RIELLO BURNERS

CE

ONE STAGE LIGHT OIL BURNERS

RIELLO 40 F SERIES

F5	30	÷	60	kW
F10	54	÷	107	kW
F20	95	÷	202	kW

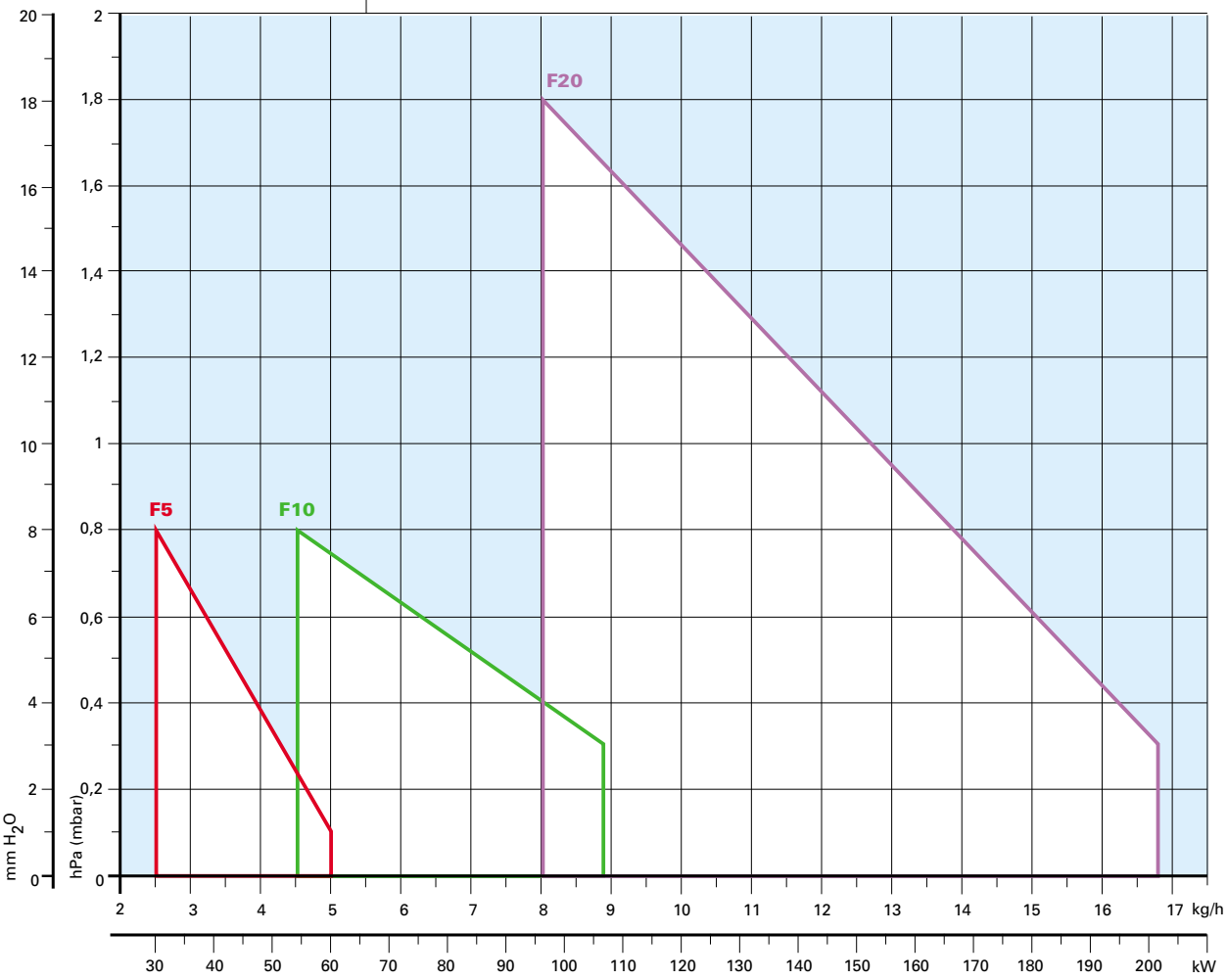
The Riello 40 F series of one stage light oil burners, is a complete range of products developed to respond to any request for light industrial applications. The Riello 40 F series is available in three different models, whit an output ranging from 30 to 202 kW, divided in three different structures.
All the models use the same components designed by Riello for the Riello 40 F series. The high quality level guarantees safe working.
In developing these burners, special attention was paid to reducing noise, to the ease of installation and adjustment, to obtaining the smallest size possible to fit into any sort of boiler available on the market.
All the models are approved by the EN 267 European Standard and conform to European Directives for EMC, Low Voltage, Machinery and Boiler Efficiency.
All the Riello 40 F burners are fired before leaving the factory.

TECHNICAL DATA

	Model		F5	F10	F20
	Setting		One stage		
	Servo-motor type		--		
	Servo-motor run time	s	--		
	Heat output	kW	30 - 60	54 - 107	95 - 202
		Mcal/h	25,8 - 51,6	46,4 - 92	81,7 - 173,7
		kg/h	2,5 - 5	4,5 - 9	8 - 17
	Working temperature	°C min./max.	0/40		
Fuel / air data	Net calorific value	kWh/kg	11,8		
		kcal/kg	10.200		
	Viscosity at 20°C	mm^2/s (cSt)	4 ÷ 6		
	Pump type		R.B.L.		
	Pump output	kg/h at 12 bar	30		
	Atomised pressure	bar	7 - 15		
	Fuel temperature	max. °C	50		
	Fuel pre-heater		NO	NO	NO
	Fan	type	forward tilted blades		
	Air temperature	max. °C	40		
Electrical data	Electrical supply	Ph/Hz/V	1/50/230 ±10%		
	Aux. electrical supply	Ph/Hz/V	--		
	Control box	type		530 SE	
	Total electrical power	kW	0,13	0,17	0,33
	Total rated current	A	0,75	0,85	1,5
	Protection level	IP	40		
	Motor electrical power	kW	0,1	0,14	0,30
	Rated motor current	A	0,75	0,85	1,5
	Motor start current	A	3	3,5	6
	Motor protection level	IP	20		
	Ignition transformer		incorporated in the control box		
	Operation		intermittent (at least one halt every 24 h)		
Emissions	Sound pressure	dB(A)	60	66	73
	CO Emissions	mg/kWh	<60		
	Grade of smoke indicator	N° Bach.	<1		
	C_xH_y Emissions	mg/kWh	<10 AFTER THE FIRST 20s		
	NOx Emissions	mg/kWh	<250		
Approval	Directives		89/336/EEC, 73/23/EEC, 98/37/EEC, 92/42/EEC		
	Conforming to		EN 267		
	Certifications		--	--	--

Reference conditions:
Temperature: 20 °C
Pressure: 1013.5 mbar
Altitude: 100 m a.s.l.
Noise was measured in the boiler room behind the burner at a distance of 1 meter.

FIRING RATES

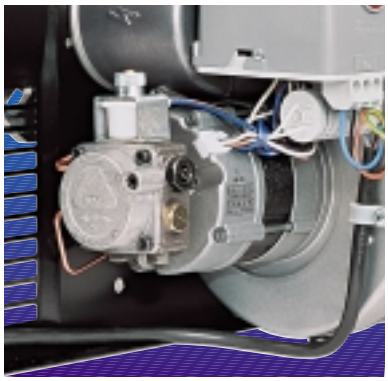


Useful working field for choosing the burner

Test conditions conforming to EN 267 standards:
Temperature: 20°C
Pressure: 1013.5 mbar
Altitude: 100 m a.s.l.

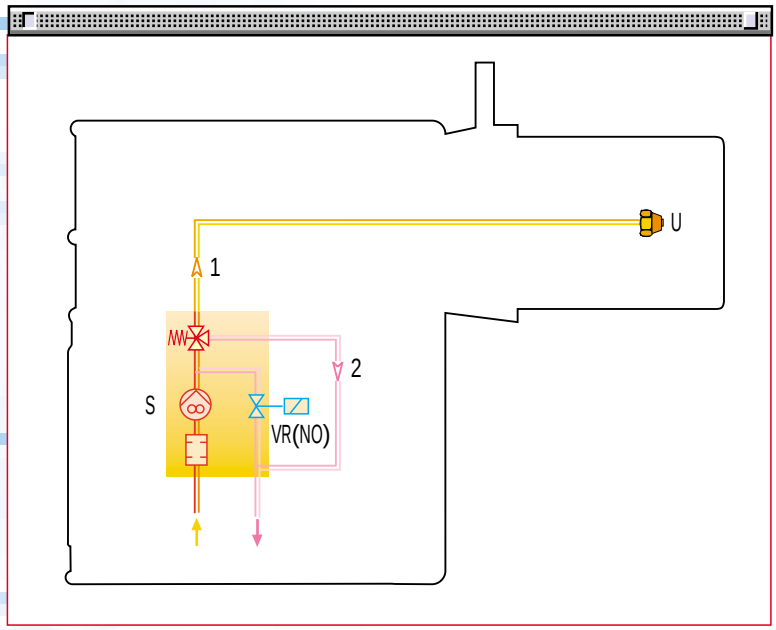
HYDRAULIC CIRCUITS

All the burners have a R.B.L. geared pump with safety valve on the return circuit.



Fuel pump

F5 - F10 - F20



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

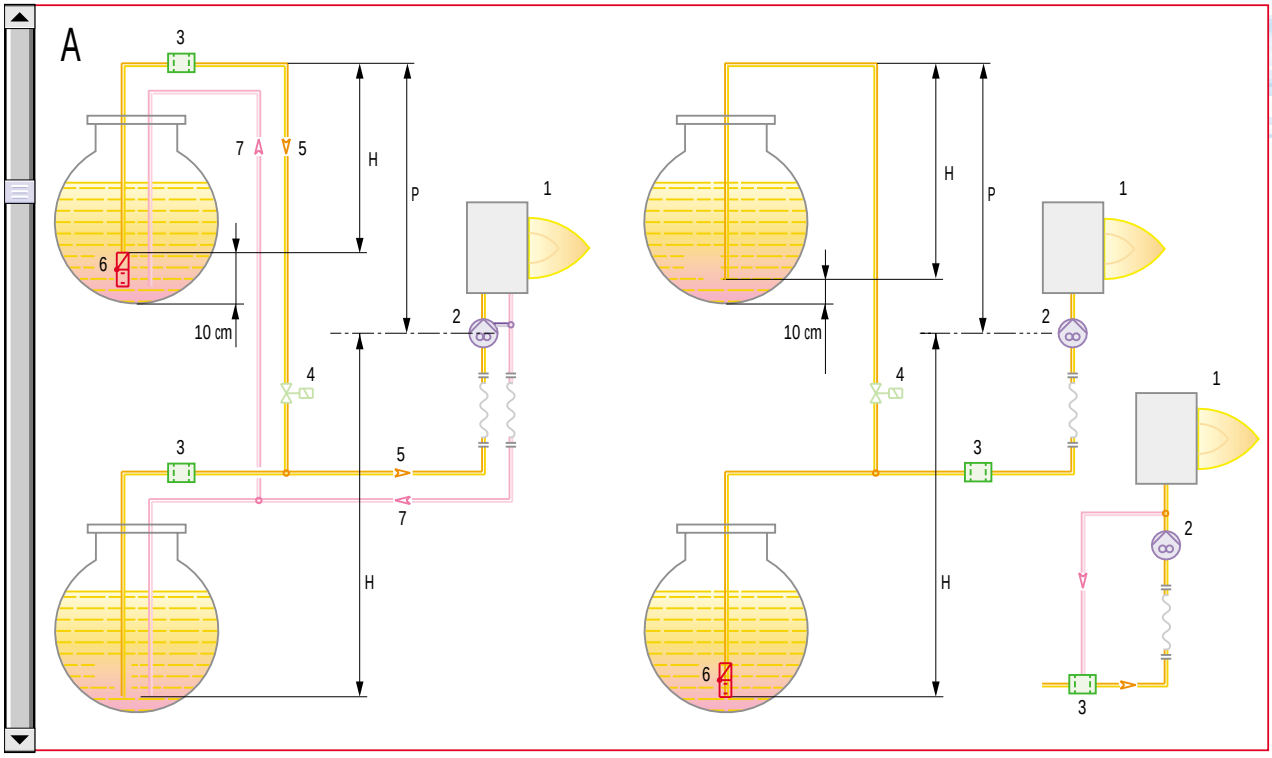
Fuel feed to the burner can be from the right or the left side on all models.

DIMENSIONING OF THE FUEL SUPPLY LINES

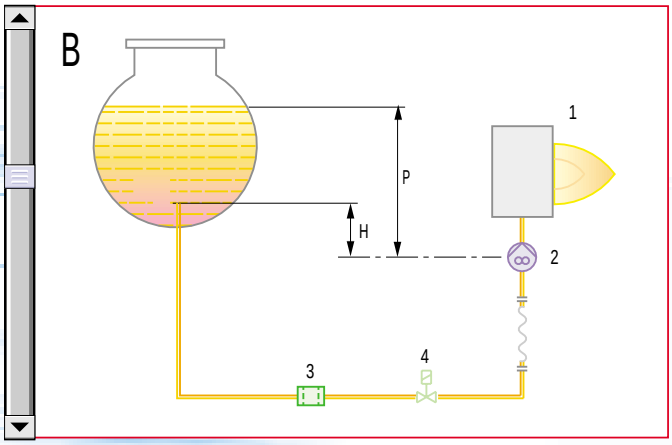
The fuel feed must be completed with the safety devices required by the local regulations in force.

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 circuits always ensure low noise levels with high performance of pressure and air delivery, inspite of their compact size.

Air suction

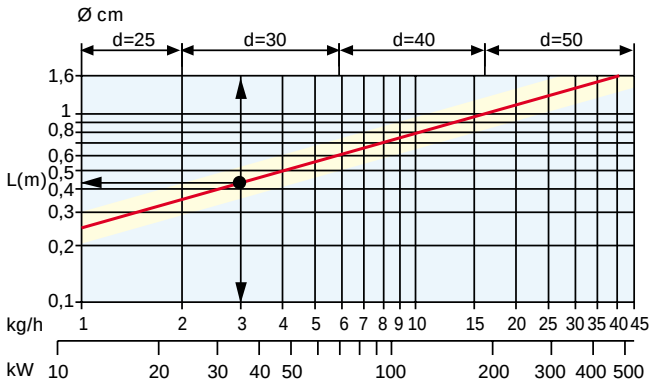
COMBUSTION HEAD

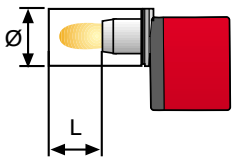
All the models have adjustable combustion heads.

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

Combustion head

Combustion chamber dimensions used in the test laboratory





$L\ (m) = 0{,}25 \times \sqrt{kg/h}$

With simple adjustments, the burner can be adapted to combustion chambers that are slightly different from those used in the tests.

Example:
burnt thermal delivery = 3 kg/h;
L (m) = 0,25 x $\sqrt{3}$ = 0,43 (m);
Ø = 30 (cm)

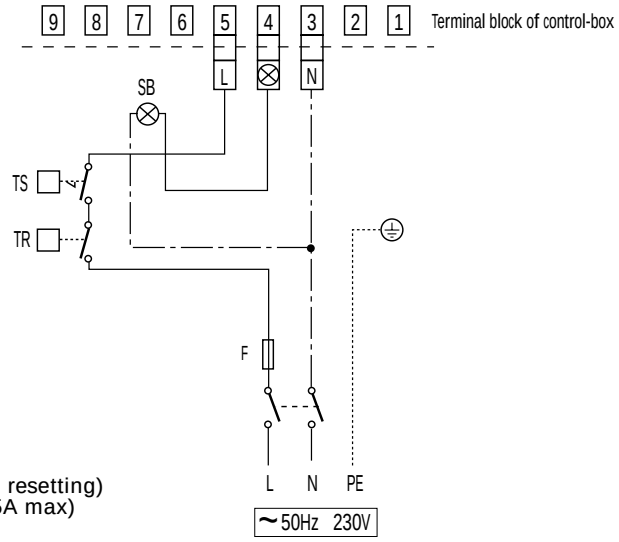
ELECTRICAL CONNECTIONS
to be made by the installer

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

F5 - F10 - F20



TR - Regulating thermostat
TS - Safety thermostat (with manual resetting)
SB - Remote lock-out lamp (230V 0,5A max)
F - Fuse

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

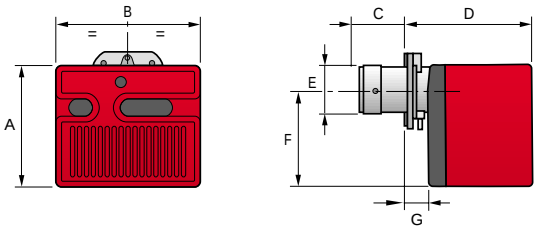
Model	▼F5	▼F10	▼F20
	230V	230V	230V
F A	6	6	T6
L mm^2	1	1	1

F = Fuse L = Lead section

OVERALL DIMENSIONS (mm)

These models are distinguished by their reduced size, in relation to their outputs, which means they can be fitted to any boiler on the market.

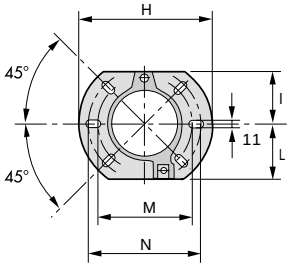
BURNERS



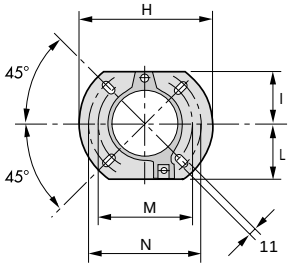
Model	A	B	C	D	E	F	G
F5	233	272	76	240	89	180	41
F10	262	305	108	265	105	204	44
F20	298	350	118	299	125	230	45

BURNER-BOILER MOUNTING FLANGE

F5 - F10

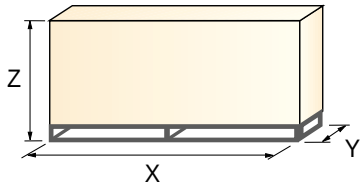


F20



Model	H	I	L	M	N
F5	180	72	75	130	150
F10	189	83	83	140	170
F20	213	99	99	160	190

PACKAGING



Model	X	Y	Z	kg
F5	373	305	315	11
F10	413	338	330	12
F20	473	383	367	15