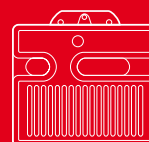




RIELLO 40 GI Series

Two Stage Light Oil Burners

G10I	44/54	÷	120	kW
G20I	71/95	÷	240	kW
G20D	71/95	÷	240	kW



The Riello 40 GI series of two stage light oil burners, is a complete range of products developed to respond to any request for residential heating. The Riello 40 GI series is available in three different models, with an output ranging from 54 to 240 kW, divided in two different structures.

All the models use the same components designed by Riello for the Riello 40 GI 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 GI burners are fired before leaving the factory.

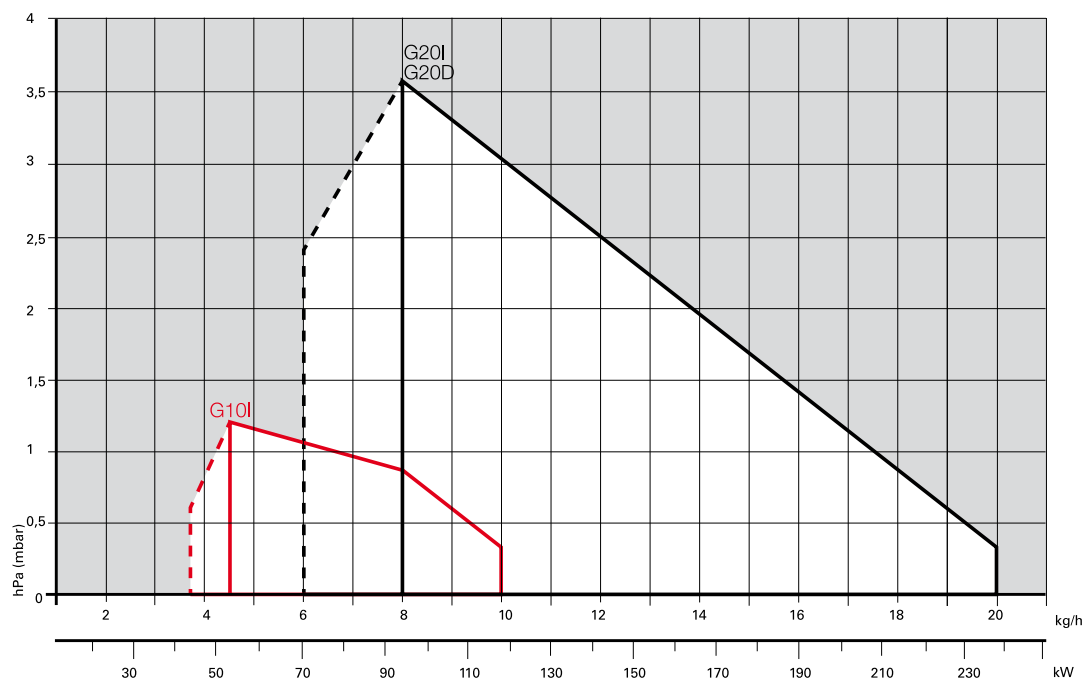
Technical Data

MODEL			R40 G10I	R40 G20I	R40 G20D
Burner operation mode			Two stage		
Modulation ratio at max. output			--		
Servomotor	type		--		
	run time s		--		
Heat output	kW		44/54 ÷ 120	71/95 ÷ 240	71/95 ÷ 240
	Mcal/h		37,8/46/4 ÷ 103,2	61/81,7 ÷ 206,4	61/81,7 ÷ 206,4
	Kg/h		3,7/4,5 ÷ 10	6/8 ÷ 20	6/8 ÷ 20
Working temperature		°C min./max.	0/40		
FUEL/AIR DATA					
Light oil	net calorific value	kWh/kg	11.8		
		kcal/kg	10200		
	viscosity at 20°C	mm²/s (cSt)	4 - 6 (at 20°C)		
Pump	type		R.B.L		
	delivery	Kg/h	30 (at 12 bar)		
Atomised pressure		bar	8 - 15		
Fuel temperature		max. °C	50		
Fuel pre-heater			NO		
Fan		type	forward tilted blades		
Air temperature		max. °C	40		
ELECTRICAL DATA					
Electrical supply		Ph/Hz/V	1/50/230 ± 10%		
Auxiliary electrical supply		Ph/Hz/V	--		
Control box		type	RBL 530 SE		
Total electrical power		kW	0,17	0,33	0,33
Auxiliary electrical power		kW	--		
Protection level		IP	X0D (IP 40)		
Fan motor	electrical power	kW	0,14	0,30	0,30
	rated current	A	0,85	1,5	1,5
	start up current	A	3,5	6	6
	protection level	IP	20		
Pump motor	electrical power	kW	--		
	rated current	A	--		
	start up current	A	--		
	protection level	IP	--		
Ignition transformer	type		Incorporated in the control box		
	V1 - V2		(==) - 8 Kv		
	I1 - I2		(==) - 30 mA		
Operation			Intermittent (at least one stop every 24h)		
EMISSIONS					
Noise levels	Sound pressure	dB (A)	63	66,8	66,8
	Sound power	dB (A)	74	77,8	77,8
Light oil	CO emission	mg/kWh	< 60		
	grade of smoke indicator	Nº Bacharach	< 1		
	CxHy emission	mg/kWh	< 10 (after the first 20s)		
	NOx emission	mg/kWh	< 250		
APPROVAL					
Directive			2006/42/EC - 92/42/EC - 2014/30/UE - 2014/35/UE		
Conforming to			EN 267		
Certification			CE-00360258/99	CE-00360259/99	

Reference conditions:

Temperature: 20°C - Pressure: 1013,5 mbar - Altitude: 0 m a.s.l. - Noise measured at a distance of 1 meter.
 Sound pressure measured in manufacturer's combustion laboratory, with burner operating on test boiler and at maximum rated output. The sound power is measured with the "Free Field" method, as per EN 15036, and according to an "Accuracy: Category 3" measuring accuracy, as set out in EN ISO 3746.

Firing Rates



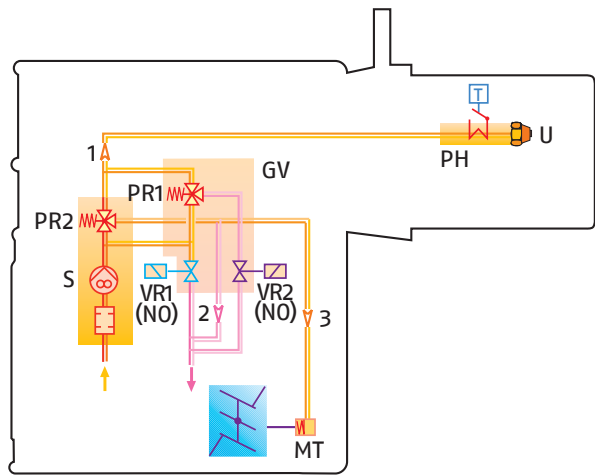
Fuel Supply

HYDRAULIC CIRCUIT

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



Fuel pump



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

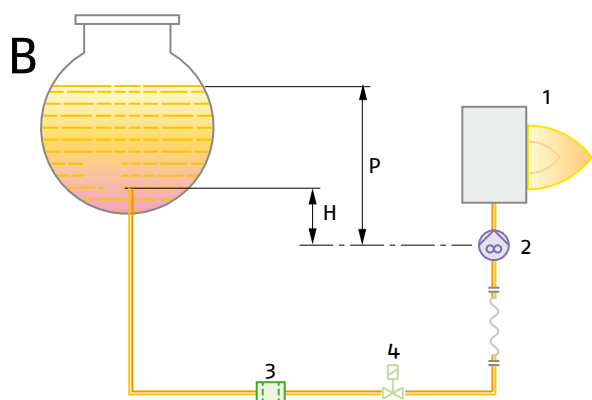
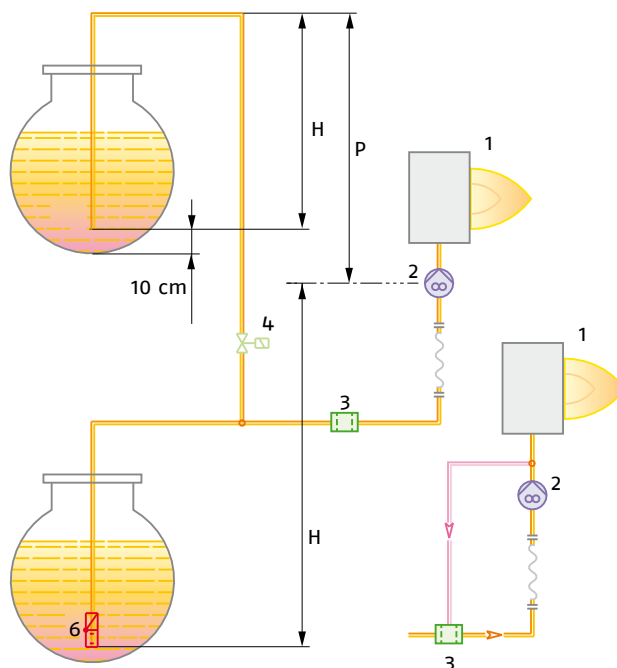
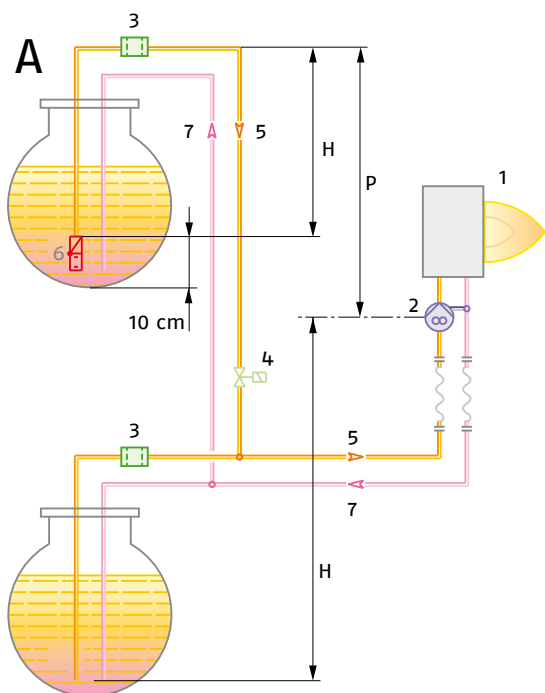
S	Pump with filter and pressure regulator on the delivery pipe
VR1 (NO)	1 st stage oil return valve normally open
VR2 (NO)	2 nd stage oil return valve normally open
1	Oil delivery pipe to the nozzle/s
2	Oil return pipe from the 2 nd stage regulator
3	Oil delivery pipe to the air damper hydraulic jack
MT	Air damper hydraulic jack for the 2 nd stage
PR1	1 st stage oil regulator
PR2	2 nd stage oil regulator
PH	Oil pre-heater with thermostat (where provided)
GV	Valve unit
U	Nozzle

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	Ø 8 mm	Ø 10 mm	Ø 8 mm	Ø 10 mm
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	-	-



H	Pump/Foot valve height difference
Ø	Inside 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

The models allows you to choose the length of the combustion head.

This choice depends on the thickness of the front wall and type of the boiler.

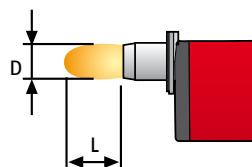
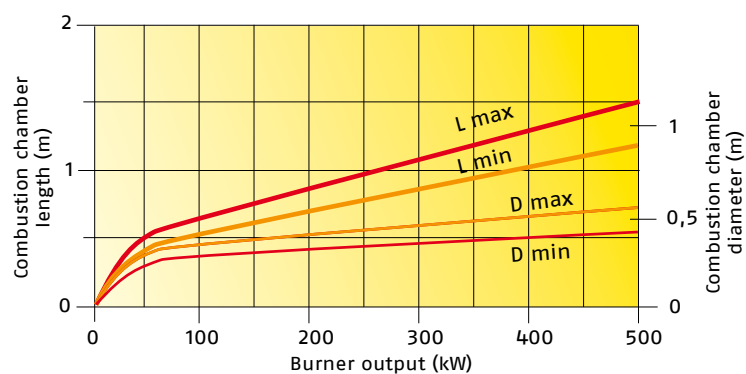
Depending on the type of generator, you should check the correct penetration of the head into the combustion chamber.

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



Combustion head

SUGGESTED COMBUSTION CHAMBER DIMENSIONS



Example:

Burner thermal output = 200 kW;

L Combustion Chamber (m) = 0,9 m (medium value);

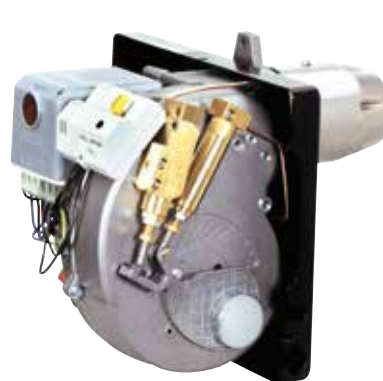
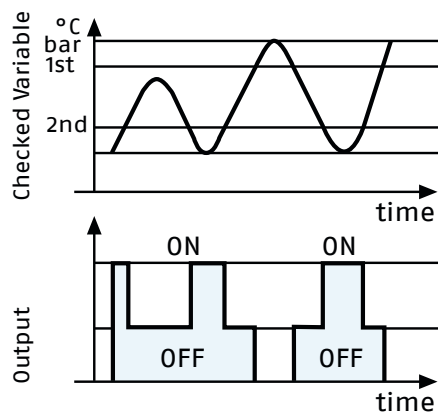
D Combustion Chamber (m) = 0,7 m (medium value)

Operation

BURNER OPERATION MODE

All these models have two stage output operation and they are fitted of a special electrical advice which permits to optimize burner operation by external temperature detection.

"TWO STAGE" OPERATION

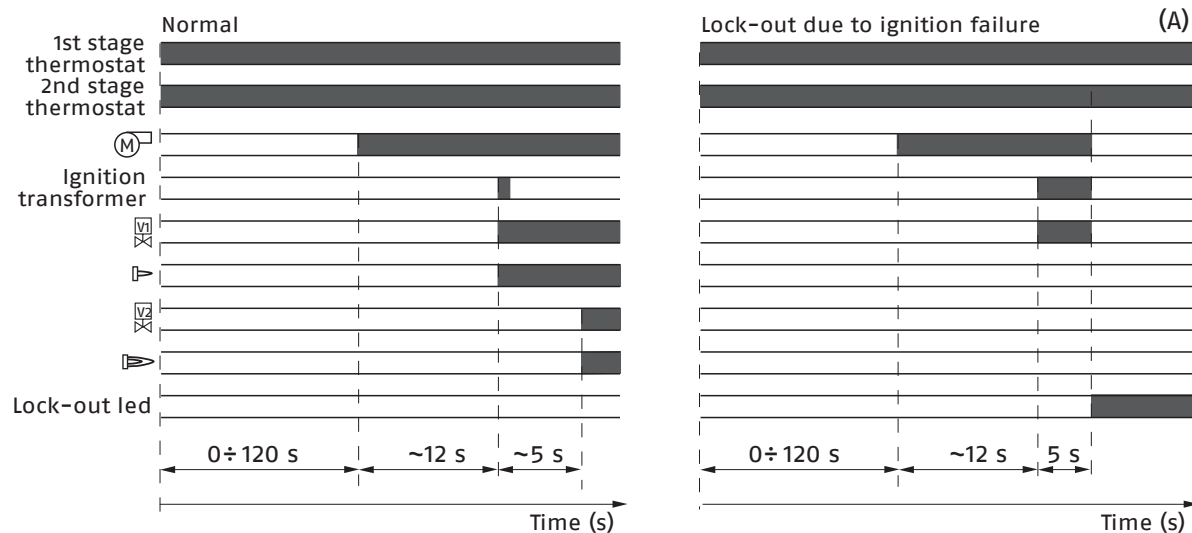


Air damper



Economizer

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 with air damper open
- 12s 1st stage ignition
- 17s-40s 2nd stage ignition

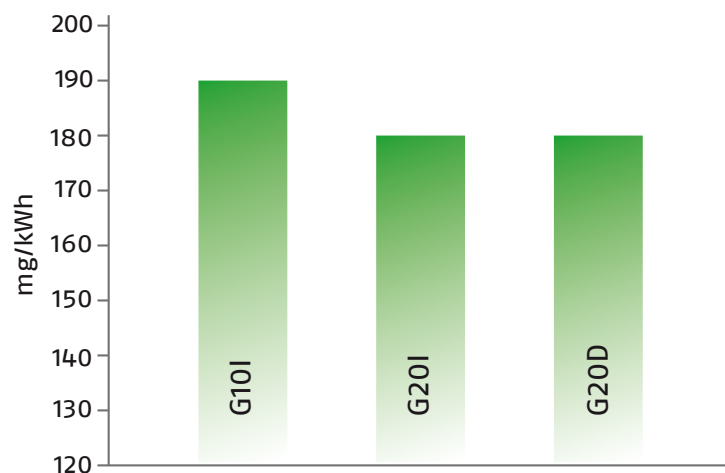
Lock-out due to ignition failure

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

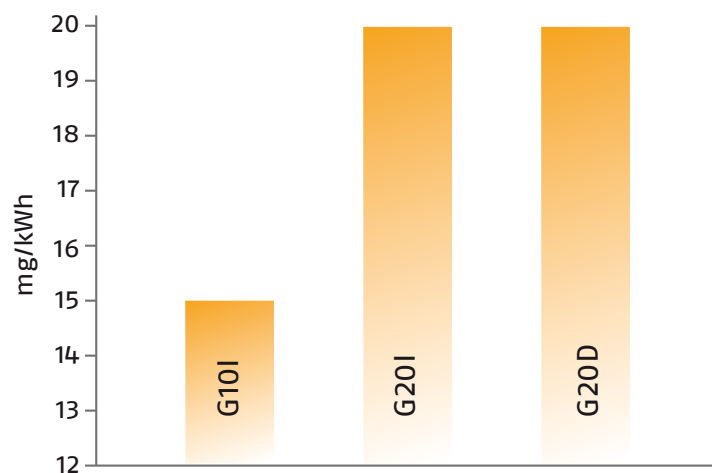
Emissions

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

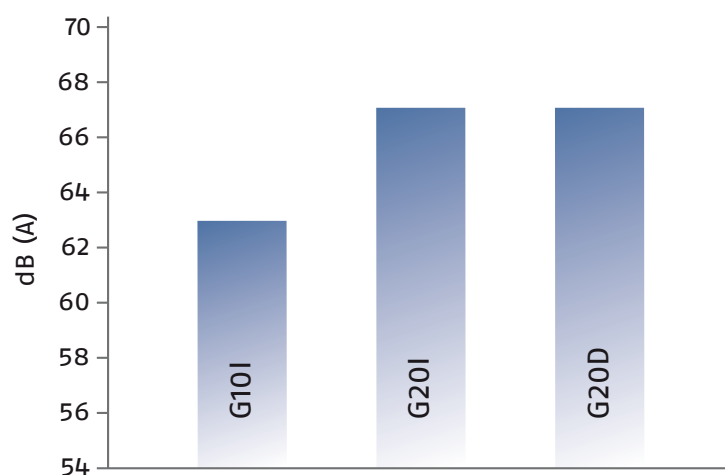
NO₂ EMISSIONS



CO EMISSIONS



NOISE EMISSIONS



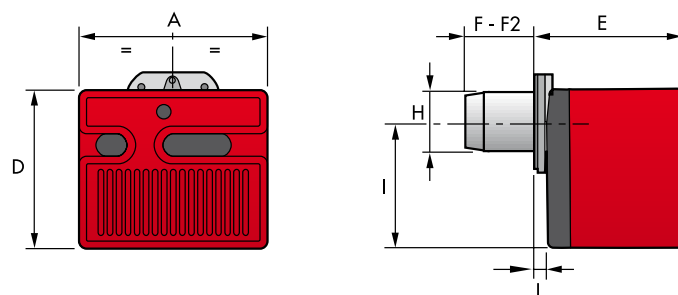
Special attention has been paid to noise reduction. All models are fitted with sound-proofing material inside the cover.



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.

BURNER



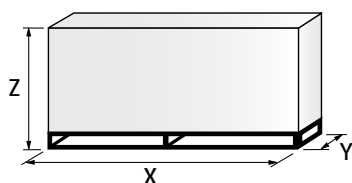
MODEL	A	D	E	F	F2	H	I	L
G10I	305	262	261	108	-	105	204	40
G20I - G20D	350	298	295	118	-	125	230	41

BURNER - BOILER MOUNTING FLANGE



MODEL	C1	C2	F	Q	R	S	T
G10I	140	170	189	45°	11	83	83
G20I - G20D	160	190	213	90°	11	99	99

PACKAGING



MODEL	X	Y	Z	kg
G10I	423	348	340	13
G20I	483	393	377	15
G20D	483	393	377	16,3

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 boiler. 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.

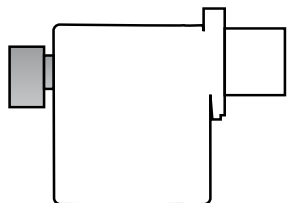


Changing the position of the small plug in the economizer, the burner can remain permanently in the 1st stage, 2nd stage or works in two stage operation.



Burner accessories

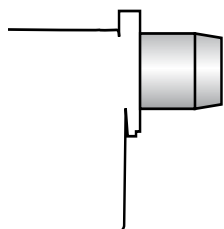
REMOTE CONTROL RELEASE KIT FOR 530-531 CONTROL BOXES



The 530-531 control boxes can be remotely released using an electric command kit. This kit must be installed in conformity with current regulations in force.

BURNER	CODE
G10I - G20I - G20D	3001030

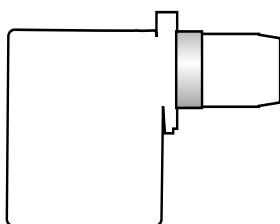
EXTENDED HEAD KIT



Kits of extended heads are available.

BURNER	STANDARD HEAD LENGTH (mm)	EXTENDED HEAD LENGTH (mm)	CODE
G10I	108	168	3000643
G20I	118	178	3000644
G20D	118	260	3000771

SPACER KIT



Using the special accessories, the burner can be pulled back to reduce head penetration into the combustion chamber.

BURNER	SPACER THICKNESS S (mm)	CODE
G10I	25	3000672
G20I - G20D	25	3000673

HOUR COUNTER KIT FOR 530 SE AND 531 SE CONTROL BOXES



To measure the burner working time a hour counter kit is available.

BURNER	CODE
G10I - G20I - G20D	3000904

LIGHT OIL FILTER



For cleaning light oil from dirty particles and impurities filters with the following features are available:

BURNER	FILTERING DEGREE (μm)	CODE
G10I - G20I - G20D	60	3006561

Filter made up of aluminium body and stainless steel filtering cartridge; available singularly.

BURNER	FILTERING DEGREE (μm)	CODE
G10I - G20I - G20D	60	3075011

Filter made up of aluminium cover, plastic tank and nylon filtering cartridge; available in packaging of 50 pieces.

LIGHT OIL FILTER/DEGASSING UNIT



To solve problems of air or water in the oil circuit a special filter/degassing unit is available, made up of aluminium cover, plastic tank, stainless steel filtering cartridge, air release cap and water purge valve. It is available singularly.

BURNER	FILTERING DEGREE (μm)	CODE
G10I - G20I - G20D	100	3000926

7-PIN PLUG KIT

If necessary a 7-pin plug kit is available (in packaging of n. 5 pieces).

BURNER	CODE
G10I - G20I - G20D	300945

Specification

DESIGNATION OF SERIES

A specific index guides your choice of burner from the various models available in the RIELLO 40 G series. Below is a clear and detailed specification description of the product.

G Standard	
Size:	
Optional variations:	R Light oil pre-heater
	I Intelligent
	S Reduced output ignition
	D Two stage output operation
Electrical supply to the system:	
	1/230/50 1/230V/50Hz
	1/220/60 1/220V/60Hz

G	10	D	1/230/50
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BASIC DESIGNATION

EXTENDED DESIGNATION

AVAILABLE BURNER MODELS

BURNER MODELS		HEAT OUTPUT		TOTAL ELECTRICAL POWER	CERTIFICATION	NOTE
		(kW)	(Kg/h)	(kW)		
G10I	1/230/50	44/54 - 120	3,7/4,5 - 10	0,17	CE-00360258/99	
G20I	1/230/50	71/95 - 240	6/8 - 20	0,33	CE-00360259/99	
G20D	1/230/50	71/95 - 240	6/8 - 20	0,33	CE-00360259/99	
G20D	1/220/60	71/95 - 231	6/8 - 19,5	0,40	-	(1)

(1) Philippines version.

Net calorific value: 11,8 kWh/kg - 10200 kcal/kg - Viscosity at 20°C: 4÷6 mm²/s (cSt)
The burners of GI series are in according to EN 267.

STATE OF SUPPLY

Completely automatic monobloc light oil burners, one stage operation, made up of:

- Fan with forward curve blades
- Metallic cover lined with sound-proofing material
- Air damper, completely closed in stand by, with 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, fitted with:
 - filter
 - 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
- Photocell for flame detection
- Electronic flame control equipment
- Light oil nozzle
- IP X0D (IP 40) protection level
- Fuel pre-heater (optional)
- Reduced output ignition mechanism (optional).

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
- 7-pin plug
- 4-pin plug
- External probe (for "I" versions only)
- Maintenance assembly
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

Conforming to:

- 2014/30 UE Directive (electromagnetic compatibility)
- 2014/35 UE Directive (low voltage)
- 2006/42 EC Directive (machine)
- EN 267 (liquid fuel burners)

Available accessories to be ordered separately:

- Remote control release kit for 530-531 control boxes
- Extended head kit
- Spacer kit
- Light oil filter
- Light oil filter/degassing unit
- 7-pin plug kit
- Hour counter kit for 530 SE and 531 SE control boxes

Riello Burners a world of experience in every burner we sell.

06/2016

TS0030UK02



[1]



[2]

[1] BURNERS PRODUCTION PLANT
S. PIETRO, LEGNAGO (VERONA) - ITALIA

[2] HEADQUARTER BURNERS DIVISION
S. PIETRO, LEGNAGO (VERONA) - ITALIA

Across the world, Riello sets the standard in reliable and high efficiency burner technology.

With burner capacity from 5 kW to 48 MW, Riello gas, oil, dual fuel and Low Nox burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.

With headquarter in Legnago, Italy, Riello has been manufacturing premium quality burners for over 90 year. The manufacturing plant is equipped with the most innovative systems of assembling lines and modern manufacturing cells for a quick and flexible response to the market.

Besides, the Riello Combustion Research Centre, located in Angiari, Italy, represents one of the most modern facility in Europe and one of the most advanced in the world for the development of the combustion technology.

Today, the company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries to meet its customers' needs. Riello has 13 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.

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