RIELLO BURNERS

CE

ONE STAGE LIGHT OIL BURNERS

RIELLO 40 H SERIES | **H5** | 21 ÷ 65 kW

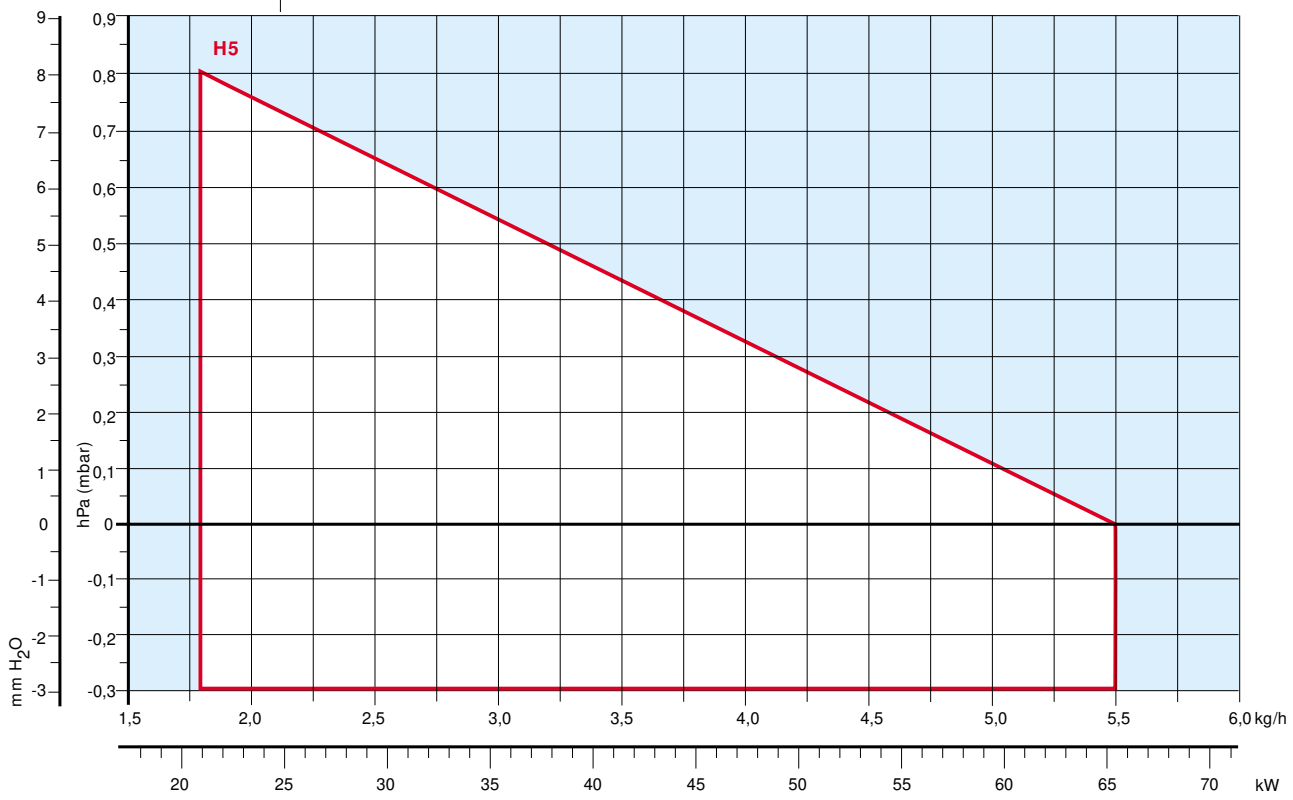
The Riello 40 H series of one stage light oil burners, has been designed to be used friendly and to respond to any request for hotel kitchen applications. The Riello 40 H series is available in a single model with an output ranging from 21 to 65 kW.
The high quality level guarantees safe working.
In 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		--
	Servo-motor run time	s	--
	Heat output	kW	21 - 65
	Heat output	Mcal/h	18,4 - 56
	Heat output	kg/h	1,8 - 5,5
	Working temperature	°C min./max.	0/40
Fuel / air data	Net calorific value	kWh/kg	11,8
Fuel / air data	Net calorific value	kcal/kg	10200
Fuel / air data	Viscosity	mm^2/s (cSt)	4 - 6 (at 20°C)
Fuel / air data	Pump type		R.B.L.
Fuel / air data	Pump delivery	kg/h	30 (at 12 bar)
Fuel / air data	Atomised pressure	bar	7 - 15
Fuel / air data	Fuel temperature	max. °C	50
Fuel / air data	Fuel pre-heater		NO
Fuel / air data	Fan	type	centrifugal with forward curve blades
Fuel / air data	Air temperature	max. °C	40
Electrical data	Electrical supply	Ph/Hz/V	1/50/230±10%
Electrical data	Auxiliary electrical supply	Ph/Hz/V	--
Electrical data	Control box	type	R.B.L. 530 SE
Electrical data	Total electrical power	kW	0,13
Electrical data	Auxiliary electrical power	kW	--
Electrical data	Heaters electrical power	kW	--
Electrical data	Protection level	IP	40
Electrical data	Pump motor electrical power	kW	--
Electrical data	Rated pump motor current	A	--
Electrical data	Pump motor start up current	A	--
Electrical data	Pump motor protection level	IP	--
Electrical data	Fan motor electrical power	kW	0,1
Electrical data	Rated fan motor current	A	0,75
Electrical data	Fan motor start up current	A	3
Electrical data	Fan motor protection level	IP	20
Electrical data	Ignition transformer	type	Incorporated in the control box
Electrical data	Ignition transformer	V1-V2	8 kV
Electrical data	Ignition transformer	I1-I2	22 mA
Electrical data	Operation		intermittent (at least one stop every 24h)
Emissions	Sound pressure	dB(A)	59
Emissions	Sound power	W	--
Emissions	CO emission	mg/kWh	<60
Emissions	Grade of smoke indicator	N° Bach.	<1
Emissions	C_xH_y Emissions	mg/kWh	<10 (after the first 20s)
Emissions	NOx Emissions	mg/kWh	<250
Approval	Directive		89/336/EEC, 73/23/EEC, 98/37/EEC, 92/42/EEC
Approval	Conforming to		EN 267
Approval	Certification		--

Reference conditions:
Temperature: 20 °C
Pressure: 1013.5 mbar
Altitude: 100 m a.s.l.
Noise measured at a distance of 1 meter.

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.

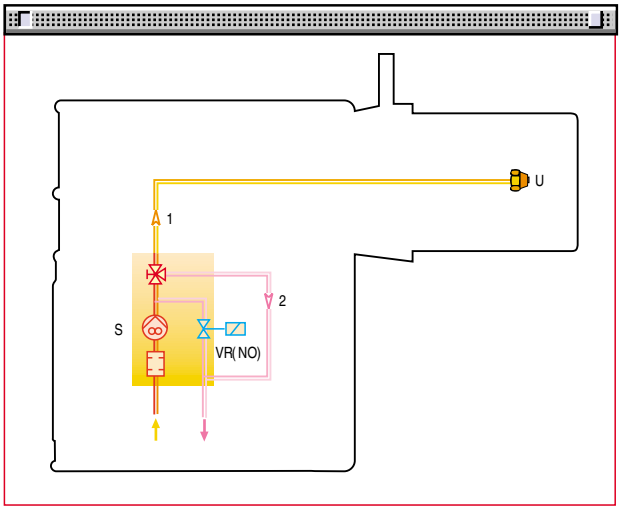
FUEL SUPPLY

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

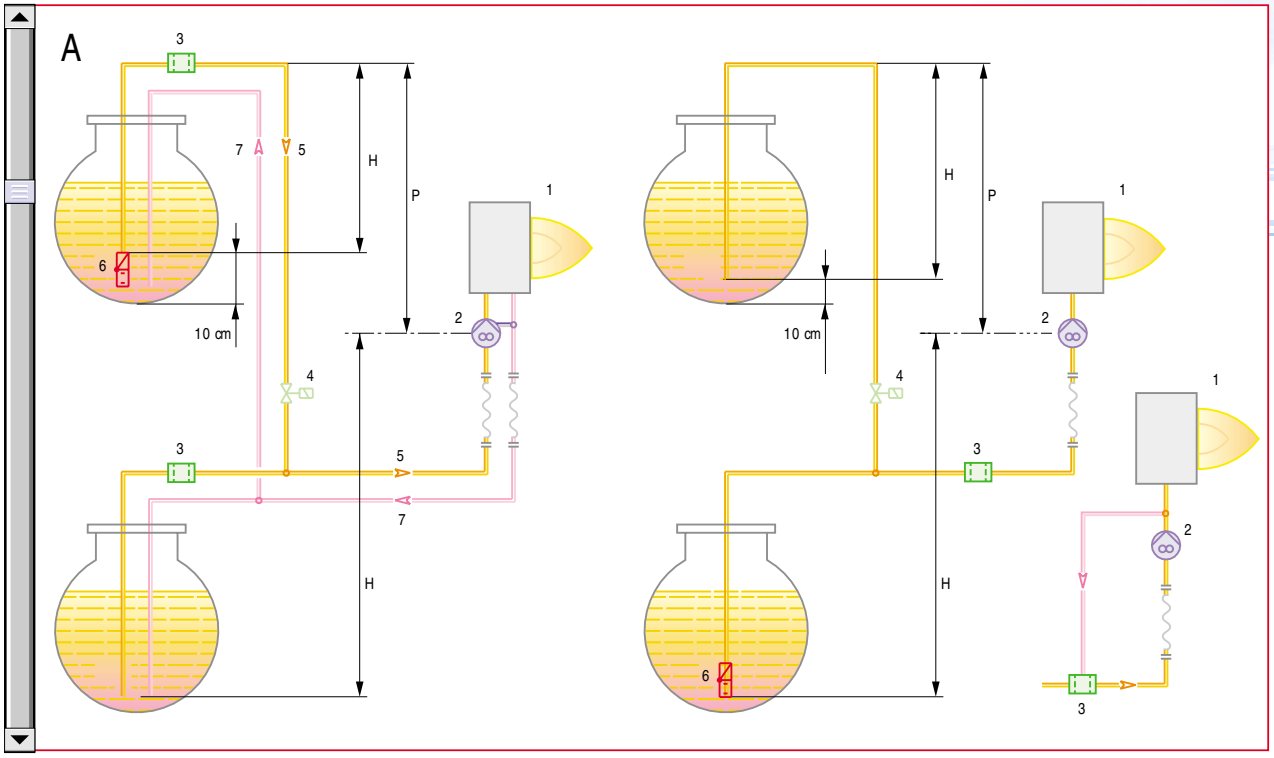
Fuel feed to the burner can be from the right or the left side on the model.

SELECTING THE FUEL SUPPLY LINES

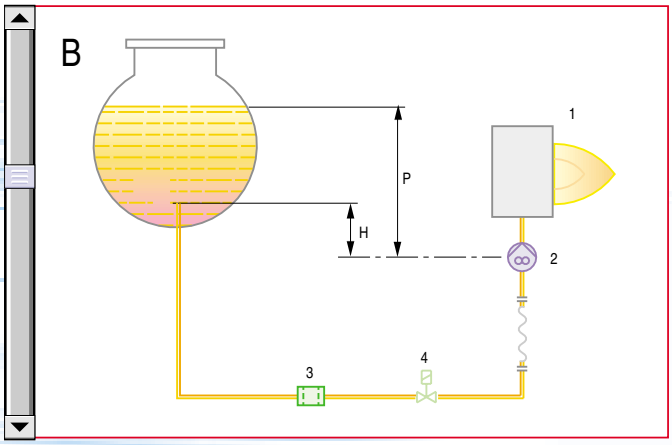
The fuel feed must be completed with the safety devices required by the local regulations in force.

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]				
	▼ Type A system		▼ Type B system	
Pipe size	Ø8mm	Ø10mm	Ø8mm	Ø10mm
H (m)	Lmax (m)	Lmax (m)	Lmax (m)	Lmax (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

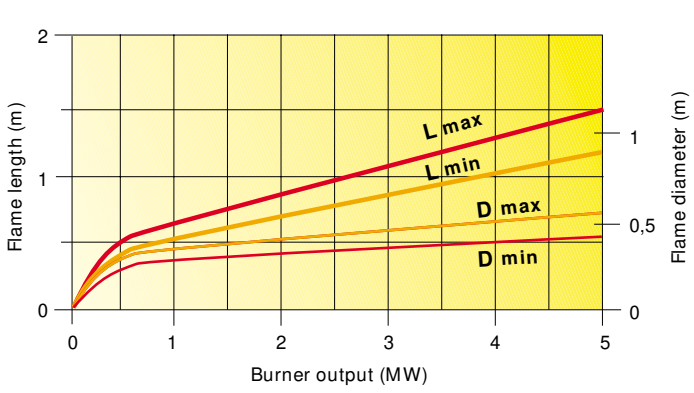
The burner is fitted with adjustable combustion head.

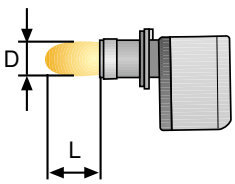
Simple adjustment to the combustion head allows adapting internal geometry of the head to the maximum rated output of the burner.

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)

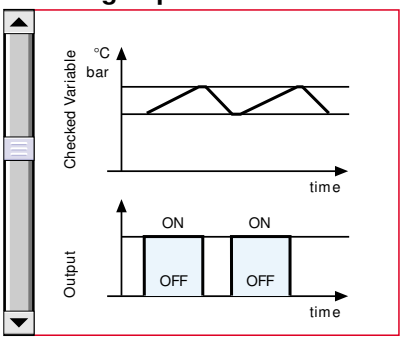
ADJUSTMENT

BURNER OPERATION MODE

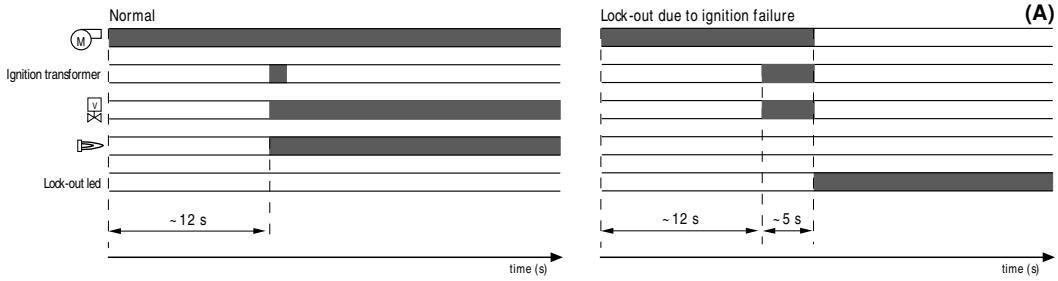
The H5 model is one stage operation. The output firing can be adjusted by hand.

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.

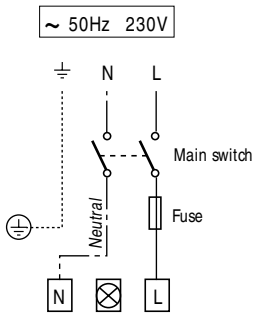
WIRING DIAGRAMS

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



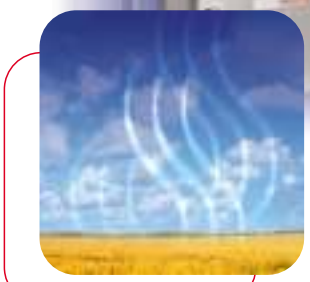
Terminal block of control box

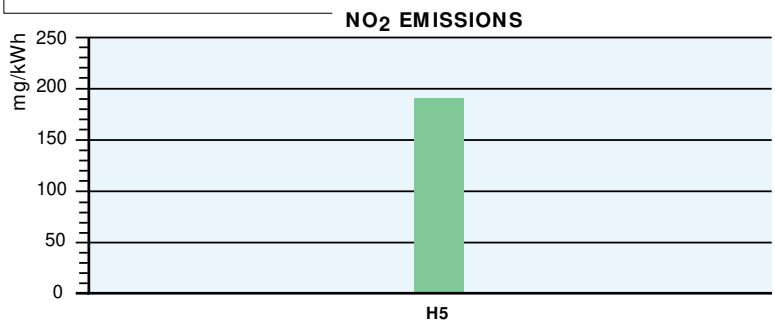
The following table shows the supply lead sections and types of fuse to be used.

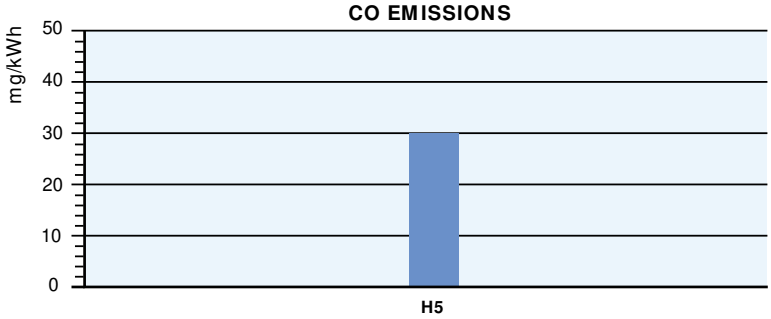
Model	▼ H5
	230V
F A	6
L mm²	1

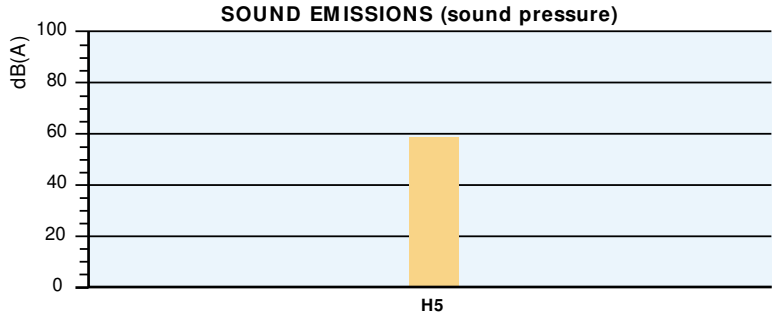
F = Fuse L = Lead section

EMISSIONS









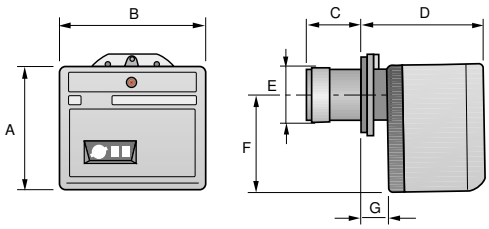
The emission data have been measured in the various models at maximum output, in conformity with EN 267 standard.

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

OVERALL DIMENSIONS (mm)

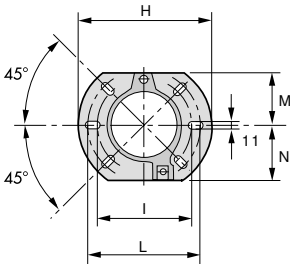
The model is distinguished by its reduced size, in relation to its output.

BURNER



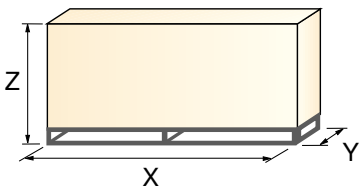
Model	A	B	C	D	E	F	G
H5	233	272	107	238	89	180	37

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

Lineagrafica

RIELLO S.p.A. - Via degli Alpini, 1 - 37045 LEGNAGO (VR) Italy
Tel. ++39.0442630111 - Fax ++39.044221980
Internet: http://www.riellobumers.com - E-mail: rburners@riellobumers.com