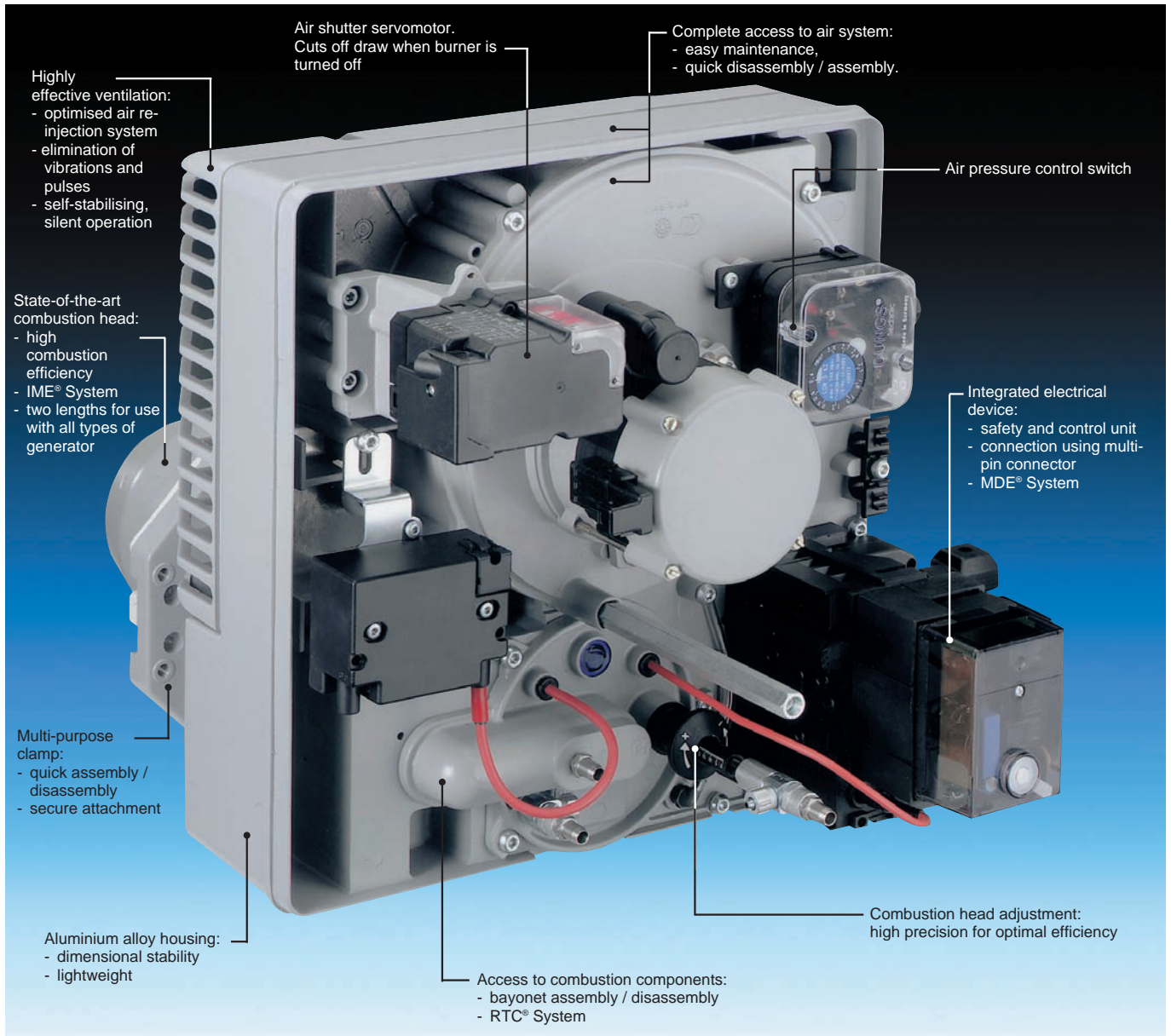




CE - mark gas burners
C.20 - C.24
100 - 240 kW

Low NO_x





Innovative technology to make the burner more accessible.

Medium output burners used in heating systems must meet five essential requirements:

- simple implementation,
- easy operation,
- reliable and efficient settings,
- rational use of energy,
- low pollution emissions.

C.20 GX – C.24 GX burners are equipped with the innovative MDE® system, which allows technicians to query the burner at any time and obtain operating information and details of startup phases.

Burners are designed, developed and built in compliance with the European standards EN 676.

CUENOD burners are manufactured in compliance with the quality assurance certificate AFAQ ISO 9002.

All CUENOD burners bear the **CE** mark, indicating compliance with the relevant European Directives, including the Efficiency Directive 92/42 EEC, when installed on **CE** boiler shells.



Low NO_x

The RTC® system.

The combination of a functional housing design, advanced combustion head technology and Memorized Head Settings (RTC®) ensures:

- Total access after cover removal.
- Quick and easy maintenance.
- Complete disassembly of all combustion head components (short and long) in a single action without having to remove or turn the burner.
- Memorization of all optimised startup combustion settings during maintenance procedures.

The AGP® system.

Developed and perfected by CUENOD, the AGP® system has already won over gas combustion specialists. The system is fitted onto our medium and high output burners.

With this technology, burners guarantee:

- a completely stable air-gas mix,
- a high and constant CO₂ rate at all burner output levels,
- accurate control of excess air, essential for the optimal running of condensation generators.

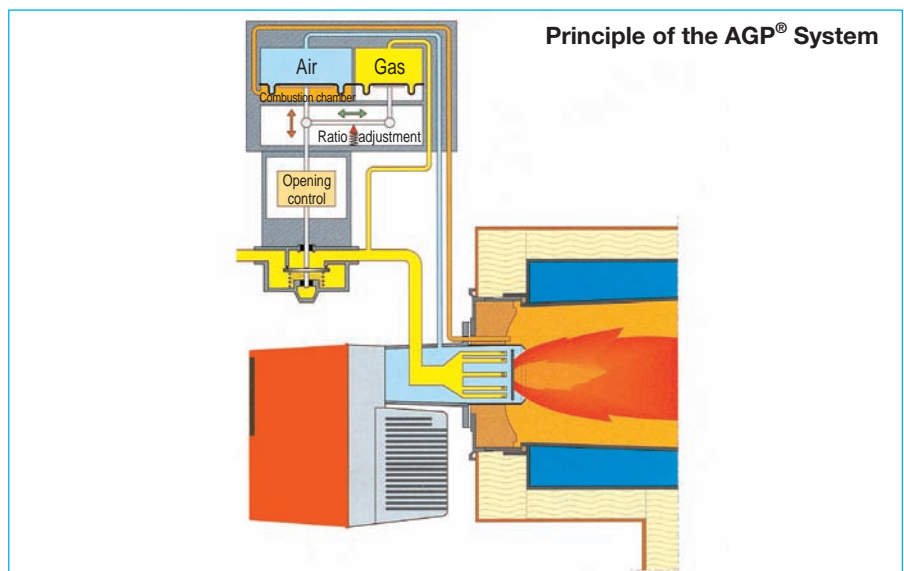
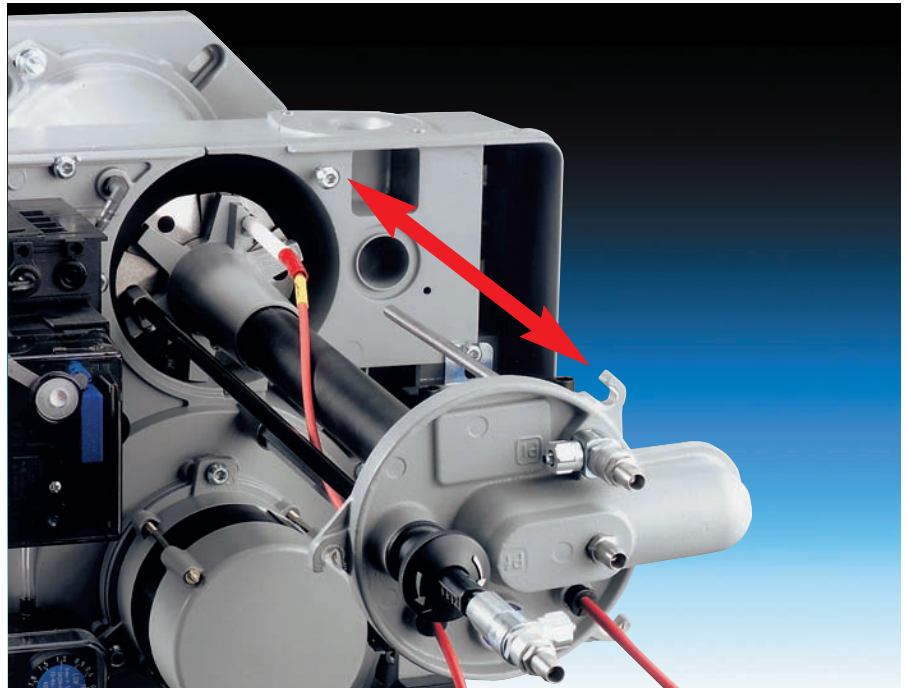
The AGP® system also automatically corrects the following:

- positive and negative gas pressure variations,
- changes in air pressure due to electrical circuit voltage fluctuations and atmospheric pressure changes,
- output according to pressure variations in the combustion chamber, especially during ignition.

Burner ventilation.

Modern boiler technology and a significant number of older generators led us to create a burner fitted with a powerful ventilation system that offers:

- faster combustion stabilization during startup,
- extremely quiet operation (isolated air flow system),
- reduced sensitivity to fluctuations in chimney draw.



Low NO_x combustion head.

- Combining Multi-Stage Injection System (IME®) design and a powerful ventilation system, this head increases air combustion speed, homogenises the air-gas mix and reduces the time combustion products are in the flame, thus reducing thermal nitric oxide formation.
- The use of natural gas reduces the amount of NO_x produced to values below 80mg/kWh for the majority of standard-sized boilers (contact us for details).



Easy installation.

The unique design and researched packaging provides:

- Quick and reliable generator compatibility.
- Significantly quicker assembly.
- Precise, faultless connections.
- Valve installation without the need for any additional procedures: assembly and air-tightness inspections are carried out in the factory.
- Accurate adjustment using clear and precise combustion head and servomotor markings.

A gas rack for complete safety.

The burners are designed to be used with natural gas at 20 or 300mbar and with propane at 37 to 150mbar.

All safety and control components are included in the control unit:

- filter,
- gas pressure switch,
- safety valve,
- main valve,
- pressure regulator.

The gas rack can be installed above (casing at bottom), below (casing at top), on the left or on the right of the burner.

The gas rack is prewired and factory-tested.

The MDE® system:

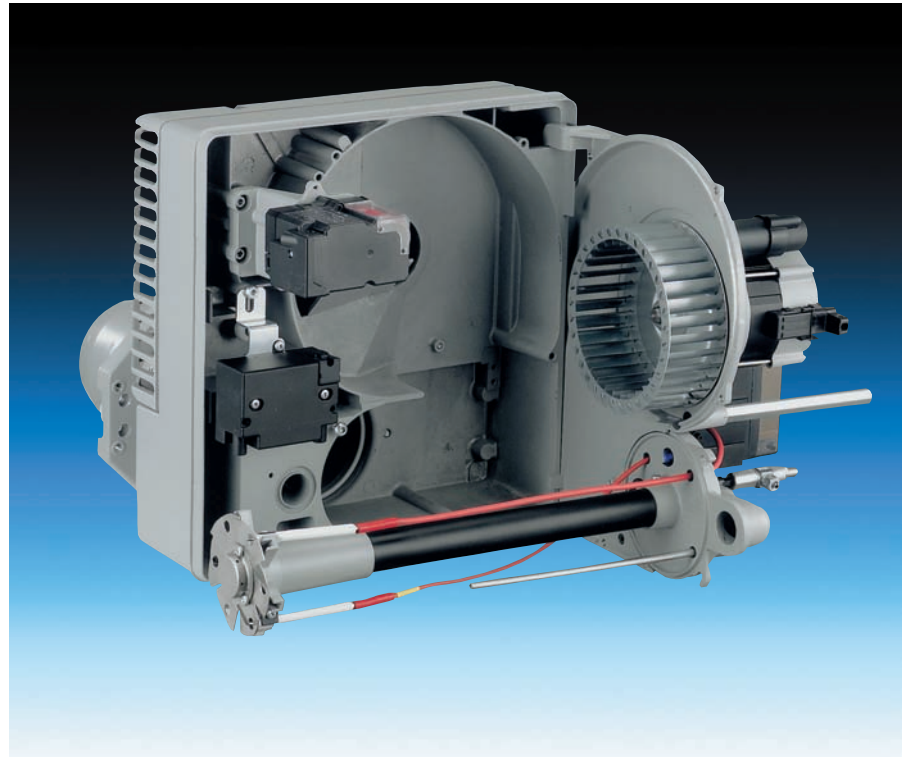
Operating Data Memorization

Burners are equipped with a new operating system that may be consulted at any time.

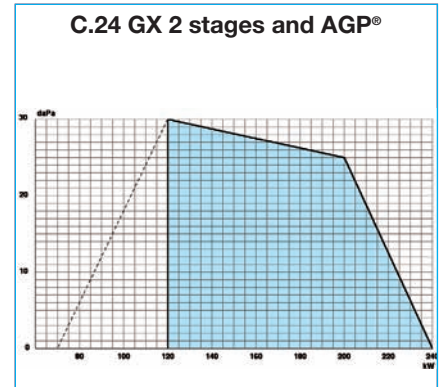
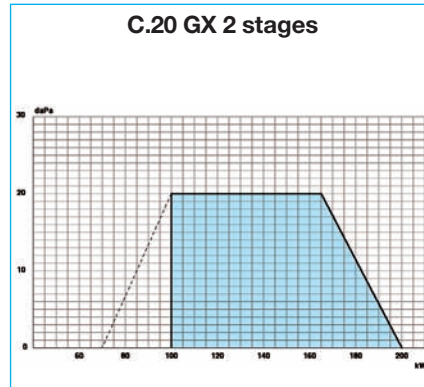
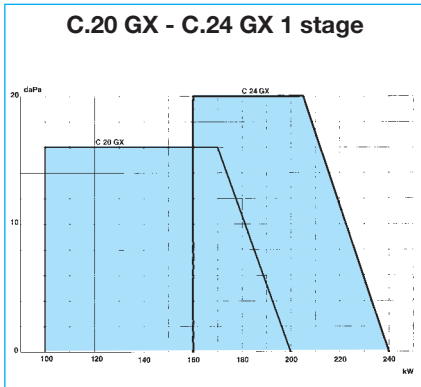
The system provides two types of data:

- 1 - "Instantaneous" information
 - Burner startup cycle,
 - Power supply measurement,
 - Flame signal measurement.
- 2 - "Stored" information
 - Burner operation statistics,
 - Conditions of use procedures.

This information, **available in real time**, can be exported and referenced using a laptop computer running CUENOCOM software. The information can then be sent to the operating system to facilitate maintenance.



Performance charts.



Bulk and dimensions.

Bulk and dimensions.

A minimum of 0.60m must be allowed around the burner for maintenance purposes.

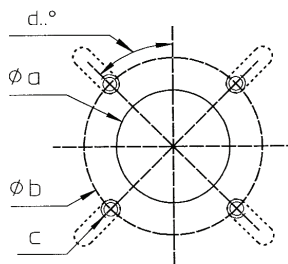
Ventilation

in the boiler room

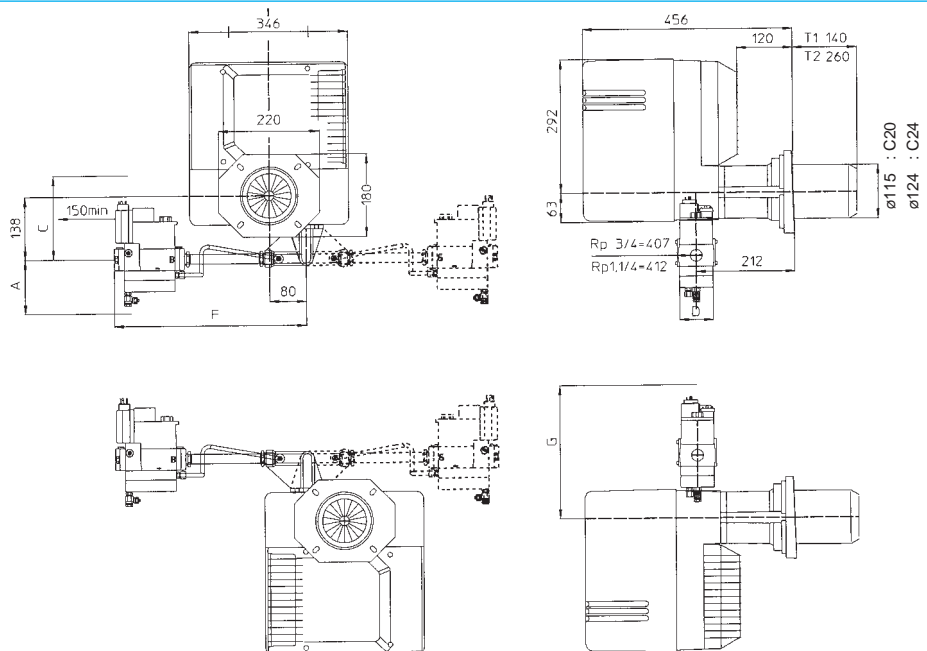
1.2m³ of new air is required for every kWh produced by the burner.

Note: the burner may be installed with the casing either at the top or the bottom.

Front panel boring.



Ø a	Ø b	c	d
130 to 140	172 to 184	M8	45°



Valve	Gas pressure	Use	A	C	D	F	G
407	300 mb*	1 stage	46	140	92	425	330
		2 stages	46	214	92	425	400
		AGP®	102	180	73	419	317
412	20 mb	1 stage	55	160	116	450	350
		2 stages	55	254	114	450	440
		AGP®	100	169	96	452	320

* The 20mb and 300mb C.20 models are fitted with a 407 valve.

Packing.

The burner and cover are delivered in a package that weighs approximately 25kg and contains:

- A bag of assembly accessories.
- Boiler plate,
- Documentation, including:
 - operating instructions,
 - electrical diagram,
 - hydraulic diagram,
 - certificate of guarantee,
 - a self-adhesive label to be used if the burner is installed with its casing at the bottom.
- gas rack with valve and built-in filter.

Output levels.

		C.20 GX 1 stage		C.24 GX 1 stage		C.20 GX 2 stages		C.24 GX 2 stages and AGP®	
		min.	max.	min.	max.	min.	max.	min.	max.
Burner	kW	100	200	160	240	100	200	120	240
Min. 1st startup	kW	/	/			70		70	
Boiler*	kW	92	184	147	221	92	184	110	221

* The boiler output is calculated for 92% efficiency and is given for information purposes only.

Installation.

Depending on boiler dimensions and installation conditions, the burner body may be installed with:

- casing at top
- casing at bottom

Leave an area around the burner clear for maintenance purposes.

The gas rack can be installed to the left or right irrespective of the burner body position (casing at top or bottom).

The supply piping section is calculated to restrict energy loss to between 0.5 and 1mbar at gas pressures of 20 and 37mbar, and between 5 and 10mbar at pressures of 150 and 300mbar.

The piping diameter must be greater than the filter diameter.

For information purposes, the following diagram shows the corresponding gas flows and maximum burner outputs.

Gas flows.

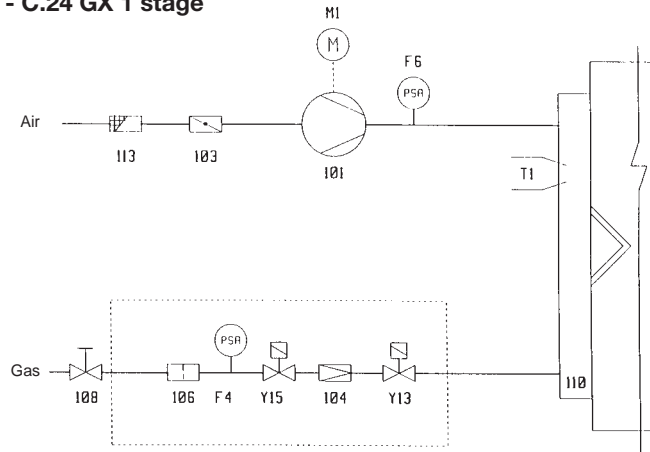
Gas type	Flow in m ³ /h*	
	C.20 GX	C.24 GX
Natural gas group H NCV=9.45kWh/m ³	21,2	25,4
Natural gas group L NCV=8.13kWh/m ³	24,6	29,5
Propane NCV=24.44kWh/m ³	8,2	9,8

Ventilation in the boiler room.

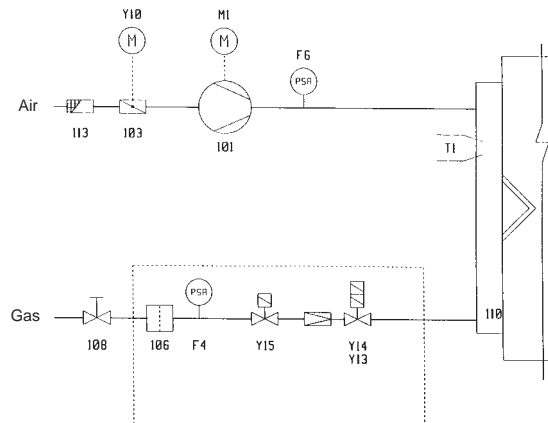
The air-renewal required is 1.2m³/kWh. Produced by the boiler.* at 15°C and 1013mbar.

* at 15°C and 1013 mbar

C.20 GX - C.24 GX 1 stage



C.20 GX - C.24 GX 2 stages

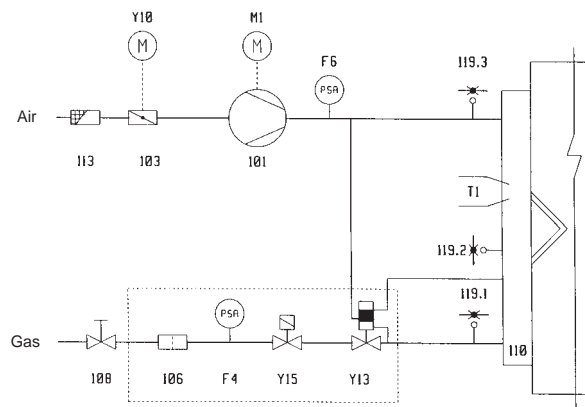


Hydraulic diagrams.

Key:

- F4 Min. gas pressure switch
- F6 Air pressure switch
- M1 Burner motor
- T1 Transformer
- Y10 Servomotor
- Y13 Main gas valve
- Y15 Safety gas valve
- 101 Fan
- 103 Air shutter
- 104 Pressure regulator
- 106 Filter
- 108 Manual valve (optional)
- 110 Gas injector
- 113 Air intake grill
- 119.1 Gas pressure point
- 119.2 Combustion chamber pressure point
- 119.3 Air pressure point

C.24 GX AGP®.



Electrical connection.

Electrical installations must be carried out according to standard NF C 15.100 and other standards currently in force.

Particular attention must be paid to the burner supply main disconnect switch which must be able to carry the total circuit output and isolate the circuit during maintenance

Output adjustment.

Operation.

● 1-stage burner.

All the heat energy is provided through a single flow.

The flow can be adjusted from “full” to “off” and vice versa: the burner ignites and goes out according to heat requirements.

Supply connection:
(see diagram below)

The supply is connected between terminals N (neutral) and L1 (live on 7-pole plug).

Establish a series connection between the manually-activated safety thermostat (or pressure switch) and the phase power supply.

In the interests of safety, an isolating transformer and a 30mA differential circuit breaker should be used when the supply has no neutral or has neutral impedance. This circuit must be protected using a 6.3A delayed action fuse. The smallest conductor section must measure 1.5mm².

● 2-stages burner.

Two thermal output flows are available.

These can be adjusted to:

- “Full” or “off”: when output increases, it moves progressively through two levels to avoid impact on a sudden startup.
- “Full” or “low”: a low flow is used when there is little demand for heating, or for domestic hot water supply. The combustion gases are cooler and increase with the output.

● AGP® burners:

After startup (which uses approx. 15% of the normal flow), the thermal output progressively increases through two different flows.

These can be adjusted to:

- “Full” or “off”: progressive output increase (between 20 and 30 seconds). The equipment benefits from all the combustion control of the AGP® system.
- “Full” or “low”: this type of setting offers not only the advantages of the AGP® system, but saves energy by operating at reduced power.
- “Modulating”: the burner output is set to the required level.

Setting connection.

1-stage, 2-stages and AGP® burners:
7-pole plug.
Connect the thermostat or pressure governor between terminals T1 and T2.

2-stages burners:

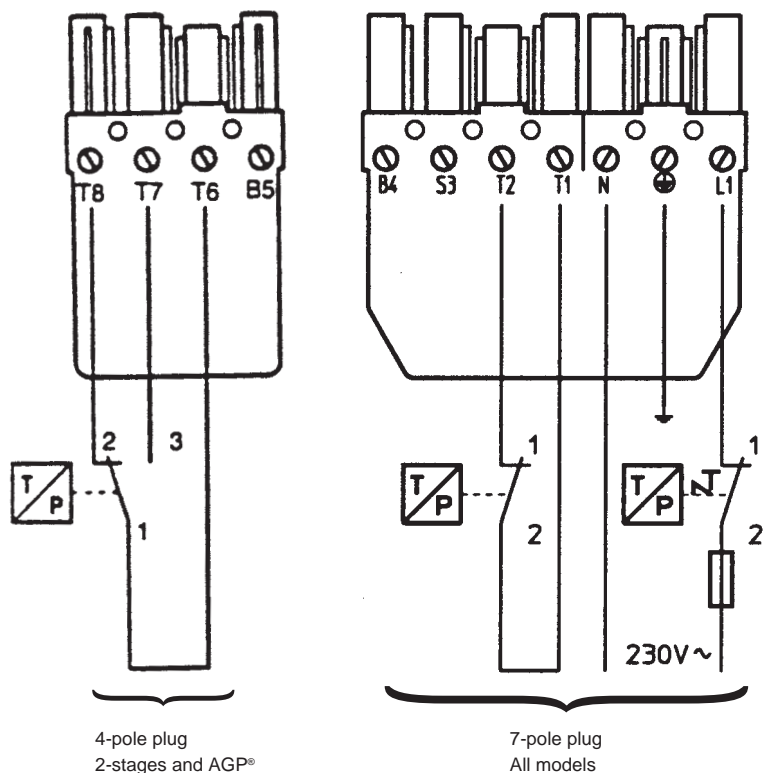
4-pole plug.

- Connect terminals T6 and T8 for “full” flow or “off”.
- Connect the two-way contact instruments to terminals T6, T7 and T8 for “full” or “low” flows controlled by a thermostat or pressure switch.

AGP® burners:

4-pole plug.

- Connect terminals T6 and T8 for “full” flow or “off”.
- Connect the two-way contact instruments to terminals T6, T7 and T8 for “full” or “low” flows controlled by a thermostat or pressure switch.
- Connect the 3 points to terminals T6, T7 and T8 for a “modulating” flow controlled by a PID regulator.





18, Rue des Buchillons - B.P. 264
74112 ANNEMASSE Cedex - FRANCE
Tel.0033 (0)450 876 510
Fax.0033 (0)450 876 511
www.cuenod.com