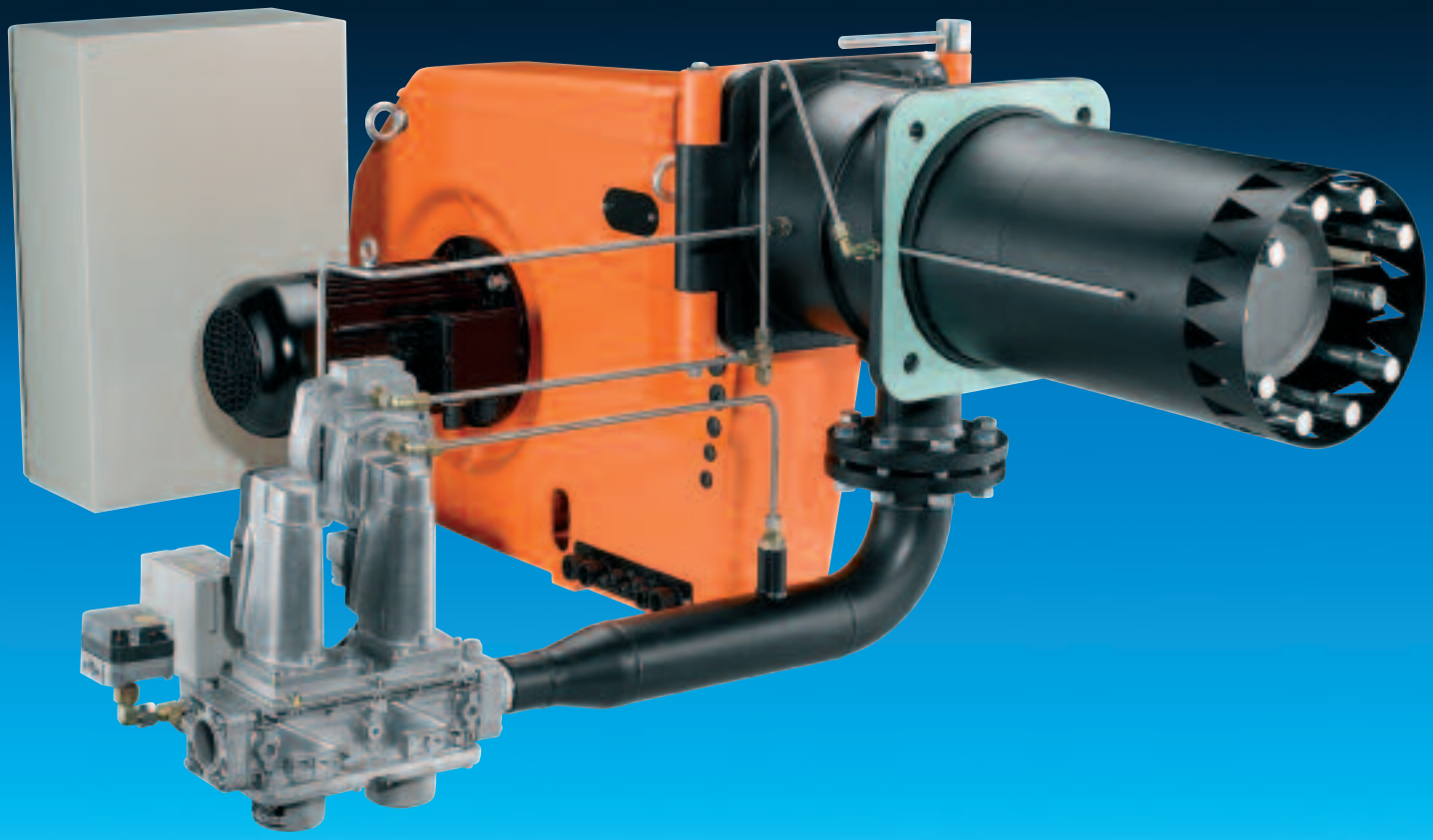
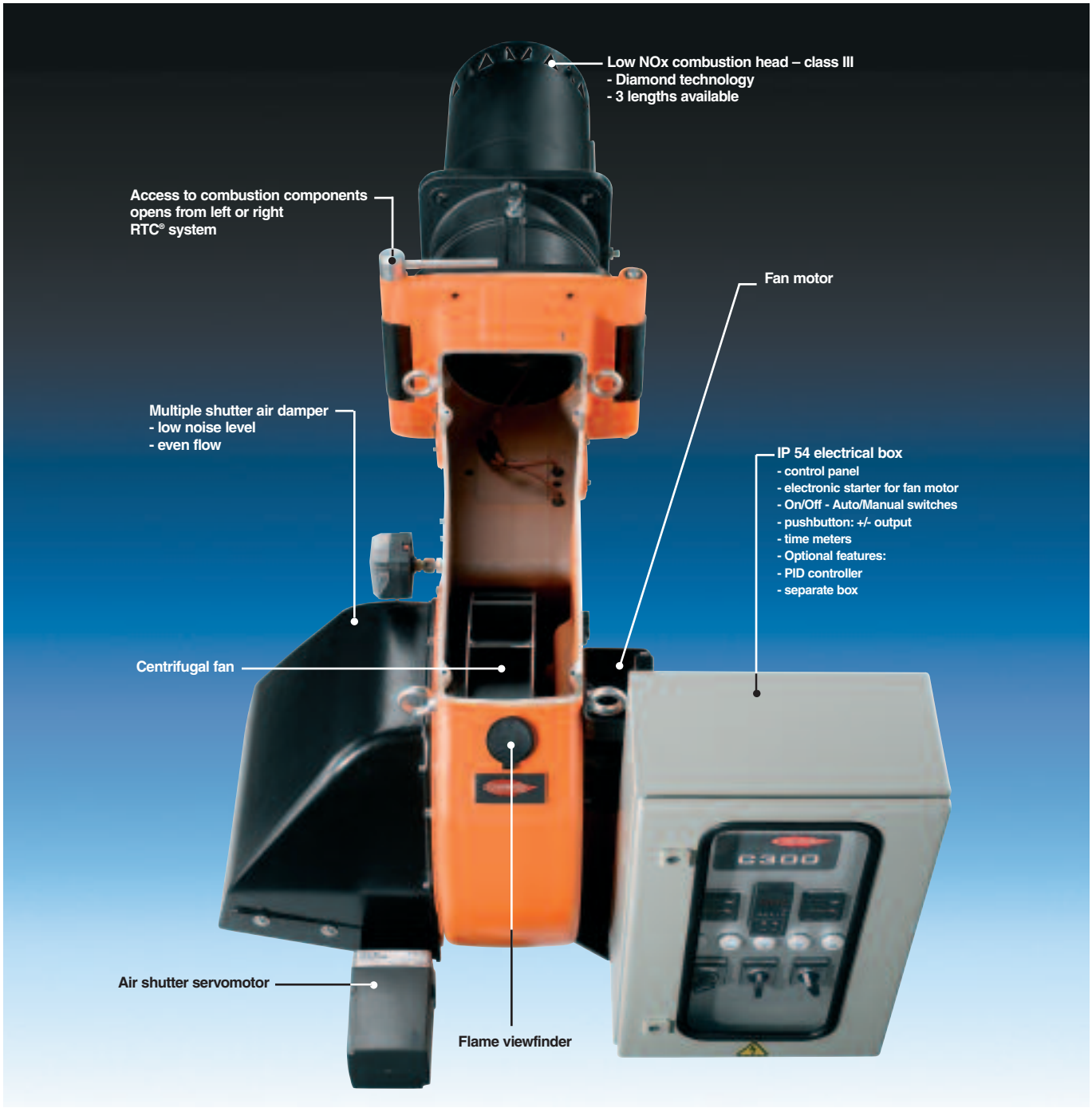


C.260 ... C.1100
1 050 - 10 300 kW
Monoblock gas burners

CUENOD



C.260 to C.1100
1050 to 10300 kW
Single-unit burners

With burners C.260 to C.1100, CUENOD offers a range of mid-sized and large burners.
They can be installed in all types of boilers in either the service sector, private residences or in industry.
These burners use natural gas and propane, feature progressive two stage operation and a PID control can be used to provide modulating performance.
The turndown ratio can reach 1/10.

The fuel-air mix can be controlled pneumatically (AGP® system) or electronically (GEM® system).
To build these burners, CUENOD has implemented all its development resources and technological expertise acquired in large shared and industrial installations.

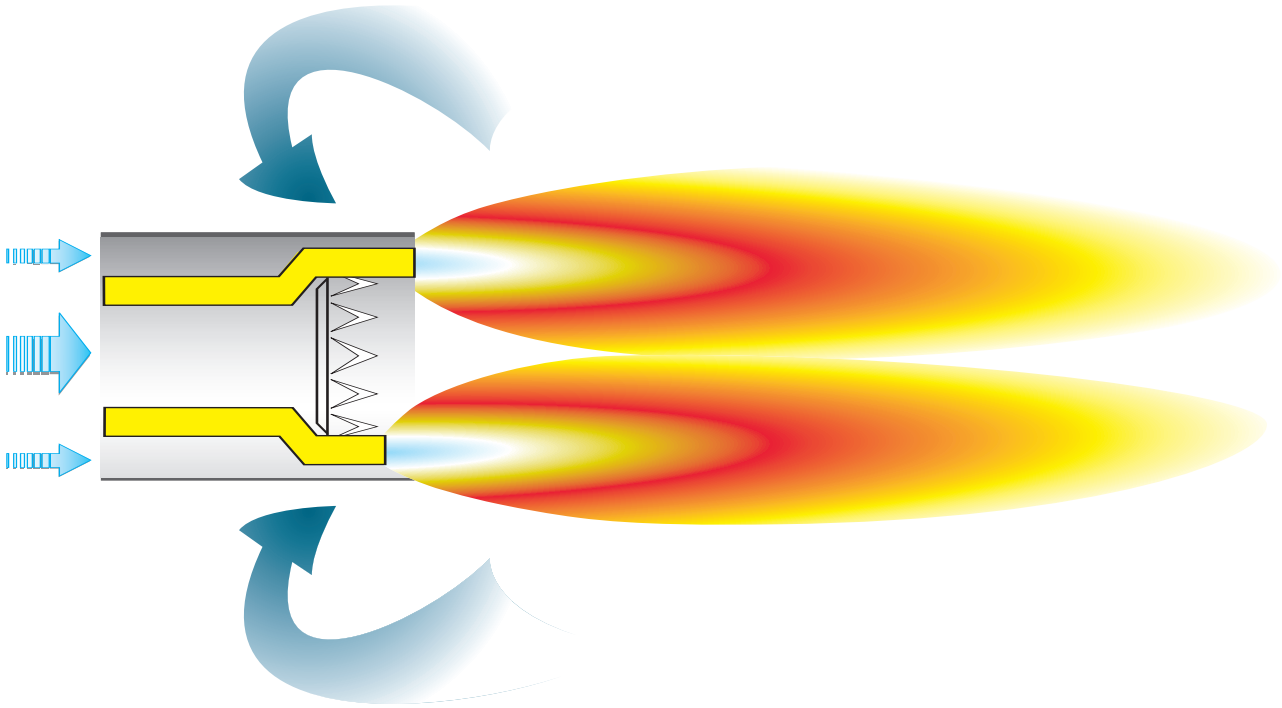
Burners are designed, developed and built in compliance with the European standard EN 676.

They received certification in compliance with European Directive requirements.

- Gas Appliances Directive 90/396/EEC
- Machinery Directive 89/392/EEC
- EMC Directive 89/336/EEC
- Low Voltage Directive 73/23/EEC
- Efficiency Directive 92/42/EEC, when burners are installed on the EC boilers.

CUENOD burners are manufactured in compliance with the quality assurance certificate AFAQ ISO 9001.

How the “Diamond Head” operates



“Diamond Head”: clean gas combustion.

CUENOD’s vast experience in the field of combustion combined with a methodical search for the best processes has produced a highly efficient range of burners.

Low NOx gas combustion involves internal recirculation of the combustion gases. These gases are partially drawn into the base of the flame via triangular-shaped openings at the tip of the combustion head.

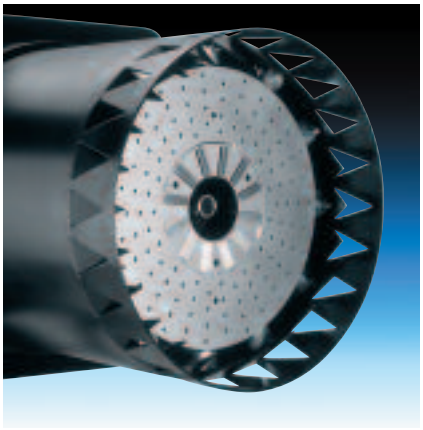
The gas injectors are placed in such way that a large quantity of combustion gas is drawn in and rapidly mixed with the air and the gas at the root of the flame. This mix crosses the main reaction area and slows down the combustion, thus reducing the temperature.

This staged combustion system (IME® system) leads to a significant decrease in thermal nitrogen oxide.

The advantage of this technique is that it automatically adjusts the amount of recirculated combustion gas: the flame always has the most reliable volume which has little affect on the nominal output of the generator, unlike external recirculation systems.

Burners C.260 to C.1100 are equipped with “Diamond” **low NOx class III** combustion heads, guaranteeing emission values compliant with European Standard EN 676.

An O2 regulation system (optional) can be used to control excess air.



Systems that make all the difference

Aside from combustion, a burner's most important function is to control the mix of air and fuel.
A correct air-fuel mix ensures higher efficiency and lower emission of pollutants.

Mechanical: of the three processes known, the first and the oldest is the mechanical process: each of the components in the mix is controlled by a valve or shutter linked to a cam, the profile of which can be adjusted.
This is easy to use.

AGP® system

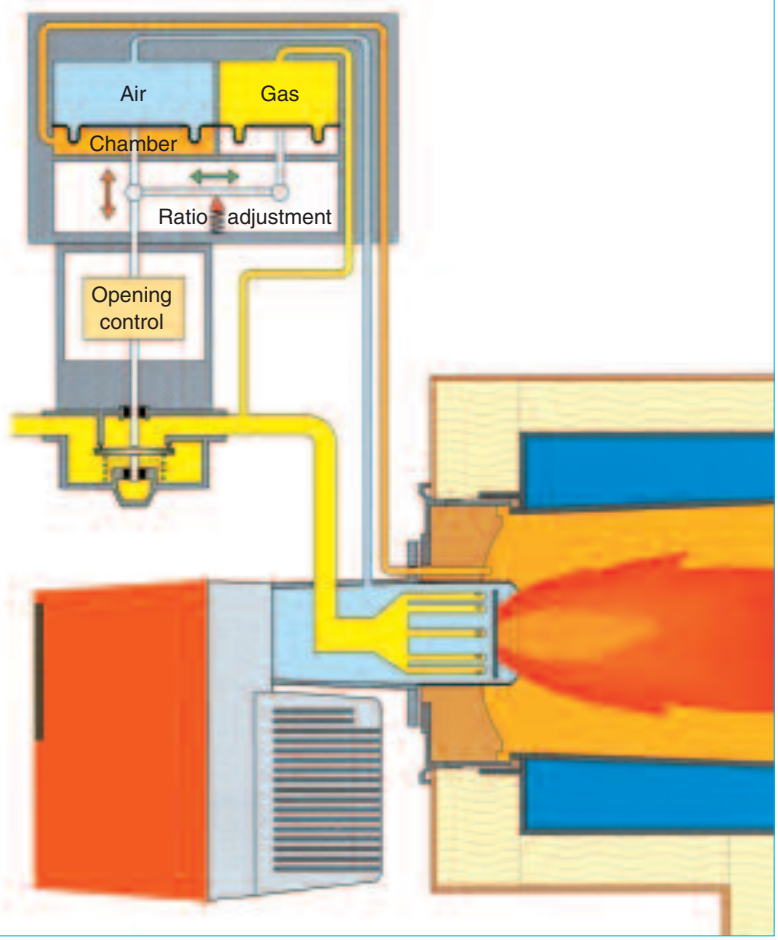
The second, developed by CUENOD, is pneumatic and uses a comparison method.
The air pressure and the gas pressure are measured in the combustion head and at the gas valve output. These measured values follow a proportional law ensuring a correct air-gas mix.
Adjustment is limited to two points, is easy to learn and the results are highly reliable over time.

This technology is used on all our burners and ensures:
- 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.

The AGP® system uses fan air pressure and thus adapts perfectly to variations in the fan's speed,
eliminating the need for a maximum gas pressure switch.

How the AGP® system works



GEM® system

The most recent and universally applied system is an electronic one.
It controls the position of one or more activators simultaneously.

The servomotors of the air flow and oil components are controlled by a microprocessor which contains the setpoints defined for each load curve.

An additional advantage of the GEM® system (electronic mix management system) is that it provides specific information on all the commands and states of the overall system: these can be accessed directly or by remote control.

Digital programming is easy, either via a specific module or a computer by following simple instructions.

RTC® system

The combination of a functional housing design and advanced combustion head technology ensures:

- total access, essential for quick and easy maintenance
- complete disassembly of all combustion head components (short and long) in a single action maintains initial combustion settings during maintenance procedures
- compact and few mechanical components ensure quick and easy cleanup
- saves time since few tools are required.

Noise levels of monoblock burners C.260 to C.1100.

Acoustic tests on the fans of C.260 to C.1100 CUENOD burners measured that noise levels for these burners are very low for this power range.

The configuration of certain systems, the proximity to sensitive areas and, in industrial installations, the continuous presence of personnel require special solutions to reduce noise. CUENOD offers a solution tailored to each individual situation or budget.

The first solution involves the use of a sound-proofing box.
This box absorbs the noise produced by the burner, such as the sounds of air being sucked in or blown out as well as the noise made by the fan motor. We offer two types of boxes depending on the level of noise reduction required

- Cl.20 for a decrease of between 15 and 20 dB(A), and,
- Cl.30 for a decrease of between 20 and 30 dB(A).

These cube-shaped devices completely enclose the burner, leaving openings for the supply of fuel, electricity and combustion air.

They are mounted on wheels so they can easily be moved when you need to work on the burner.

The second solution recently made available involves the use of the Variatron®. This device is a frequency regulator that adjusts the fan's speed to the burner load. At low speeds, the fan speed and the air shutter position are such that noise reduction can reach 15 to 20 dB(A).

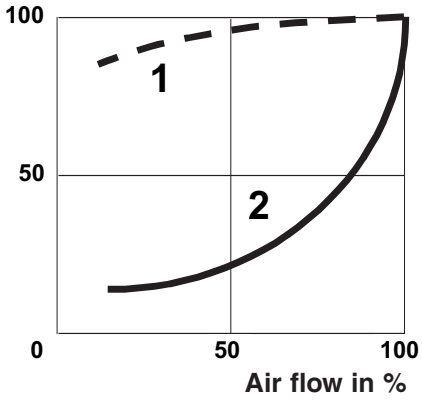
Adjusting the speed of the motor will adapt the air flow and the air pressure to the required amount: the Variatron® limits amount of electrical energy consumed for optimum efficiency.

The Variatron® is environment-friendly since it adjusts the fan motor's output to the requirements of the burner/boiler.

Ignition is inaudible and the burner operates smoothly.

Variatrons® are sold as optional features and adapt quite well, with no modification required, to C.260 to C.1100 burners.

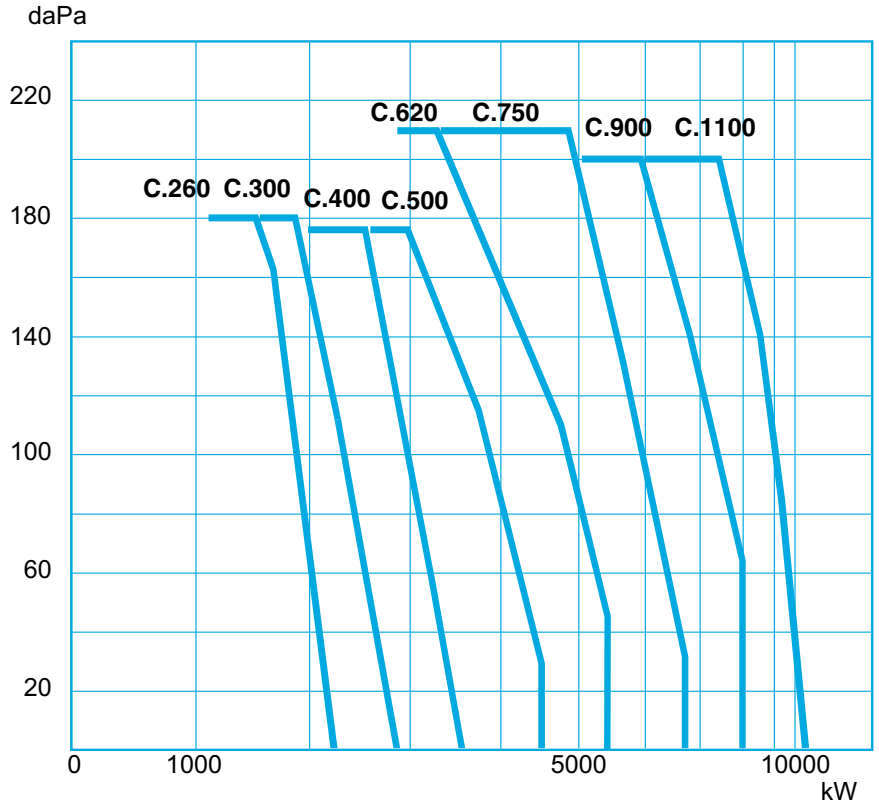
Electrical power absorbed in %



Change in motor power output without (1) and with Variatron® (2)

Performance charts.

Established chart at an altitude of 171 m and 20°C



Technical characteristics. 3 x 400 V

Type	EC Certificate	Burner output kW	Boiler output kW	Motor output kW	Fuse size A
C.260		1060 - 2280	975 - 2100	4,0	16
C.300		1400 - 2800	1290 - 2575	4,0	16
C.400		2000 - 3490	1840 - 3210	5,5	16
C.500		2430 - 4400	2235 - 4050	7,5	20
C.620		2800 - 5330	2575 - 4900	11,0	25
C.750		3130 - 6540	2880 - 6015	15,0	40
C.900		4600 - 7650	4230 - 7040	18,5	40
C.1100		5920 - 10275	5445 - 9450	22,0	50

Electrical connection.

Electrical installations must be carried out in compliance with standards in effect and local requirements.
In 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 circuits.
The following table provides motor power outputs and corresponding fuse sizes. Use “aM” fuses.

The control circuit should be protected by a 10 ampere fuse.
For safety purposes, an isolating transformer and a 30mA differential circuit breaker should be used when the current is 230V three-phase.

Packing.

The burner is delivered attached to a palette and is protected by a heat-shrunk film.

The combustion head is mounted onto the body of the burner and a bag is included containing the screws for fixing it to the boiler.

The gas manifold is attached to the palette next to the burner body.
The gas filter is not assembled.
Operating instructions and the wiring diagrams are also provided.

Weight (without gas manifold)

Burner	Weight in kg
C.260	140
C.300	140
C.400	230
C.500	240
C.620	300
C.750	330
C.900	410
C.1100	450

Power output control.

Thermal output changes progressively between two flows, after firing (flow at start-up approx. 15% of nominal flow).

Due to the significant power output involved, an electronic power regulator is either already incorporated (C.260 to C.1100 GD907), or can be mounted in the burner electrical box.

Instructions for connecting these controlling devices, sensors and other safety, remote control and indicating devices are given in the electrical diagram provided with each burner.

Gas connection.

The cross section of the pipes is calculated in such a way that the pressure drops no more than 10 to 15mbar and that the pressure reducing station is not disturbed.

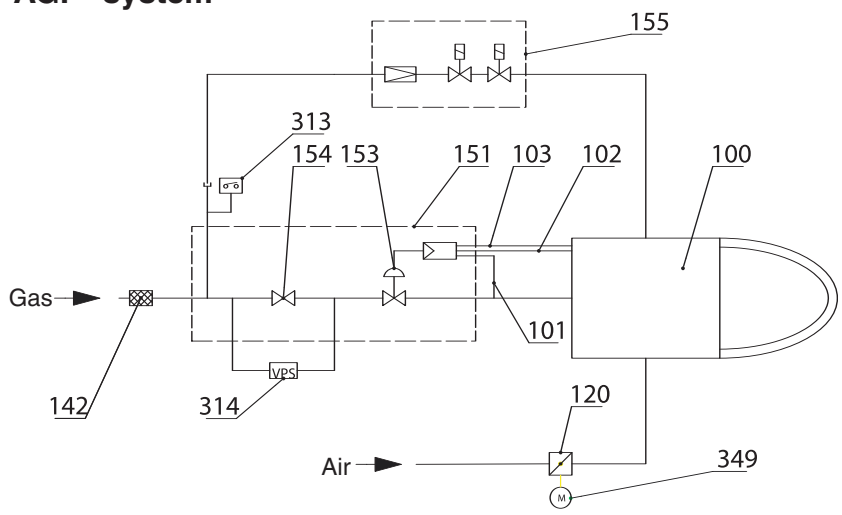
The diameter of the piping should be greater than the diameter of the filter, if possible. For information purposes, the following table contains the gas flows corresponding to each burner's maximum output for a gas at 15°C at a barometric pressure of 1013mbar.

Gas flows

Burner		C.260	C.300	C.400	C.500	C.620	C.750	C.900	C.1100
Maximum burner output	kW	2.280	2.800	3.490	4.400	5.330	6.540	7.950	10.275
Maximum boiler output	kW	2.100	2.580	3.210	4.050	4.900	6.010	7.310	9.450
Natural gas flow	m^3/h	241	296	369	466	564	692	841	1.087
Propane gas flow	m^3/h	93	115	143	180	218	268	325	420

Hydraulic diagrams.

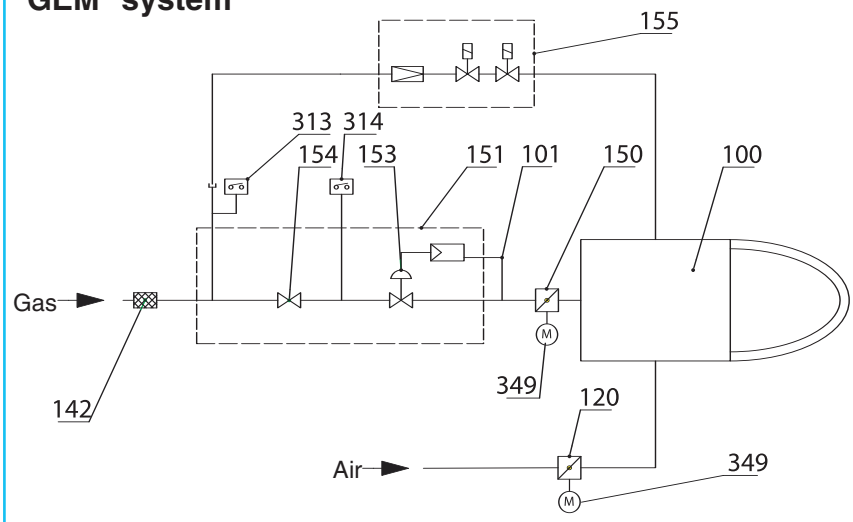
AGP® system



Key:

100 Burner
101 Gas pressure connector
102 Air pressure connector
103 Combustion chamber pressure connector
120 Air shutter
142 Filter
151 Main gas manifold
153 Valve with proportion regulator
154 Safety valve
155 Pilot gas manifold (C.620 to C.1100)
313 Minimum gas pressure switch
314 Leak tester
349 Servomotor

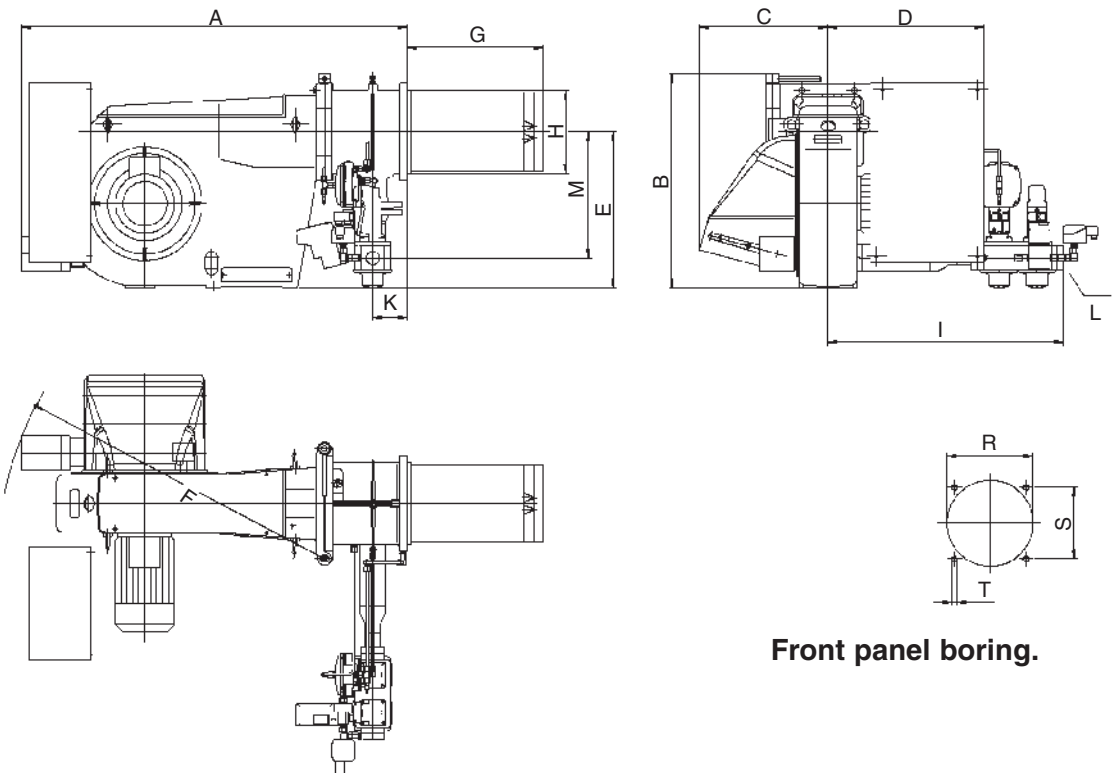
GEM® system



Key:

100 Burner
101 Gas pressure connector
120 Air shutter
150 Gas valve
142 Filter
151 Main gas manifold
153 Valve with proportion regulator
154 Safety valve
155 Pilot gas manifold (C.620 to C.1100)
313 Minimum gas pressure switch
314 Leak tester
349 Servomotor

Bulk and dimensions.



Front panel boring.

Burner	A	B	C	D	E	F	G*	H	I	K	L	M	R	S	T
C.260, 300	1292	720	432	523	524	1096	457	278	792	114	1"1/2	422	290	240	M20
C.400, 500	1488	884	482	696	642	1208	530	345	842	206	2"	441	350	320	M20
C.620	1551	903	492	808	638	1245	500	384	1100	203	DN65	590	400	360	M20
C.750	1551	903	508	808	638	1326	500	384	1100	203	DN65	590	400	360	M20
C.900, 1100	1630	1135	610	820	830	1415	550	460	1158	173	DN80	626	475	410	M20

* Length of short head: semi-long head: +100 mm, long head: +200 mm

Higher power outputs and non-standard burners.

Contact us for burners with higher outputs or separate fans (dual burners), for industrial processes or heating or for burning other fuels.

The information indicated may vary if changes are required to upgrade our equipment.

CUENOD

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05/2005