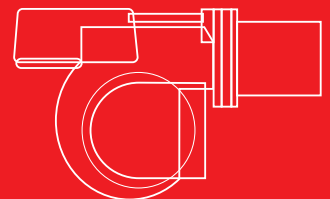
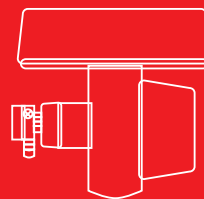


PRESS GV Series

One Stage Light Oil Burners

PRESS G24	140 ÷	237 kW
PRESS GV	178 ÷	356 kW



The PRESS G series of burners covers a firing range from 140 to 356 kW and they have been designed for use in civil installations of small dimensions or in industrial applications, like incinerators or dryer kilns.

Operation is "One stage"; the burners are fitted with a microprocessor-based burner safety control box which supplies indication of operation and diagnosis of fault cause. The combustion head, that can be set on the basis of required output, allows optimal performance ensuring good combustion and reducing fuel consumption.

The main feature of these burners is their reliability due to a simple and strong construction, which permits operation without particular maintenance intervention.

Simplified maintenance is achieved by the slide bar system, which allows easy access to all of the essential components of the combustion head. All electrical components are easily accessible only by dismounting a protection panel, thus guaranteeing a quick and simple intervention on components.

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, in conformity to Article 1, paragraph 2, point (G) of the EU Regulation No. 813/2013;
- With boilers (heater housings) on a new installation, put on the market after 26th of September 2015;
- With all new boilers (heater housings), where placed on the market before 26th of September 2015.

Technical Data

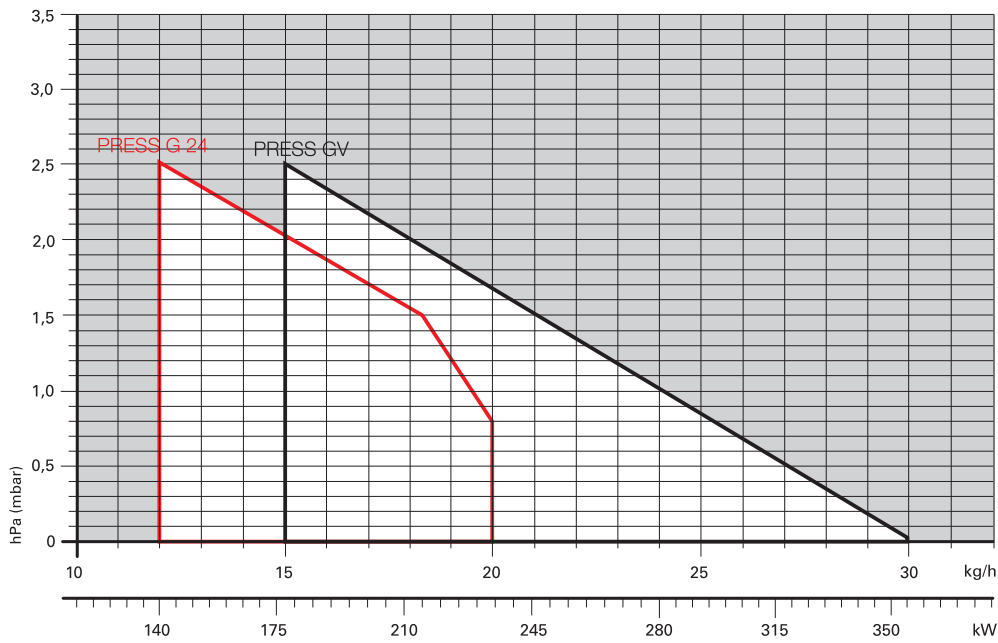
Model		PRESS G24	PRESS GV	
Burner operation mode		One stage		
Modulation ratio at max. output		--		
Servomotor	type	--		
	run time	s		
Heat output		kW	140÷280	178÷356
		Mcal/h	120÷241	153÷306
		kg/h	14÷24	15÷30
Working temperature	°C min./max.	0/40		
FUEL/AIR DATA				
Light oil	Net calorific value	kWh/kg	11,86	
		kcal/kg	10200	
	Viscosity	mm ² /s (cSt)	4 ÷ 6 (at 20°C)	
Pump	type	AS 47	AN 67 A	
	delivery	kg/h	31 (12 bar)	67 (12 bar)
Atomised pressure	bar	12		
Fuel temperature	max. °C	50		
Fuel pre-heater		NO		
Fan	type	Centrifugal with forward curve blades		
Air temperature	max. °C	60		
ELECTRICAL DATA				
Electrical supply	Ph/Hz/V	1/50/230~(±10%)		
Auxiliary electrical supply	Ph/Hz/V	1/50/230~(±10%)		
Control box	type	RMO		
Total electrical power	kW	0,4	0,48	
Auxiliary electrical power	kW	0,15	0,23	
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	0,25		
Rated fan motor current	A	2,1		
Fan motor start up current	A	10		
Fan motor protection level	IP	40		
Ignition transformer	type	220V - 1x8 kV		
	V1 - V2	I1 - I2	1,6A - 30 mA	1,8A - 30 mA
Operation		Intermittent (at least one stop every 24 h)		
EMISSIONS				
Sound pressure	dB(A)	73	75,5	
Sound power	dB(A)	84	86,5	
CO emission	mg/kWh	< 40		
Grade of smoke indicator	NO Bacharach	< 1		
CxHy emission	mg/kWh	<10 (after the first 20 s.)		
NOx emission	mg/kWh	< 200		
APPROVAL				
Directive		2009/142/EC - 2014/30/UE - 2014/35 UE		
Conforming to		EN 267		
Certification		--		

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



Useful working field
for choosing the burner

Test conditions
conforming to EN267
Temperature: 20°C
Pressure: 1013,5 mbar
Altitude: 0 m a.s.l.

Fuel Supply

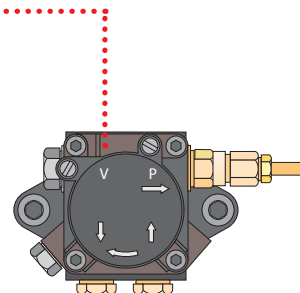
HYDRAULIC CIRCUIT

The burners are fitted with a self-priming pump and one (for PRESS GV) or two (for PRESS G24) delivery valves along the oil line from the pump to the nozzles.

The pump does not need calibrating, as it is set in the factory at 12 bar; however, pressure level can be changed if necessary, by adjusting the regulator fitted on the pump.

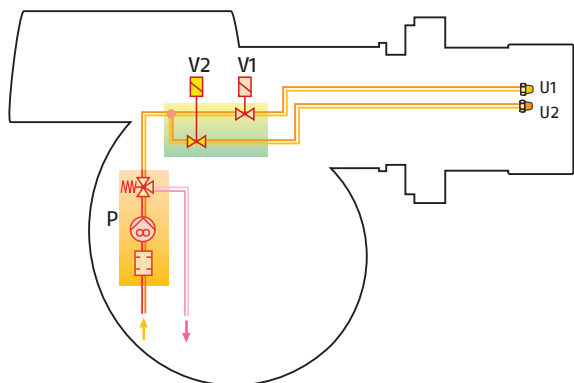
The delivery valves control the passage from starting to operating phase.

For PRESS G24, at the start, after pre-purging phase, the first delivery valve opens and the fuel is sprayed out through the first nozzle, igniting when it comes into contact with the spark; then the second delivery valve opens and the fuel is sprayed out through both nozzles.

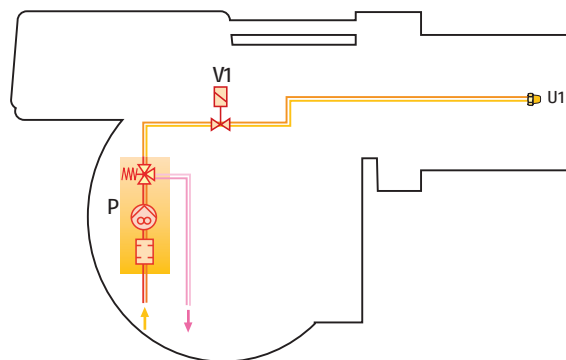


Example of self-priming pump of PRESS GV burners

Hydraulic layout of PRESS G24 burner



Hydraulic layout of PRESS GV burner



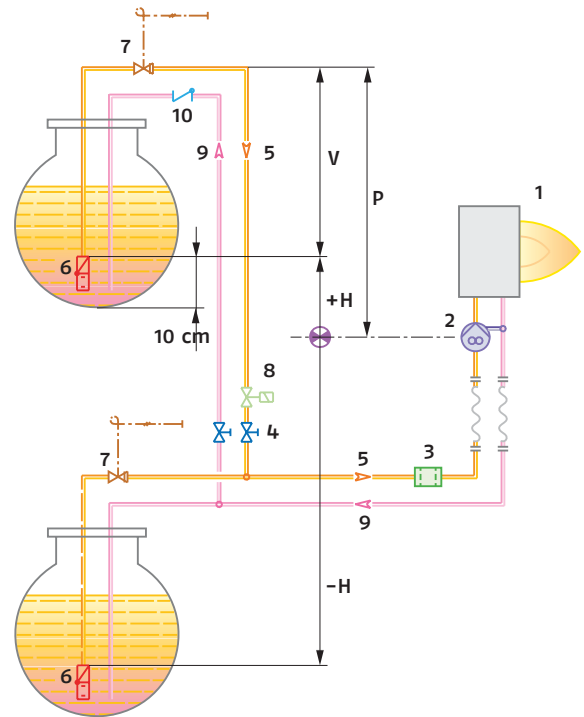
P	Pump with oil filter and pressure regulator
V1	1st delivery valve
V2	2nd delivery valve
U1	1st nozzle
U2	2nd nozzle

Dimensioning Of The Fuel Supply Lines

The fuel feed must be completed with the safety devices required by the local norms.

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

H	Difference in height pump-foot valve
Ø	Internal pipe diameter
P	Max. height 10 m
V	Height 4 m
1	Burner
2	Burner pump
3	Filter
4	Manual shut off valve
5	Suction pipework
6	Bottom valve
7	Remote controlled rapid manual shut off valve (compulsory in Italy)
8	Type approved shut off solenoid valve (compulsory in Italy)
9	Return pipework
10	Check valve

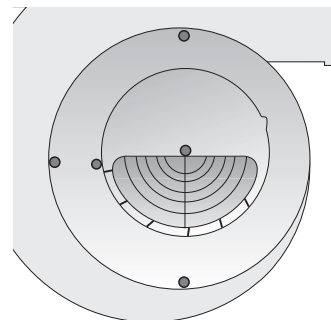


MAXIMUM EQUIVALENT LENGTH FOR THE PIPING L[m]		
Model PRESS G24-GV		
Diameter piping	Ø8mm	Ø10mm
+H, -H (m)	Lmax (m)	Lmax (m)
+4,0	63	130
+3,0	55	115
+2,0	48	100
+ 1,5	44	92
+ 1,0	40	85
+0,5	36	78
0	32	70
-0,5	28	62
-1,0	24	55
-1,5	20	48
-2,0	16	40
-3,0	7	25
-4,0	-	10

With ring distribution oil systems, the feasible drawings and dimensioning are the responsibility of specialised engineering studios, who must check compatibility with the requirements and features of each single installation.

Ventilation

The ventilation circuit produces low noise levels with high performance pressure and air output, in spite of the compact dimensions. The air damper is easy to set; when fitted, it makes no difference to air delivery.



Example of fan air gate valve indexed selector of PRESS G24 burner

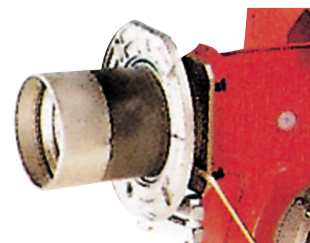
Combustion Head

For the PRESS G24 - GV series of burners a special kit for increasing combustion head length is available.

The choice of using it depends on the thickness of the front panel and the type of boiler.

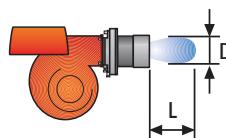
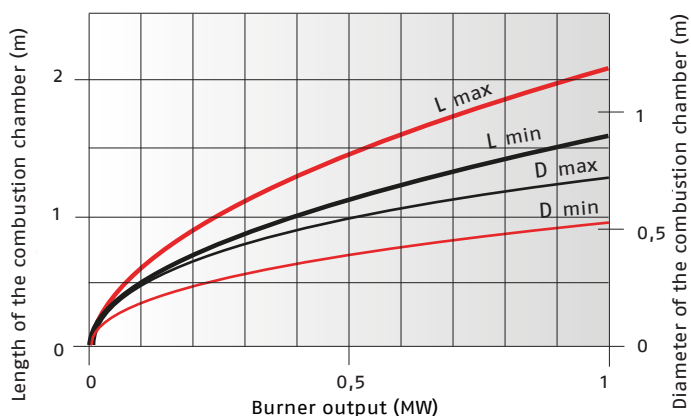
Depending on the type of generator, check that the penetration of the head into the combustion chamber is correct.

The internal position of the combustion head can easily be adjusted to the maximum defined output by adjusting a screw fixed to the flange.



Example of a PRESS GV burner combustion head

SUGGESTED COMBUSTION CHAMBER DIMENSIONS



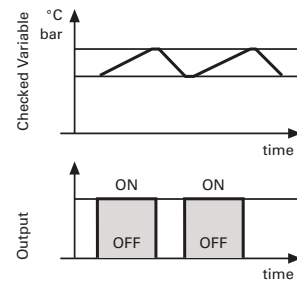
Example:
 Burner thermal output = 500 kW;
 L Combustion Chamber (m) = 1,3 m (medium value);
 D Combustion Chamber (m) = 0,45 m (medium value)

Operation

BURNER OPERATION MODE

The burner of PRESS G24 - GV series is one stage working. On "one stage" operation, the burner adjusts output to the requested level, by varying between on-off phases (see picture A).



"One stage" operation



Picture A

All PRESS GV series burners are fitted with a new microprocessor control panel for the supervision during intermittent operation.

For helping the commissioning and maintenance work, there are two main elements:

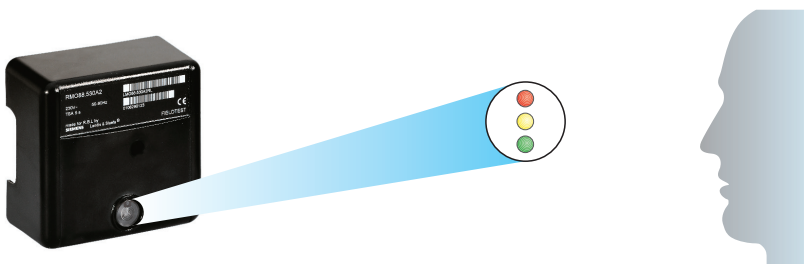
-  The lock-out reset button is the central operating element for resetting the burner control and for activating / deactivating the diagnostic functions.
-  The multi-color LED is the central indication element for visual diagnosis and interface diagnosis.

Both elements are located under the transparent cover of lock-out reset button, as showed below.

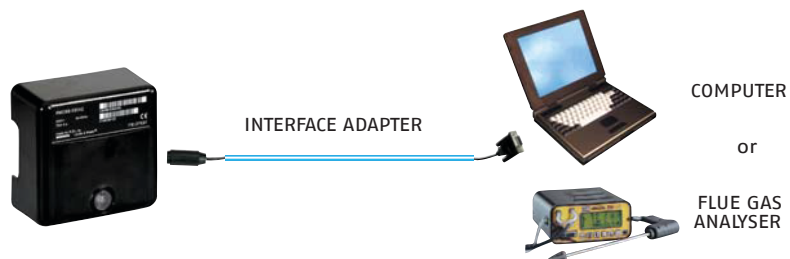


There are two diagnostic choices, for indication of operation and diagnosis of fault cause:

- visual diagnosis :



- interface diagnosis :



by the interface adapter and a PC with dedicated software or by a predisposed flue gas analyzer (see paragraph accessories).

Indication of operation:

In normal operation, the various status are indicated in the form of colour codes according to the table below.

The interface diagnosis (with adapter) can be activated by pressing the lock-out button for > 3 seconds.

Color code table	
Operation status	Color code table
Stand-by	○ ○ ○ ○ ○ ○ ○ ○
Pre-purging	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Ignition phase	☀ ○ ☀ ○ ☀ ○ ☀ ○
Flame OK	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Poor flame	☀ ○ ☀ ○ ☀ ○ ☀ ○
Undervoltage, built-in fuse	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Fault, alarm	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀
Extraneous light	☀ ☀ ☀ ☀ ☀ ☀ ☀ ☀

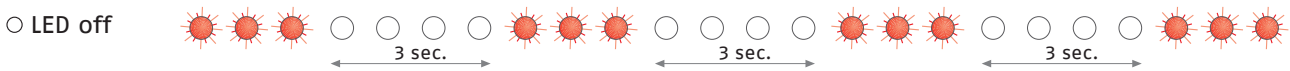
○ LED off

Diagnosis of fault causes:

After lock-out has occurred, the red signal lamp is steady on. In this status, the visual fault diagnosis according to the error code table can be activated by pressing the lock-out reset button for > 3 seconds. The interface diagnosis (with adapter) can be activated by pressing again the lock-out button for > 3 seconds.

The flashes of red LED are a signal with this sequence :

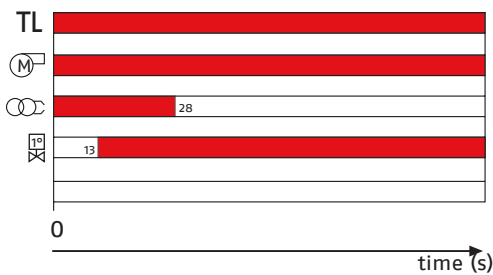
(e.g. signal with n° 3 flashes - faulty air pressure monitor)



Error code table		
Possible cause of fault		Flash code
No establishment of flame at the end of safety time :	- faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner, no fuel - faulty ignition equipment	2 flashes
Faulty air pressure monitor		3 flashes
Extraneous light or simulation of flame on burner start up		4 flashes
Loss of flame during operation :	- faulty or soiled fuel valves - faulty or soiled flame detector - poor adjustment of burner	7 flashes
Wiring error or internal fault		10 flashes

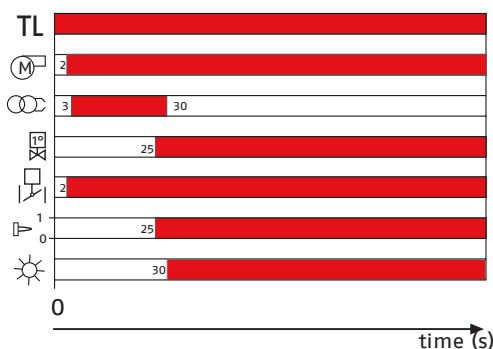
START UP CYCLE

PRESS G24



- 0s The burner begins the firing cycle; The motor starts: pre-purge phase; Ignition electrode sparks.
- 13s Delivery valve opens.
- 28s The spark goes out; Start up cycle is concluded.

PRESS GV

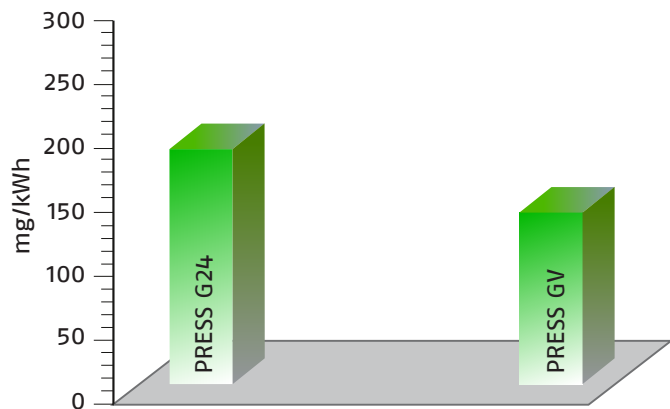


- 0s The burner begins the firing cycle.
- 2s The motor starts: pre-purge phase.
- 3s Ignition electrode sparks.
- 25s Delivery valve opens.
- 30s The spark goes out; start up cycle is concluded.

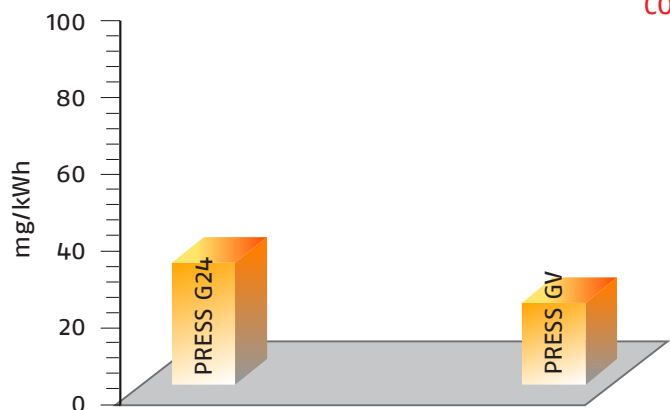
Emissions

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

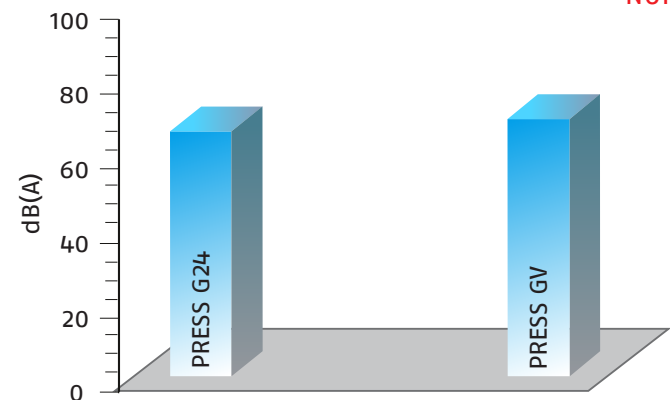
NO2 EMISSIONS



CO EMISSIONS

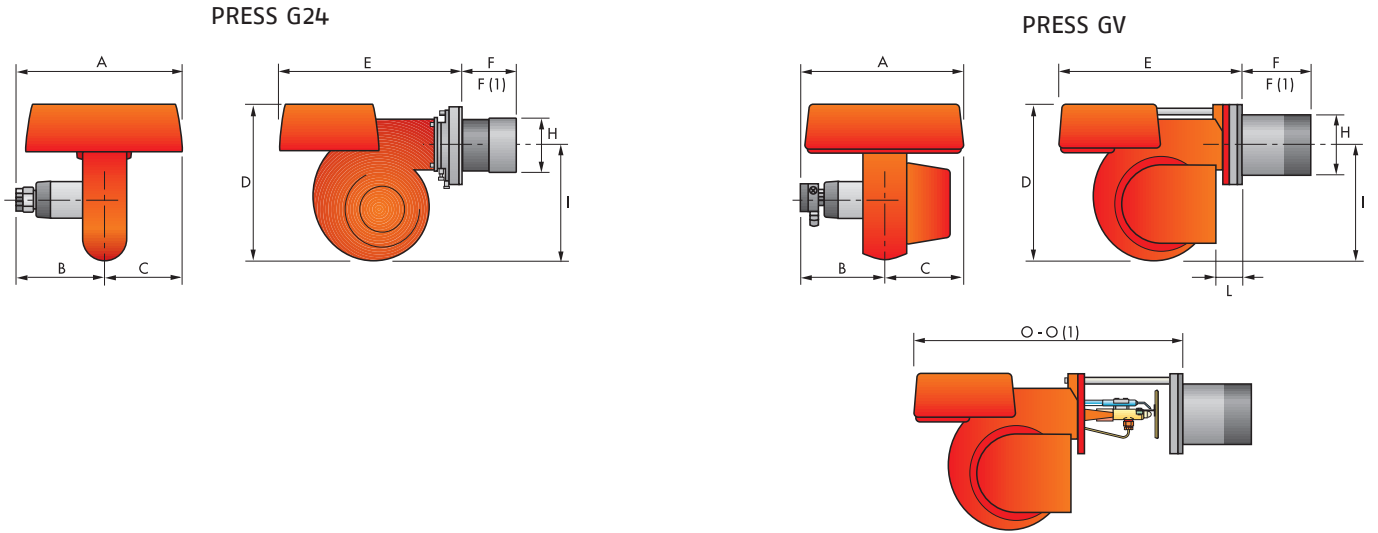


NOISE EMISSIONS



Overall Dimensions (mm)

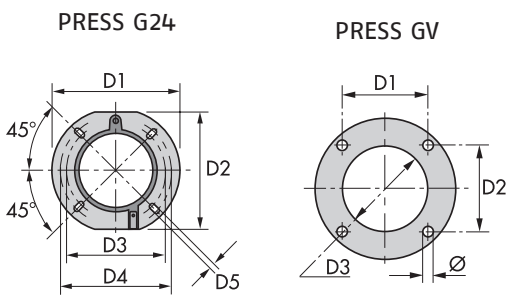
BURNER



Model	A	B	C	D	E	F - F (1)	H	I	L	O - O (1)
PRESS G24	425	222	203	397	485	118 - 253	125	290	-	- - -
PRESS GV	439	234	205	397	473	185 - 320	140	292	59	690 - 825

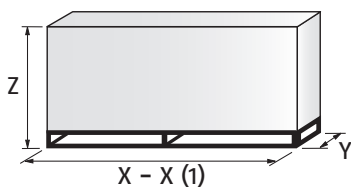
(1) Length with extended combustion head.

BURNER - BOILER MOUNTING FLANGE



Model	D1	D2	D3	D4	D5	Ø
PRESS G24	213	198	160	190	11	-
PRESS GV	160	160	170	-	-	M10

PACKAGING



Model	X - X (1)	Y	Z	kg
PRESS G24	650	535	450	33
PRESS GV	680	535	450	33

(1) Length with extended combustion head.

Installation Description

Installation, start up and maintenance must be carried out by qualified and skilled personnel. All operations must be performed in accordance with the technical handbook supplied with the burner.

BURNER SETTING

PRESS G24

- ▶ After drilling the boilerplate, using the supplied gasket as a template, fix the flange of burner to the boiler.
- ▶ Dismantle the blast tube from the burner and install the nozzles, choosing these on the basis of the maximum boiler output and following the diagrams included in the burner instruction handbook.
- ▶ Check the position of the electrodes.
- ▶ Adjust the combustion head and refit the blast tube to the burner casing.
- ▶ Install the burner to the flange.

PRESS GV

- ▶ The PRESS GV model has slide bars, for easier installation and maintenance.
- ▶ After drilling the boilerplate, using the supplied gasket as a template, dismantle the blast tube from the burner and fix it to the boiler.
- ▶ Adjust the combustion head.
- ▶ Refit the burner casing to the slide bars.
- ▶ Install the nozzle, choosing this on the basis of the maximum boiler output and following the diagrams included in the burner instruction handbook.
- ▶ Check the position of the electrodes.
- ▶ Close the burner, sliding it up to the flange.

HYDRAULIC AND ELECTRICAL CONNECTIONS AND START-UP

- ▶ The burners are supplied for connection to two pipes fuel supply system.
- ▶ Connect the ends of the flexible pipes to the suction and return pipework using the supplied nipples.
- ▶ Make the electrical connections to the burner following the wiring diagrams included in the instruction handbook.
- ▶ Prime the pump by turning the motor.
- ▶ On start up, check:
 - Pressure pump (to max. and min.)
 - Combustion quality, in terms of unburned substances and excess air.

Burner accessories

Nozzles

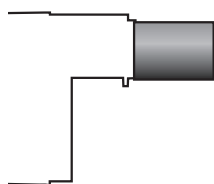


The nozzles must be ordered separately. The following table shows the features and codes on the basis of the maximum required fuel output.

Burner	Rated delivery [kg/h] at 12 bar	GPH	Nozzle code
PRESS G24	6,3	1,50	3042107
PRESS G24	7,3	1,75	3042110
PRESS G24	8,5	2,00	3042126
PRESS G24	10,6	2,50	3042140
PRESS G24	12,7	3,00	3042158
PRESS G24	14,8	3,50	3042162
PRESS GV	17	4,00	3042172
PRESS GV	19,1	4,50	3042182
PRESS GV	21,2	5,00	3042192
PRESS GV	23,3	5,50	3042202
PRESS GV	25,5	6,00	3042212
PRESS GV	27,6	6,50	3042222
PRESS GV	29,7	7,00	3042232
PRESS GV	31,8	7,50	3042242

(*) Nozzle rated delivery is referred to atomised pressure

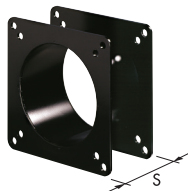
Extended head kit



“Standard head” burners can be transformed into “extended head” versions, by using the special kit.

Burner	Standard head length (mm)	Extended head length (mm)	Kit code
PRESS G24	118	253	3010051
PRESS GV	185	320	3000580

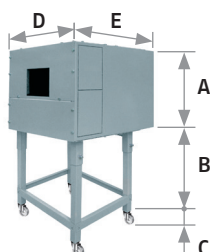
Spacer kit



If burner head penetration into the combustion chamber needs reducing, varying thickness spacers are available, as given in the following list.

Burner	Spacer thickness S (mm)	Kit code
PRESS GV	142	3000755

Sound proofing box



If noise emission needs reducing even further, sound-proofing boxes are available. In case of generator heights, where a lower dimension "B" is required, ask for the Box Support Kit code 20065135. The useful dimensions are 40 mm less than the total dimensions indicated in the table (A, D, E). Not suitable for outdoor use.

Burner	Box type	A (mm)	B (mm) min-max	C (mm)	D (mm)	E (mm)	[dB(A)] (*)	Box code
PRESS GV	C1/3	650	372 - 980	110	690	770	10	3010403

(*) Average noise reduction according to EN 15036-1 standard

Degasing unit



To solve problem of air in the oil sucked, two versions of degasing unit are available.

Burner	Filter	Filtering degree (µm)	Degasing unit code
PRESS GV	With filter	50 - 75	3010055
PRESS GV	Without filter	-	3010054

PC Interface kit



To connect the control box to a personal computer for the transmission of operation, fault signals and detailed service information, an interface adapter with PC software are available.

BURNER	KIT CODE
PRESS G24 - GV	3002719

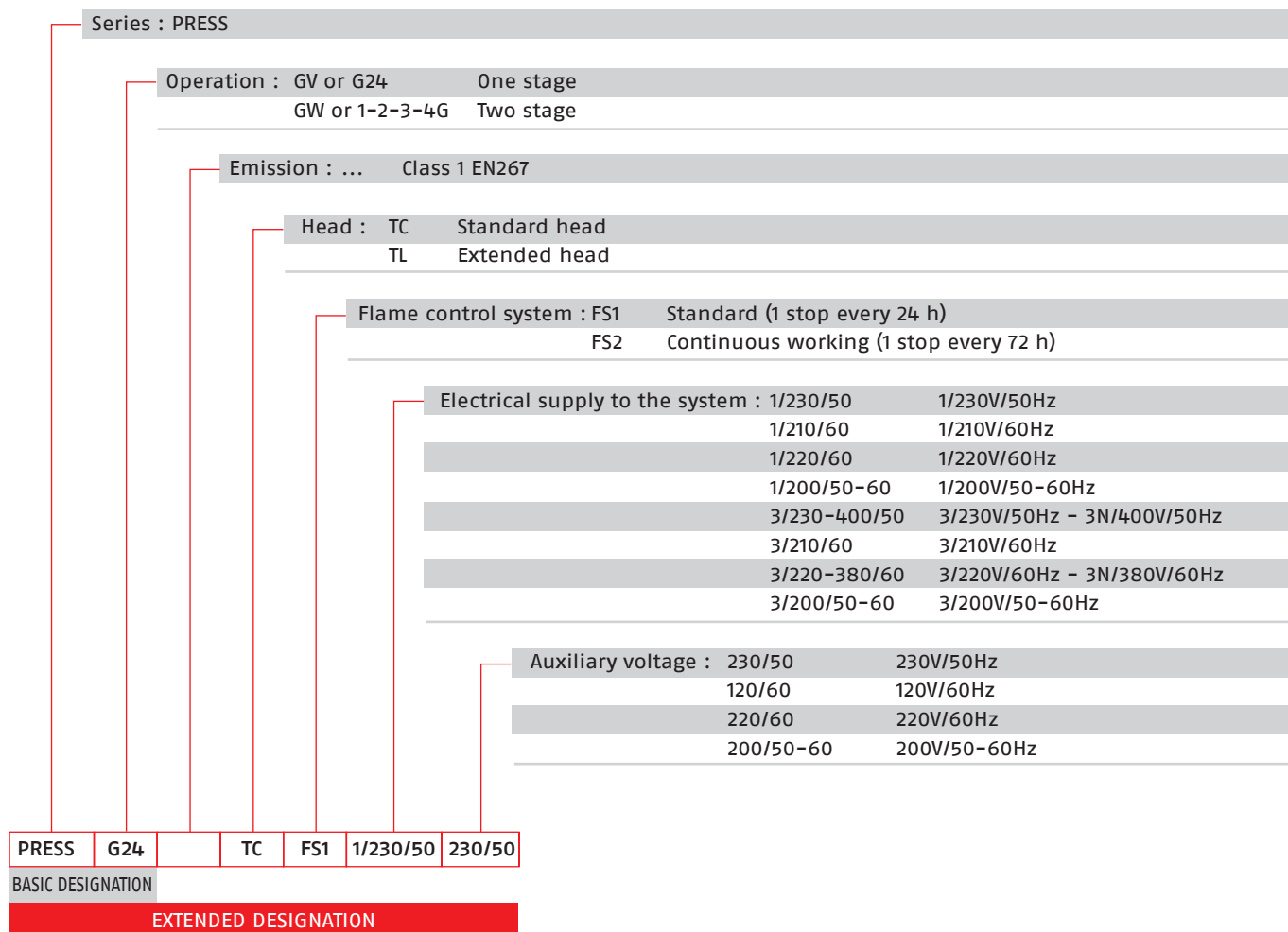
Protection kit (electromagnetic interferences)

When the burner is installed in a room particularly subject to electromagnetic interference (signals emitted over 10 V/m) due for example to INVERTER presence or in systems where the lengths of the thermostat connections is over 20 meters, this specific protection kit is available as an interface between the thermostatic controls and the burner.

BURNER	KIT CODE
All models	3010386

Specification

DESIGNATION OF SERIES



AVAILABLE MODELS

PRESS G24	TC	FS1	1/230/50	230/50
PRESS G24	TC	FS1	1/220/60	220/60
PRESS GV	TC	FS1	1/200/50-60	200/50-60
PRESS GV	TC	FS1	1/230/50	230/50
PRESS GV	TC	FS1	1/220/60	220/60

STATE OF SUPPLY

Monoblock forced draught oil burner with one stage operation, fully automatic, made up of:

- Air suction circuit
- Fan with forward curve blades with high performance concerning pressure and air delivery
- Air damper for air setting
- Starting motor at 2850 rpm, single-phase, 230V, 50Hz
- Combustion head, that can be set on the basis of required output, fitted with:
 - stainless steel end cone, resistant to corrosion and high temperatures
 - ignition electrodes
 - flame stability disk
- Gears pump for high pressure fuel supply, fitted with:
 - filter
 - pressure regulator
 - connections for installing a pressure gauge and vacuumeter
 - internal by-pass for single pipe installation
- Oil valves on the output circuit
- Photocell for flame detection
- Microprocessor-based burner safety control box, with diagnostic function
- Slide bars for easier installation and maintenance (for GV model)
- 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
- 2 Pipe fittings (for GV model)
- 2 Pipe fittings gasket (for GV model)
- 1 burner flange (for G24 model)
- 4 screws for fixing the burner flange to the boiler
- 1 thermal screen
- Instruction handbook for installation, use and maintenance
- Spare parts catalogue.

NOTES

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

06/2015

TS0036UK03



[1]

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.



[2]

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.

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

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

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