump
3	Filter
4	Shut-off solenoid valve
5	Suction pipework
6	Bottom valve
7	Return pipework



VENTILATION

The ventilation circuit always ensure low noise levels with high performance of pressure and air delivery, inspite of its compact size.



Air suction



COMBUSTION HEAD

The burner is fitted with adjustable combustion head.

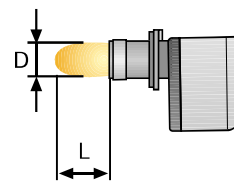
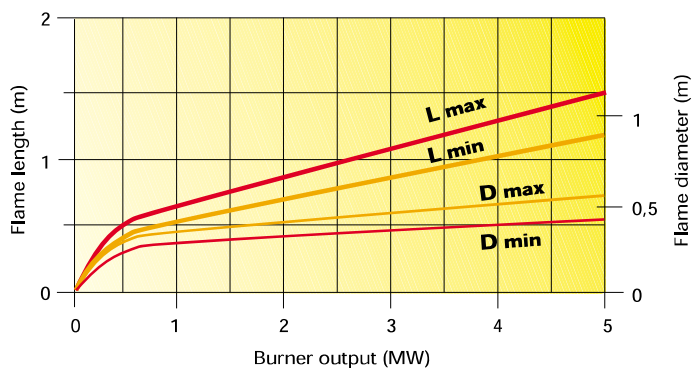
Simple adjustment to the combustion head allows adapting internal geometry of the head to the maximum rated output of the burner.

The following diagram shows the flame dimensions in relation to the burner output. The length and diameter shown in the diagram below should be employed for a preliminary check: it is required a more careful investigation if combustion chamber dimensions are much different from the above reported values.



Combustion head

Dimensions of the flame



Example:
 Burner thermal output = 350 kW;
 L_{flame} (m) = 1,2 m (medium value);
 D_{flame} (m) = 0,6 m (medium value)

ADJUSTMENT



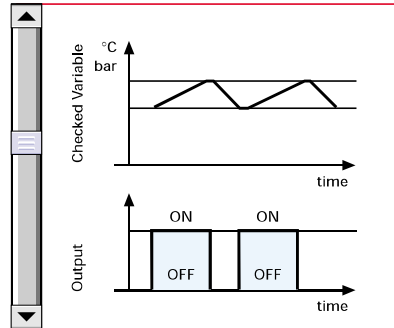
BURNER OPERATION MODE

The H5 model is one stage operation. The output firing can be adjusted by hand.

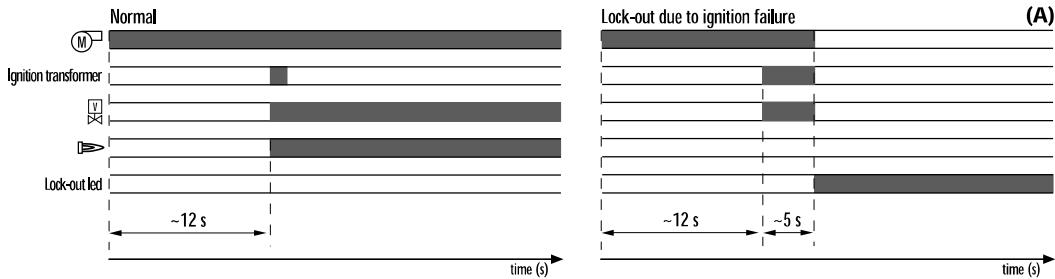


Air damper

One stage operation



START UP CYCLE



(A) Lock-out is shown by a led on the appliance.

Correct operation

- 0s The burner begins the ignition cycle.
- 0s-12s Pre-purge.
- 12s Ignition.

Lock-out due to ignition failure

If the flame does not light within the safety limit (~ 5s) the burner locks-out.



WIRING DIAGRAMS

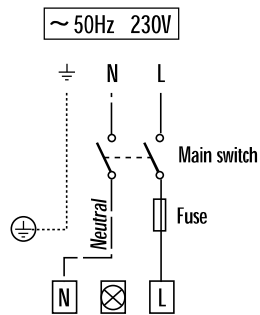
Electrical connections must be made by qualified and skilled personnel in conformity with the local regulations in force.



Control box fitted with an ignition transformer

▶ "ONE STAGE" OPERATION

H5



Terminal block of control box

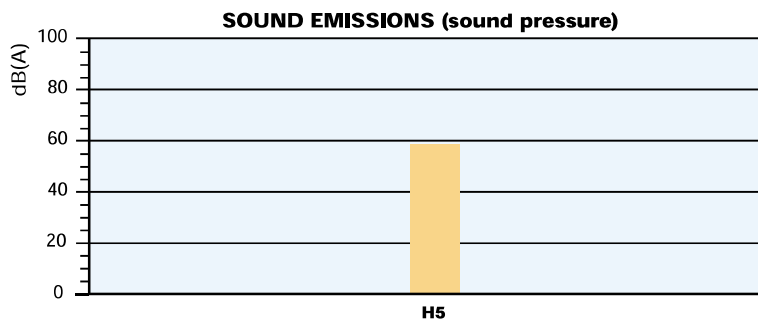
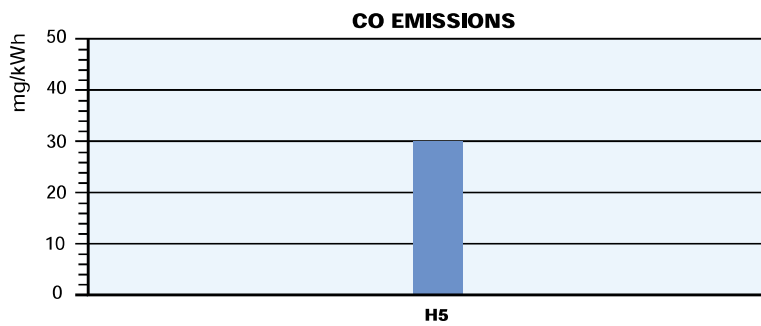
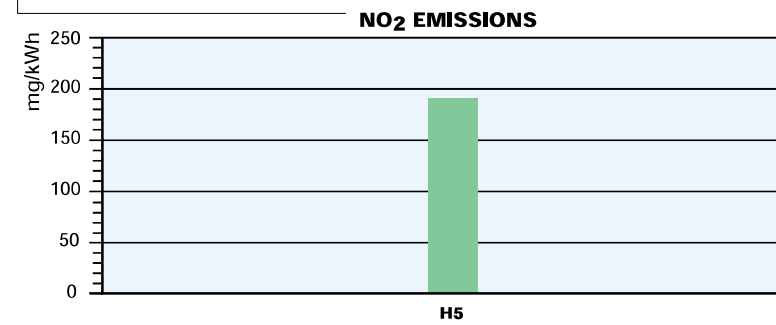
The following table shows the supply lead sections and types of fuse to be used.

Model		▼ H5
		230V
F	A	6
L	mm ²	1

F = Fuse

L = Lead section

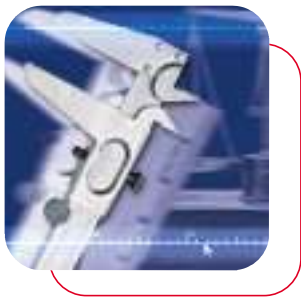
EMISSIONS



The emission data have been measured in the various models at maximum output, in conformity with EN 267 standard.

Special attention has been paid to noise reduction. The model is fitted with sound-deadening material inside the cover.

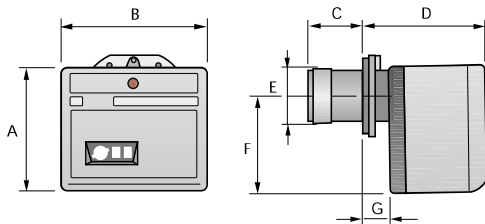




OVERALL DIMENSIONS (mm)

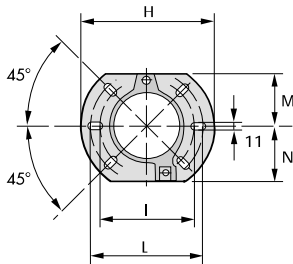
The model is distinguished by its reduced size, in relation to its output.

BURNER



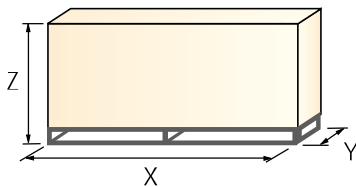
Model	A	B	C	D	E	F	G
► H5	233	272	107	238	89	180	37

BURNER-BOILER MOUNTING FLANGE



Model	H	I	L	M	N
► H5	180	130	150	72	75

PACKAGING



Model	X	Y	Z	kg
► H5	373	305	315	12

INSTALLATION DESCRIPTION

Skilled and qualified personnel must perform installation, start up and maintenance. A nozzle is fitted to the burner and used for fire tests in the factory. If necessary, change the nozzle on the basis of the maximum output of the application. All operations must be carried in accordance with the technical handbook supplied with the burner.



BURNER SETTING

- ▶ Air damper and head adjustment area are easily accessible and the operation is simple thanks to a graduated scale and following the manual instruction.



- ▶ The burner is supplied with a hand control to choose the suitable output, and electrical switch including a start button to operate the burner.



MAINTENANCE

- ▶ The maintenance position is easily carried out by hinge that joins the body of burner to the flange.





BURNER ACCESSORIES



Light oil filter

Light oil filter	
Burner	Kit code
H5	3000926

Protection kit

Protection kit	
Burner	Kit code
H5	3000925

End cone without turbolator ring

End cone without turbolator ring	
Burner	Kit code
H5	3006040

SPECIFICATION



A special index guides your choice of boiler according to this model.
Below there is a clear and detailed specification description of the product.

► DESIGNATION OF SERIES



► AVAILABLE BURNER MODELS

H5 21 ÷ 65 kW

▶ PRODUCT SPECIFICATION

Burner:

Completely automatic monobloc light oil burner, with one stage operation fitted with:

- Fan with forward curve blades
- Metallic cover
- Air damper with manual adjustment
- Single phase electric motor 230 V, 50 Hz
- Combustion head fitted with:
 - stainless steel head cone, resistant to high temperatures
 - ignition electrodes
 - flame stability disk
- Geared pump for fuel supply, setting manually, fitted with:
 - filter
 - manual pressure regulator
 - attachments for fitting a pressure gauge and vacuum meter
 - internal by-pass for preparing for single-pipe installations
- Fuel feed solenoid valve incorporated in the pump
- Photoresistance for flame detection
- Electronic flame control equipment
- Light oil nozzle
- IP 40 protection level.

Approval:

- EN 267 standard.

Conforming to:

- Directive 89/336/EEC (electromagnetic compatibility)
- Directive 73/23/EEC (low voltage)
- Directive 98/37/EEC - 89/392/EEC (machinery)
- Directive 92/42/EEC (efficiency).

Standard equipment:

- Two flexible pipes for connection to the light oil supply line
- Two nipples for connection to the pump
- Flange, screws and nuts for fixing
- Thermal screen
- Hinge
- Grommet
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

Available accessories to be ordered separately:

- Light oil filter
- Protection kit
- End cone without turbolator ring.





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