

GAS P190-250-300-350-450-550-750-1000-1800/M-LX-FGR-EL

Burners for gas modulating (PID fully modulating) equipped with electronic control box LAMTEC BT3.

They are composed by: fan at high pressurisation and combustion head with adjustment at high efficiency and high flame stability.

Compact overall dimensions and disposition rationalized of the components with accessibility facilitated for the operations of setting and maintenance.

For models GAS P250/M-LX-FGR-EL to GAS P1800/M-LX-FGR-EL gas train completely assembled and tested; complete of working valve class A, safety valve class A, minimum gas pressure switch, filter (supplied), leakage control pressure switch.

For model GAS P190/M-LX-FGR-EL gas train completely assembled and tested; complete of working valve class A, safety valve class A, minimum gas pressure switch, filter (supplied), valve proving system (VPS).

For models GAS P190/M-LX-FGR-EL to GAS P550/M-LX-FGR-EL pilot flame gas train with: filter, stabilizer and one solenoid valve.

For models GAS P750/M-LX-FGR-EL to GAS P1800/M-LX-FGR-EL pilot flame gas train with: two solenoid valves. Complete of flange and gasket for installation on generator.

The actuators are independent and are managed directly by the electronic cam:

- one actuator for the gas modulator
- one actuator for the air shutter
- one actuator for the FGR shutter

The burners are equipped with an operating display that allows:

- Adjustment of the parameters of the burner operation
- Adjustment of the setpoint and operation range of the pressure / temperature probe
- Adjustment of the burner's curveset

With the addition of optional accessories (probes) thanks to the most advanced systems for automatic modulation in mechanical or electronic version, the burner constantly ensures the proper gas / air ratio. The maximum efficiency of the returns in each combustion point derived from the punctual adaptation of the thermal load to the heat requirements of the burner at any instant of operation.

In the version with the electronic cam the fuel / combustion air curve, more extended, is fully exploited, guaranteeing excellent performance in terms of accuracy and speed, even during the calibration phase. A microprocessor monitors the different stages of the process and allows the correct repetition of the sequences of operation.

Some accessories are available, like: PC interface, VSD (inverter), O₂ control, O₂ + CO control, Profibus, Modbus.



Fig. 1 GAS P250/M-LX-FGR-EL



Fig. 2 GAS P1000/M-LX-FGR-EL



FBR

CONTROL BOX LAMTEC BT3

GAS BURNERS MODULATING LOW NOX WITH FGR

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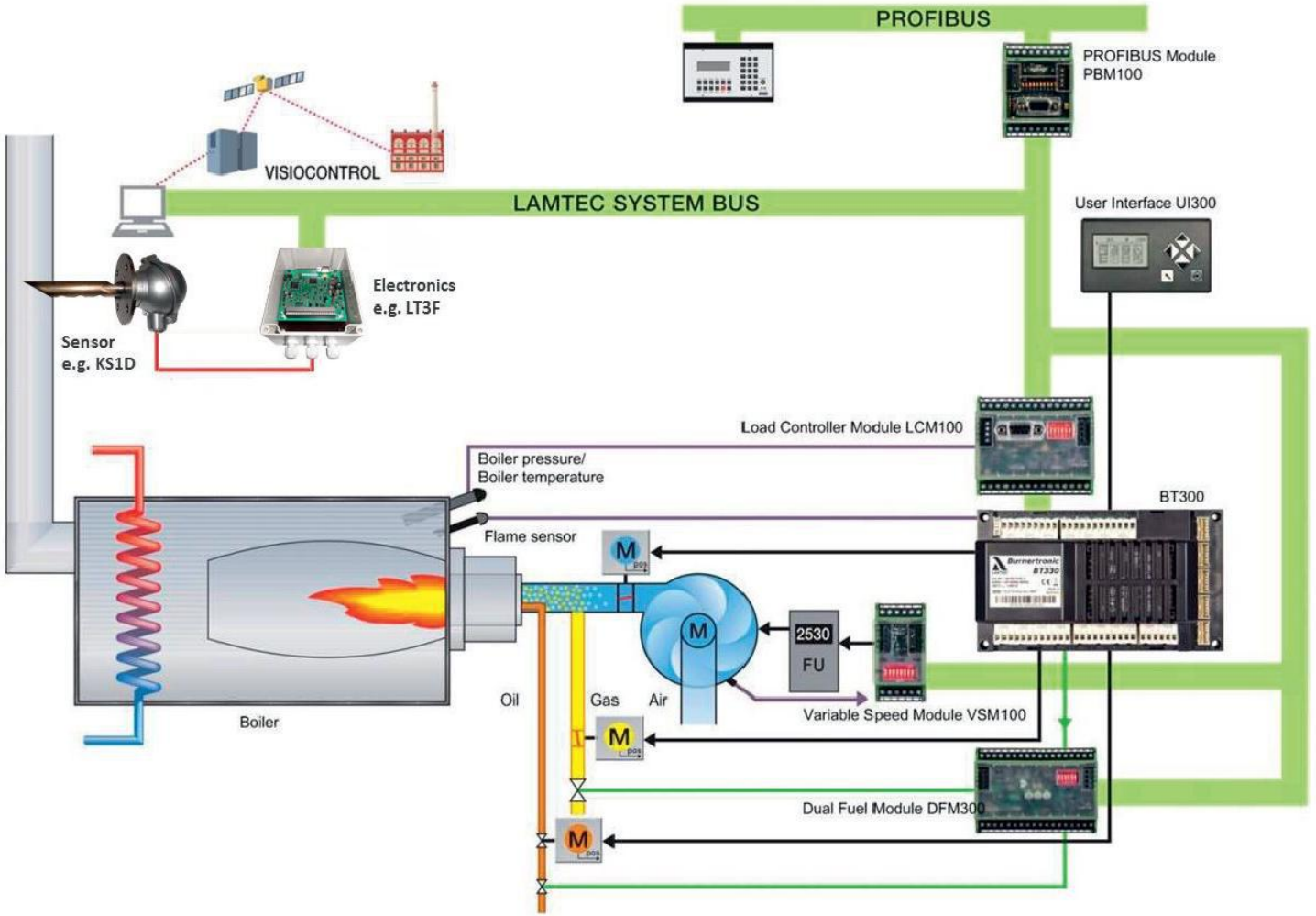


Fig. 3 Control box Lamtec BT3

PRINCIPLE OF OPERATION BURNER WITH FGR

In these burners, to recirculate the exhaust gases from the flue it is used the combustion air fan.

N.B. THE ACTION OF THE FUEL AND AIR ACTUATORS IS NOT AFFECTED BY THE FLUE GAS RECIRCULATION.

The FGR damper stays closed at the beginning of the pre-purge period.

After the adjusted delay (parameter 414 of the BT3 - factory setting: 10) the pre-purge time is stopped temporarily and the recirculation actuator runs to OPEN position. When the FGR actuator reach the pre-purge position (set to the parameter 367), the pre-purge time resumes.

At the end of the pre-purge time the air damper and the FGR damper runs to the ignition position; the fuel actuator is already in the ignition position.

When the BT3 reach the ignition positions of the actuators, the burner ignites.

When the BT3 change it operation in "MODULATION MODE", only the fuel and the air actuators run to the programmed curve.

The FGR actuator remains at its position until the release conditions were met:

- Condition 1: The time period set in parameter 331 of the BT3 - factory setting: 200, it must be expired and

- Condition 2: The release temperature of the flue gas set in parameter 332 of the BT3 - factory setting: 50, it must be reached.

When the 2 conditions are met, the FGR actuator runs to the programmed curve.

You can see the spent time and the FGR temperature on the BT3 operating panel after the "MODULATION MODE".

If, during the operation of the burner, the FGR temperature drops below the threshold set in parameter 332, the recirculation channel remains active.

During the burner operation, the recirculation channel runs to the close position in one of these conditions:

- Condition 1: If the flue gas temperature drops below 0°C

or

- Condition 2: If the Pt100 temperature probe it fails or interrupts

N.B. IF ONE OF THESE TWO CONDITIONS HAPPENS, THE BURNER KEEP OPERATING WITHOUT THE FGR RECIRCULATION CHANNEL. SO ONLY AIR AND FUEL ACTUATORS WORK THROUGH THE PROGRAMMED CURVE.

When you turn off the burner, the recirculation channel will be closed together with the fuel actuator.

FGR (FLUE GAS RECIRCULATION)

FGR (flue gas recirculation) it is a technique for lowering NOx emissions from burners.

FGR lowers NOx in two ways:

1) The cooled, relatively inert, recirculated flue gases act as a heat sink, absorbing heat from the flame and lowering peak flame temperatures.

2) When mixed with the combustion air, recirculated flue gases lower the average oxygen content of the air, starving the NOx-forming reaction for one of the ingredients they need.

The percentage of the flue gas back to the combustion chamber it is defined by the opening of the FGR actuator damper.

FGR quantity must be adjusted so as to recirculate the smallest quantity necessary to obtain the required Nox rate.

DISADVANTAGES OF THE FGR SYSTEM

LOSS OF THE BURNER CAPACITY

If you replace the combustion air with low oxygen flue gases, the burner has to be downrated to compensate for the reduced weight of oxygen flowing through it.

You'll also suffer an additional capacity loss because the flue gas/combustion air mixture is at elevated temperature.

LOSS OF THE BURNER STABILITY AND FLEXIBILITY

The FGR system can be increase the emissions of he carbon monoxide and unburned hydrocarbons.

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P190/M-LX-FGR-EL

MODEL		GAS P190/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	320/900-1900
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	372/1046-2209
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	37,5/105-222
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train D2"-S NATURAL GAS ***	[mbar]	102
Maximum pressure at the entry of valves (Pe. max)	[mbar]	360
Nominal electric power	[kW]	4.5
Fan motor	[kW]	4
Nominal fan motor current absorption	[A]	9.6
Nominal auxiliary absorption	[A]	0.7
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40
Noisiness **** min. - max.	[dB(A)]	79-82
Burner weight	[kg]	140

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

**** Measured sonorous pressure in the laboratory combustion, with functional burner on beta boiler to 1 metre of distance (UNI EN ISO 3746 law).

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P250/M-LX-FGR-EL

MODEL		GAS P250/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	400/1000-2317
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	465/1163-2694
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	47/117-271
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train D2"-S-F2" NATURAL GAS ***	[mbar]	73.5
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	6
Fan motor	[kW]	5.5
Nominal fan motor current absorption	[A]	12.3
Nominal auxiliary absorption	[A]	0.7
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40
Noisiness **** min. - max.	[dB(A)]	81-85
Burner weight	[kg]	150

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

**** Measured sonorous pressure in the laboratory combustion, with functional burner on beta boiler to 1 metre of distance (UNI EN ISO 3746 law).

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P300/M-LX-FGR-EL

MODEL		GAS P300/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	400/1200-2815
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	465/1395-3273
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	47/140-329
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train D2"-S-F2" NATURAL GAS ***	[mbar]	113.5
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	8
Fan motor	[kW]	7.5
Nominal fan motor current absorption	[A]	15.8
Nominal auxiliary absorption	[A]	0.7
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40
Noisiness **** min. - max.	[dB(A)]	81-85
Burner weight	[kg]	152

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

**** Measured sonorous pressure in the laboratory combustion, with functional burner on beta boiler to 1 metre of distance (UNI EN ISO 3746 law).

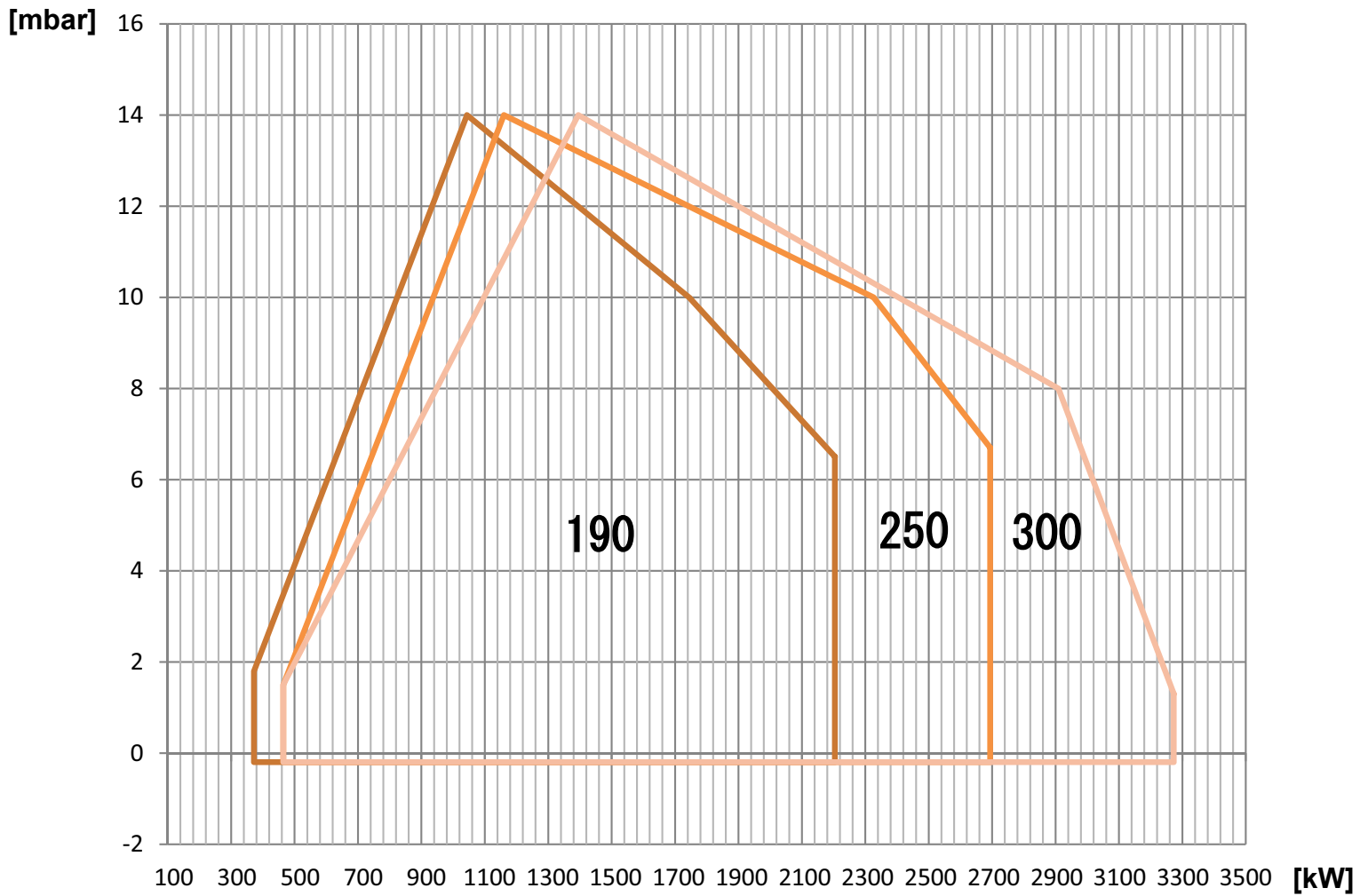


Fig. 4 X = Thermal power Y = Pression in the combustion chamber

The firing rates has been obtained based on test boilers in accordance with EN267 standards and are indicative of matching the burner to the boiler. For the correct operation of the burner, combustion chamber dimensions must be in accordance with current regulation. In case of non-compliance, contact the manufacturer.

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P350/M-LX-FGR-EL

MODEL		GAS P350/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	400/1200-3500
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	465/1395-4070
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	47/140-409
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train D2"-S-F2" NATURAL GAS ***	[mbar]	135
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	9.5
Fan motor	[kW]	9
Nominal fan motor current absorption	[A]	18.6
Nominal auxiliary absorption	[A]	0.6
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P450/M-LX-FGR-EL

MODEL		GAS P450/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	500/1600-4500
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	581/1860-5232
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	58/187-526
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train DN65-S-F65 NATURAL GAS ***	[mbar]	118.4
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	11.5
Fan motor	[kW]	11
Nominal fan motor current absorption	[A]	24.8
Nominal auxiliary absorption	[A]	0.6
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P550/M-LX-FGR-EL

MODEL		GAS P550/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	600/2000-5014
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	698/2325-5830
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	70/235-586
Fuel: NATURAL GAS (second family)		
Fuel category:		I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:		-15...+40°C / -20...+70°C, rel. humidity max. 80%
Max. temperature combustion air	[°C]	60
Minimum pressure gas train DN65-S-F65 NATURAL GAS ***	[mbar]	147
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	19
Fan motor	[kW]	18.5
Nominal fan motor current absorption	[A]	36
Nominal auxiliary absorption	[A]	0.6
Power supply:		3~400V, 1N~230V - 50Hz
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

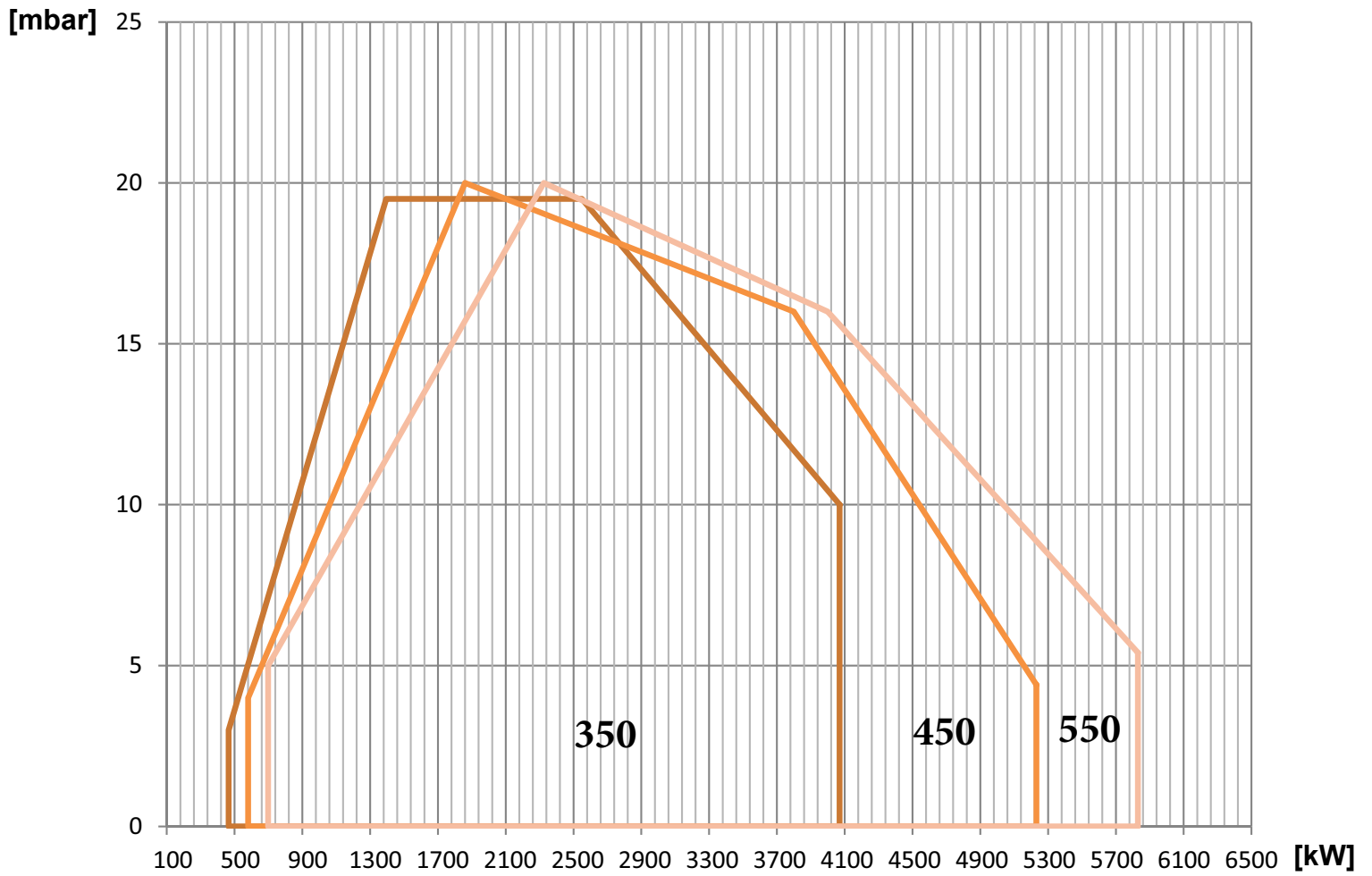


Fig. 5 X = Thermal power Y = Pression in the combustion chamber

The firing rates has been obtained based on test boilers in accordance with EN267 standards and are indicative of matching the burner to the boiler. For the correct operation of the burner, combustion chamber dimensions must be in accordance with current regulation. In case of non-compliance, contact the manufacturer.

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P750/M-LX-FGR-EL

MODEL		GAS P750/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	946/2580-7052
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	1100/3000-8200
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	111/301-825
Fuel: NATURAL GAS (second family)		
Fuel category:	I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B	
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:	-15...+40°C / -20...+70°C, rel. humidity max. 80%	
Max. temperature combustion air	[°C]	60
Minimum pressure gas train DN80-S-F80 NATURAL GAS ***	[mbar]	120.5
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	23
Fan motor	[kW]	22
Nominal fan motor current absorption	[A]	39
Nominal auxiliary absorption	[A]	0.6
Power supply:	3~400V, 1N~230V - 50Hz	
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P1000/M-LX-FGR-EL

MODEL		GAS P1000/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	1200/3400-9460
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	1395/3953-11000
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	140/398-1106
Fuel: NATURAL GAS (second family)		
Fuel category:		I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:		-15...+40°C / -20...+70°C, rel. humidity max. 80%
Max. temperature combustion air	[°C]	60
Minimum pressure gas train DN80-S-F80 NATURAL GAS ***	[mbar]	194.5
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	31
Fan motor	[kW]	30
Nominal fan motor current absorption	[A]	53
Nominal auxiliary absorption	[A]	0.6
Power supply:		3~400V, 1N~230V - 50Hz
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

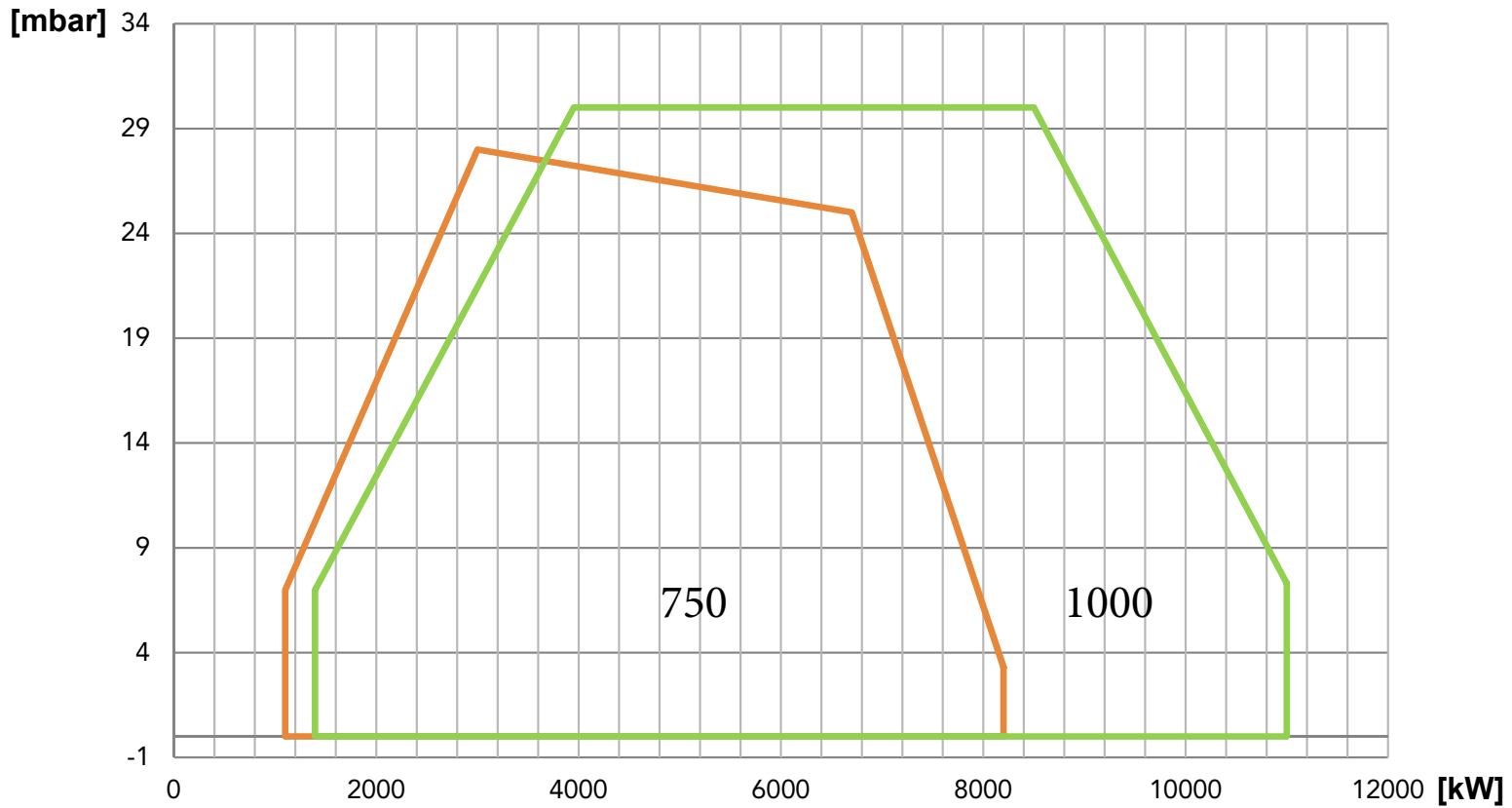


Fig. 6 X = Thermal power Y = Pression in the combustion chamber

The firing rates has been obtained based on test boilers in accordance with EN267 standards and are indicative of matching the burner to the boiler. For the correct operation of the burner, combustion chamber dimensions must be in accordance with current regulation. In case of non-compliance, contact the manufacturer.

TECHNICAL DATA AND OPERATING RANGE DIAGRAM GAS P1800/M-LX-FGR-EL

MODEL		GAS P1800/M-LX-FGR-EL
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[Mcal/h]	2000/5000-15000
Thermal power min. 1°st. / min. 2°st. - max. 2°st. *	[kW]	2325/5814-17442
Gas flow G20 (NATURAL GAS) min. 1°st. / min. 2°st. - max. 2°st. *	[Nm³/h]	233,6/584,1-1752,4
Fuel: NATURAL GAS (second family)		
Fuel category:		I2R,I2H,I2L,I2E,I2E+,I2Er,I2ELL,I2E(R)B
NOx **	[mg/kWh]	<30
Intermittent operation (min.1 stop every 24h), modulating		
Environmental conditions operation / storage:		-15...+40°C / -20...+70°C, rel. humidity max. 80%
Max. temperature combustion air	[°C]	60
Minimum pressure gas train DN100-S-F100 NATURAL GAS ***	[mbar]	278,4
Maximum pressure at the entry of valves (Pe. max)	[mbar]	500
Nominal electric power	[kW]	58
Fan motor	[kW]	55
Nominal fan motor current absorption	[A]	97
Nominal auxiliary absorption	[A]	0.6
Power supply:		3~400V, 1N~230V - 50Hz
Electric protection degree:		IP 40

* Reference conditions: Environment temperature 20°C - Barometric pressure 1013 mbars - Altitude 0 metre (sea level).

** To obtain this low Nox emission like in the declaration, it's necessary to couple the burner to the proper boiler for this application: boilers with 3 turns for the exhaust gas, condensing boilers and any generator with direct exhaust outlet and the thermal load isn't higher then 1,8 MW/m³.

*** Minimal feeding-gas pressure to the gas train to get the maximum power of the burner, considering counter-pressure in combustion chamber of value 0 (zero).

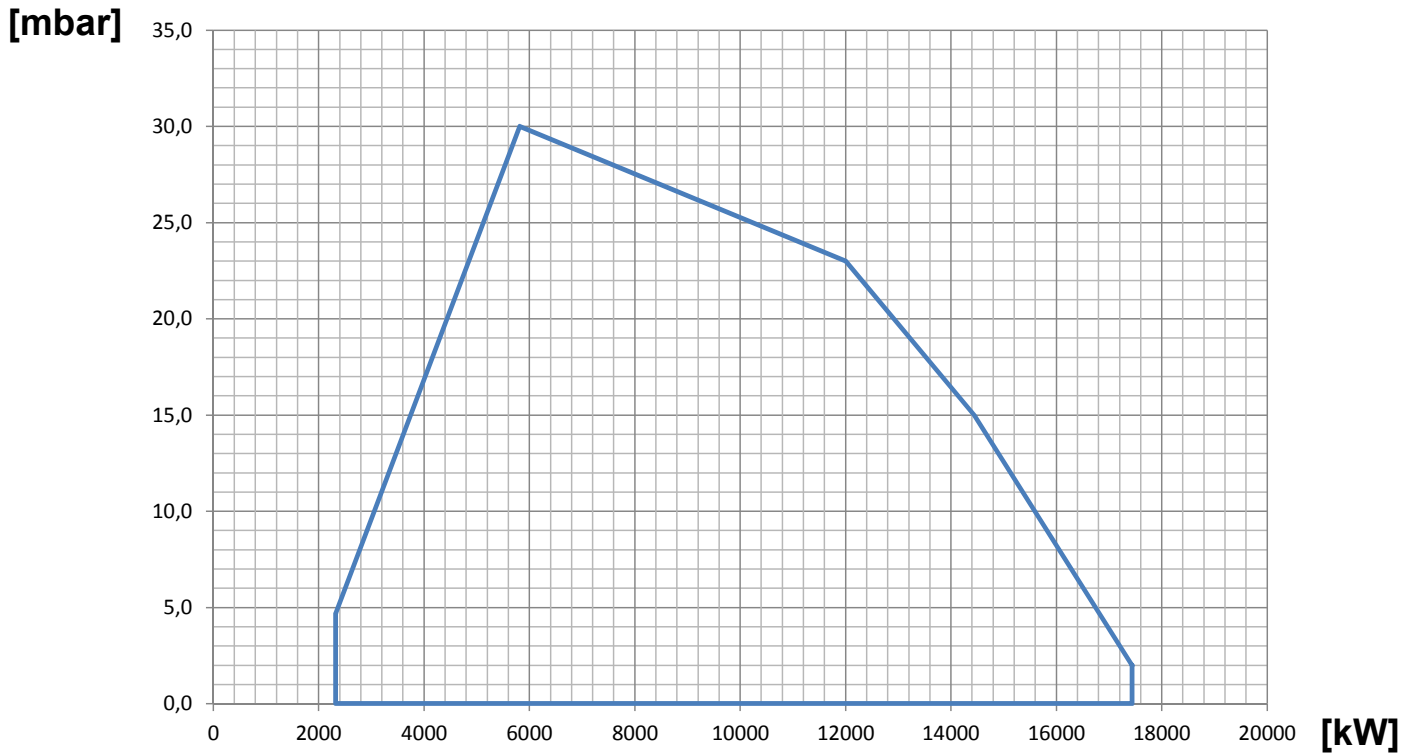


Fig. 7 X = Thermal power Y = Pression in the combustion chamber

The firing rates has been obtained based on test boilers in accordance with EN267 standards and are indicative of matching the burner to the boiler. For the correct operation of the burner, combustion chamber dimensions must be in accordance with current regulation. In case of non-compliance, contact the manufacturer.

DIMENSIONS GAS P190/M-LX-FGR-EL [MM]

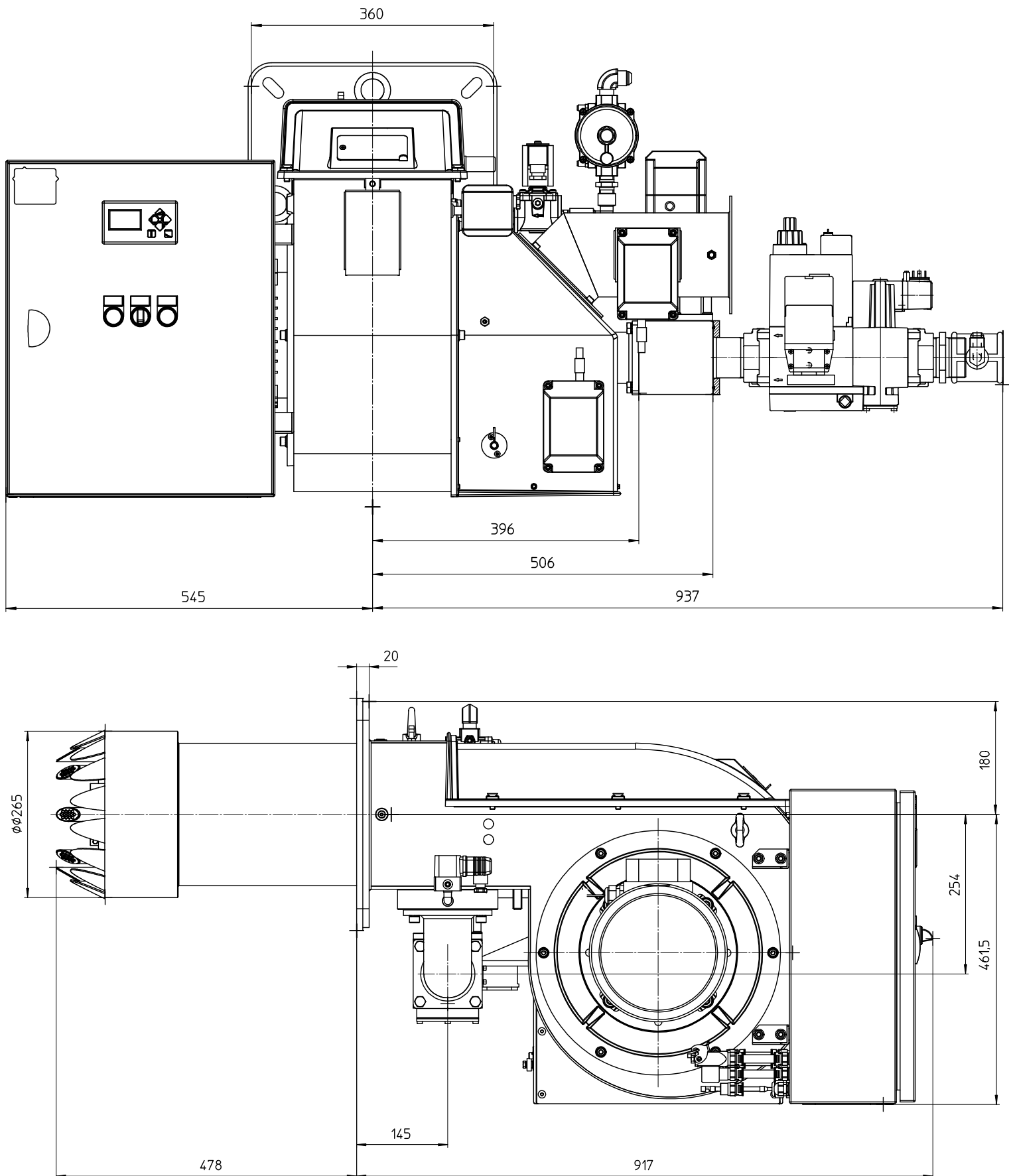


Fig. 8 Dimensions GAS P190/M-LX-FGR-EL

DIMENSIONS GAS P250/M-LX-FGR-EL [MM]

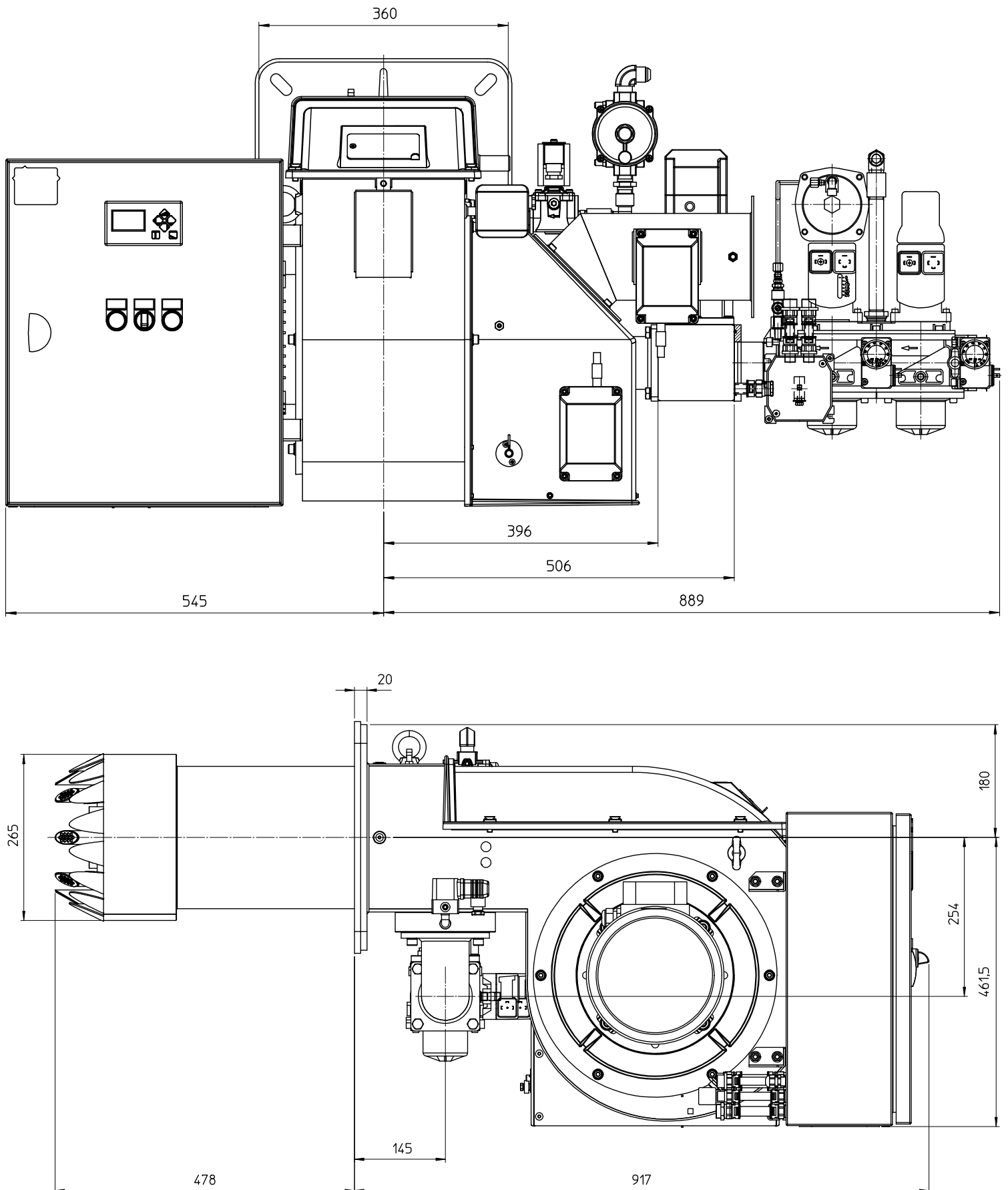


Fig. 9 Dimensions GAS P250/M-LX-FGR-EL

DIMENSIONS GAS P300/M-LX-FGR-EL [MM]

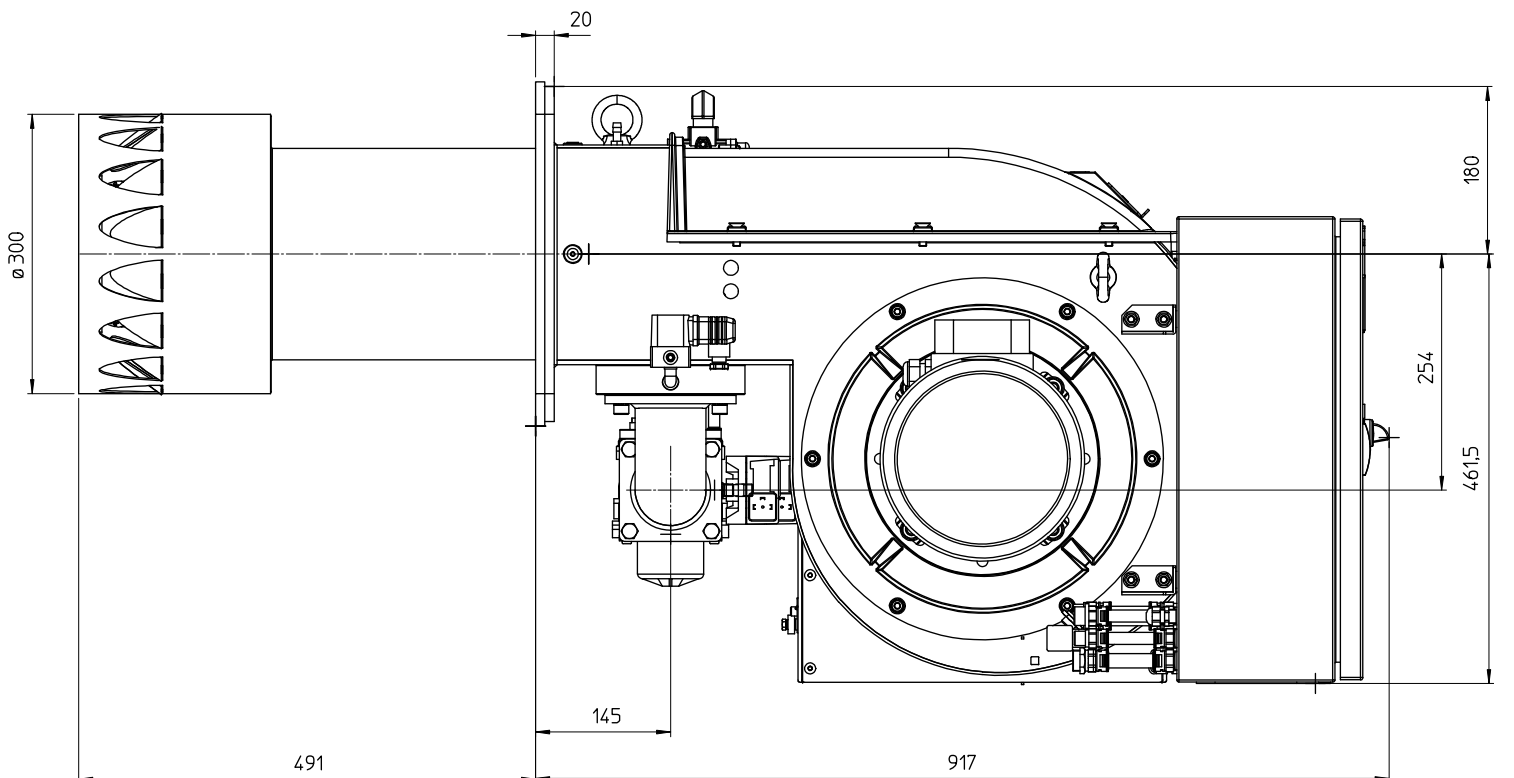
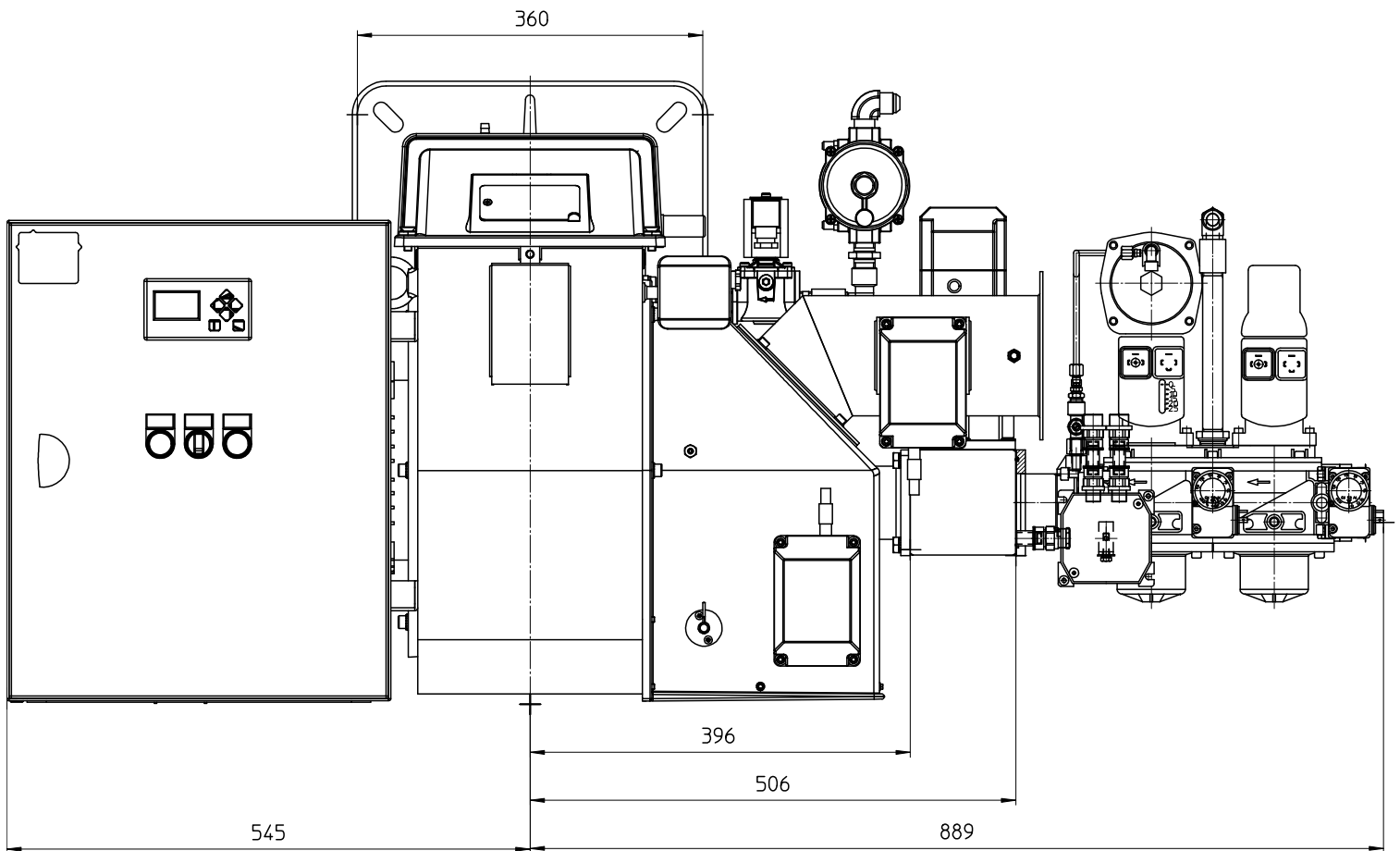


Fig. 10 Dimensions GAS P300/M-LX-FGR-EL

DIMENSIONS GAS P350/M-LX-FGR-EL [MM]

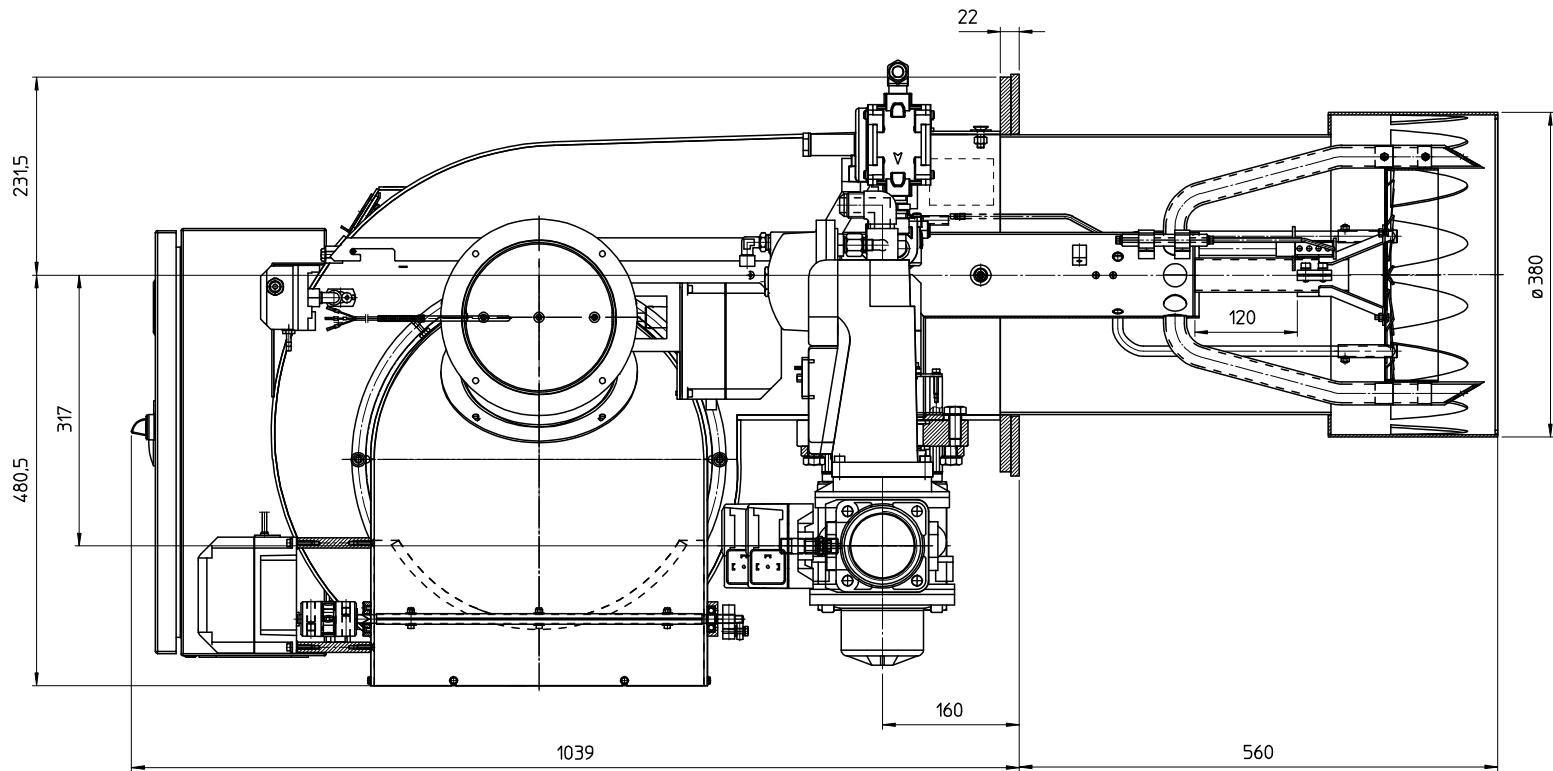
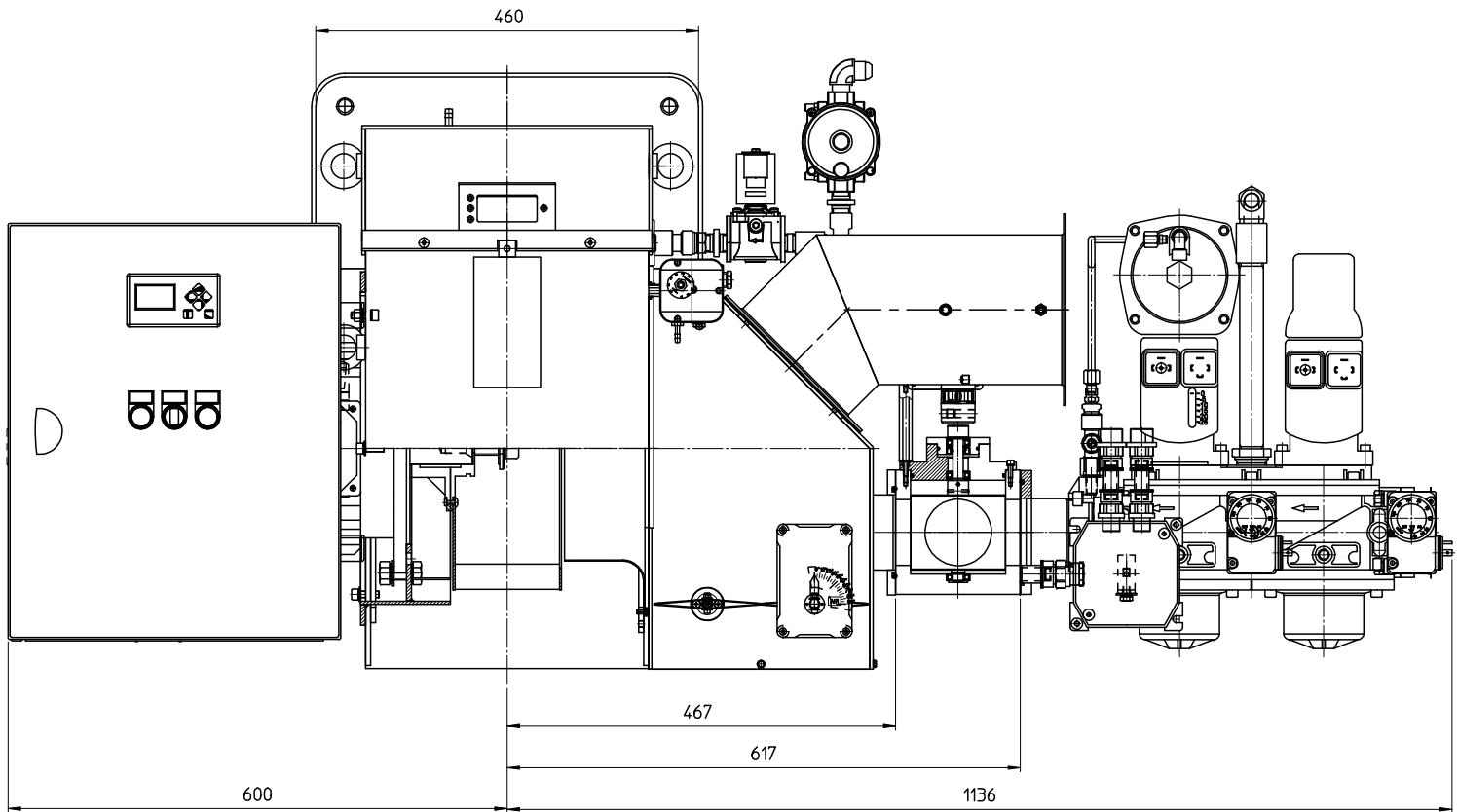


Fig. 11 Dimensions GAS P350/M-LX-FGR-EL

DIMENSIONS GAS P450/M-LX-FGR-EL [MM]

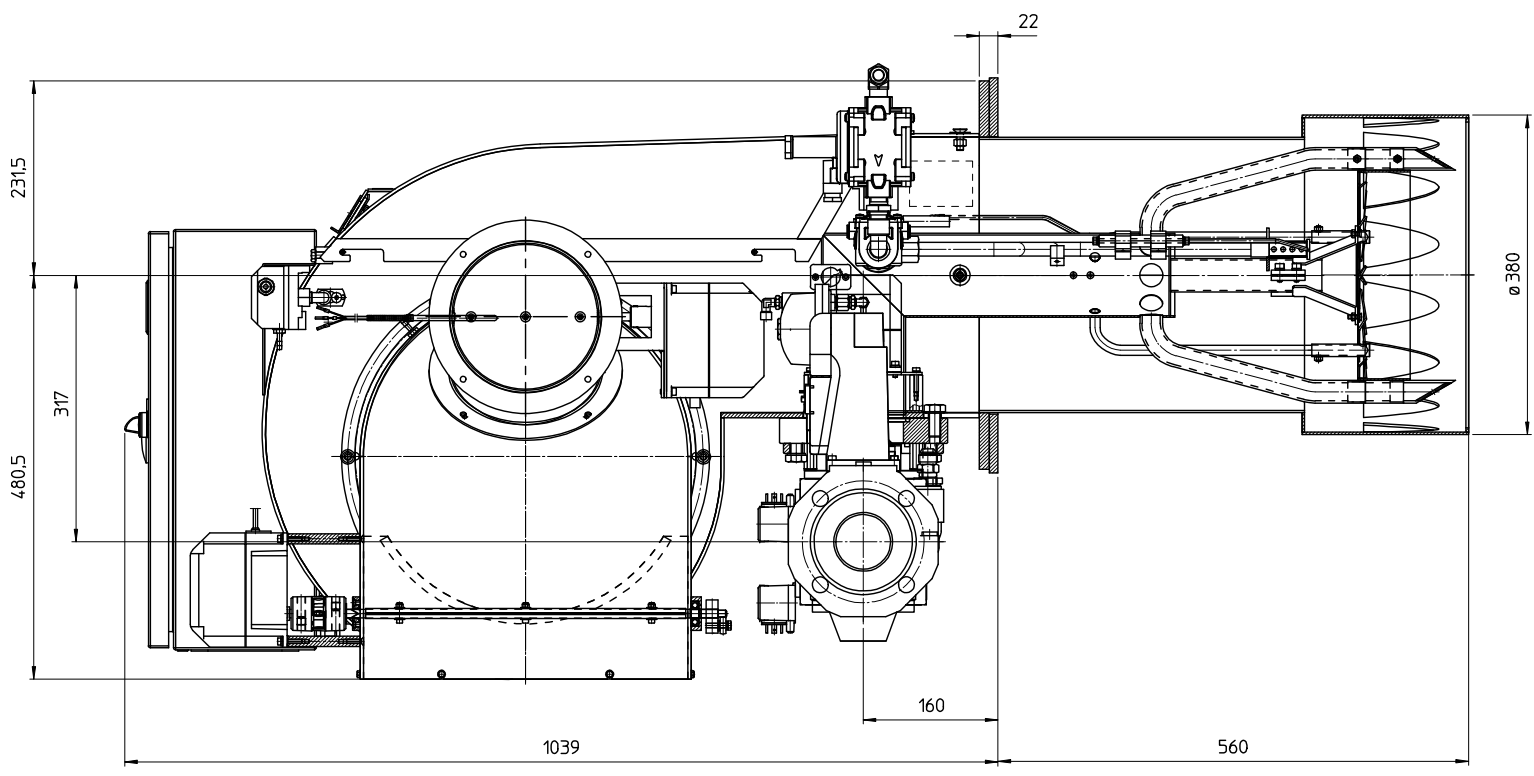
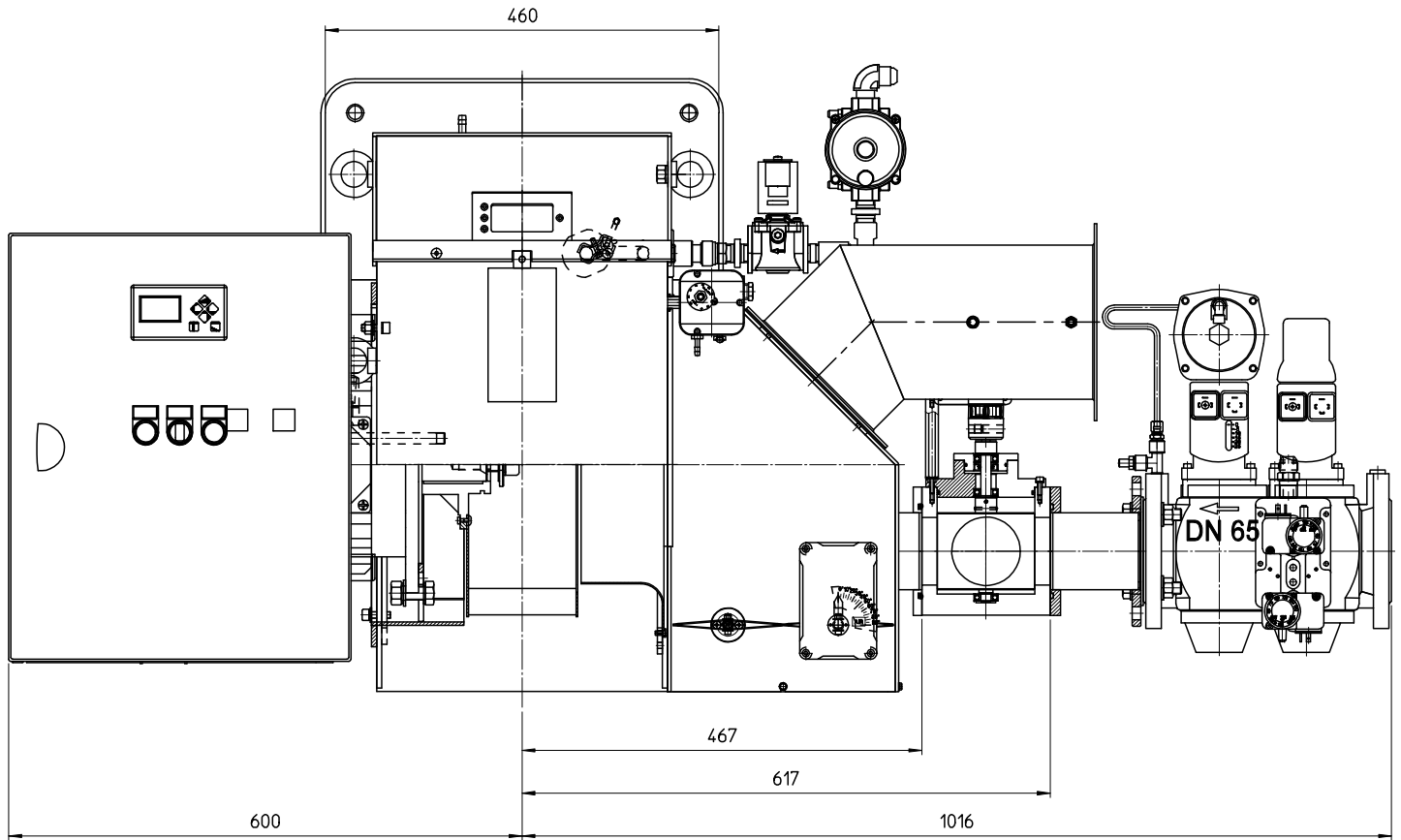


Fig. 12 Dimensions GAS P450/M-LX-FGR-EL

DIMENSIONS GAS P550/M-LX-FGR-EL [MM]

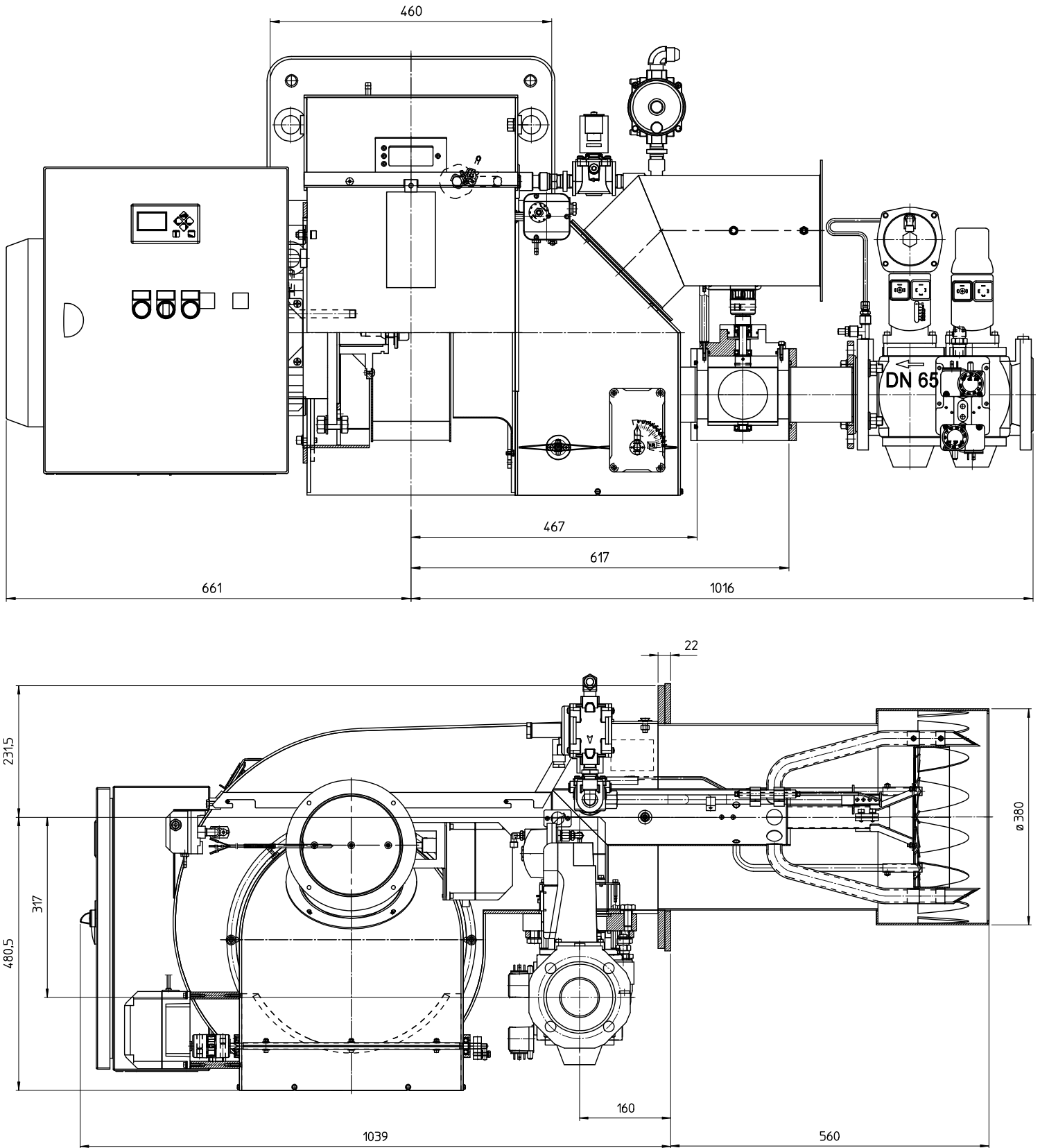


Fig. 13 Dimensions GAS P550/M-LX-FGR-EL

DIMENSIONS GAS P750/M-LX-FGR-EL [MM]

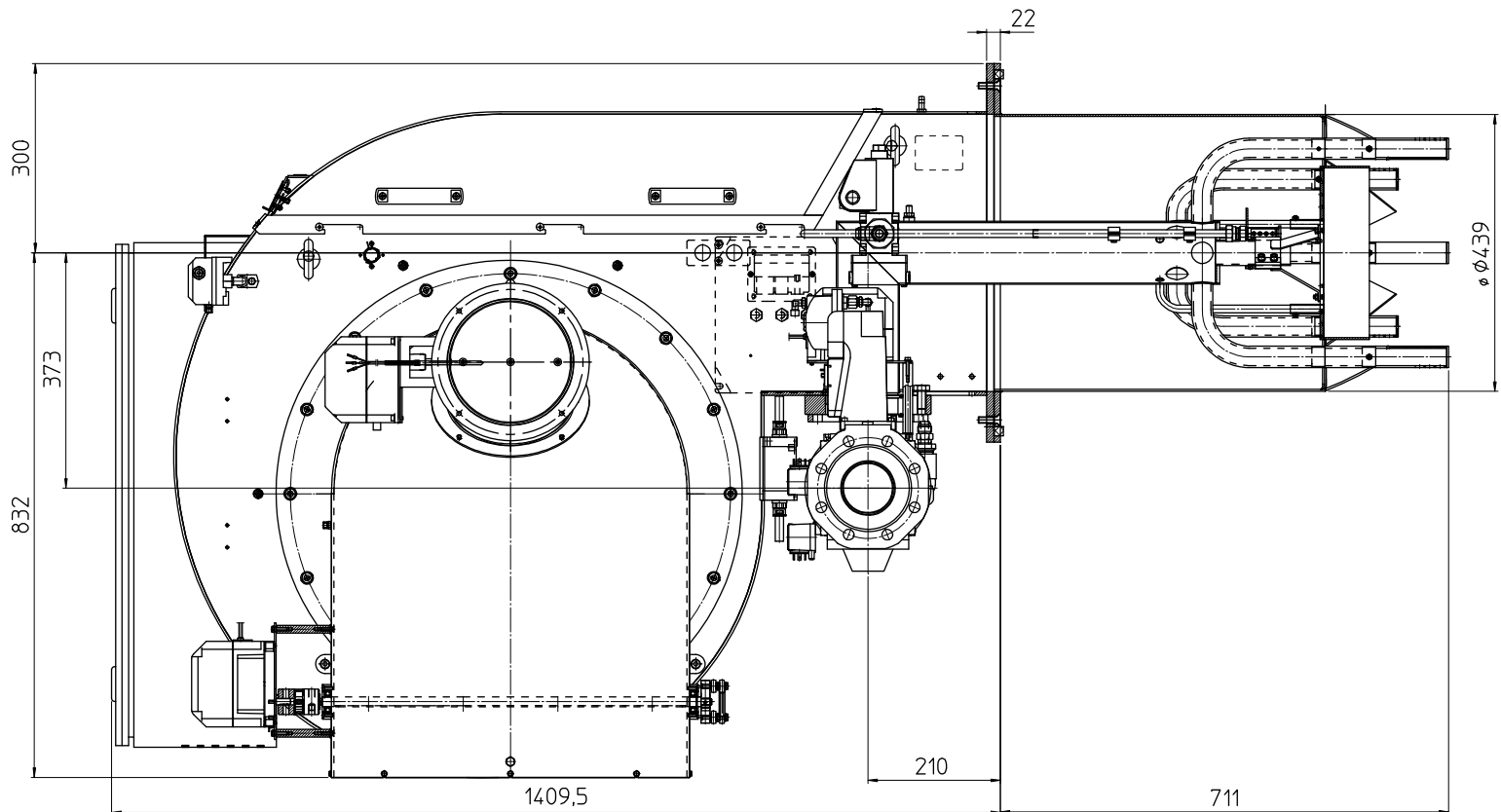
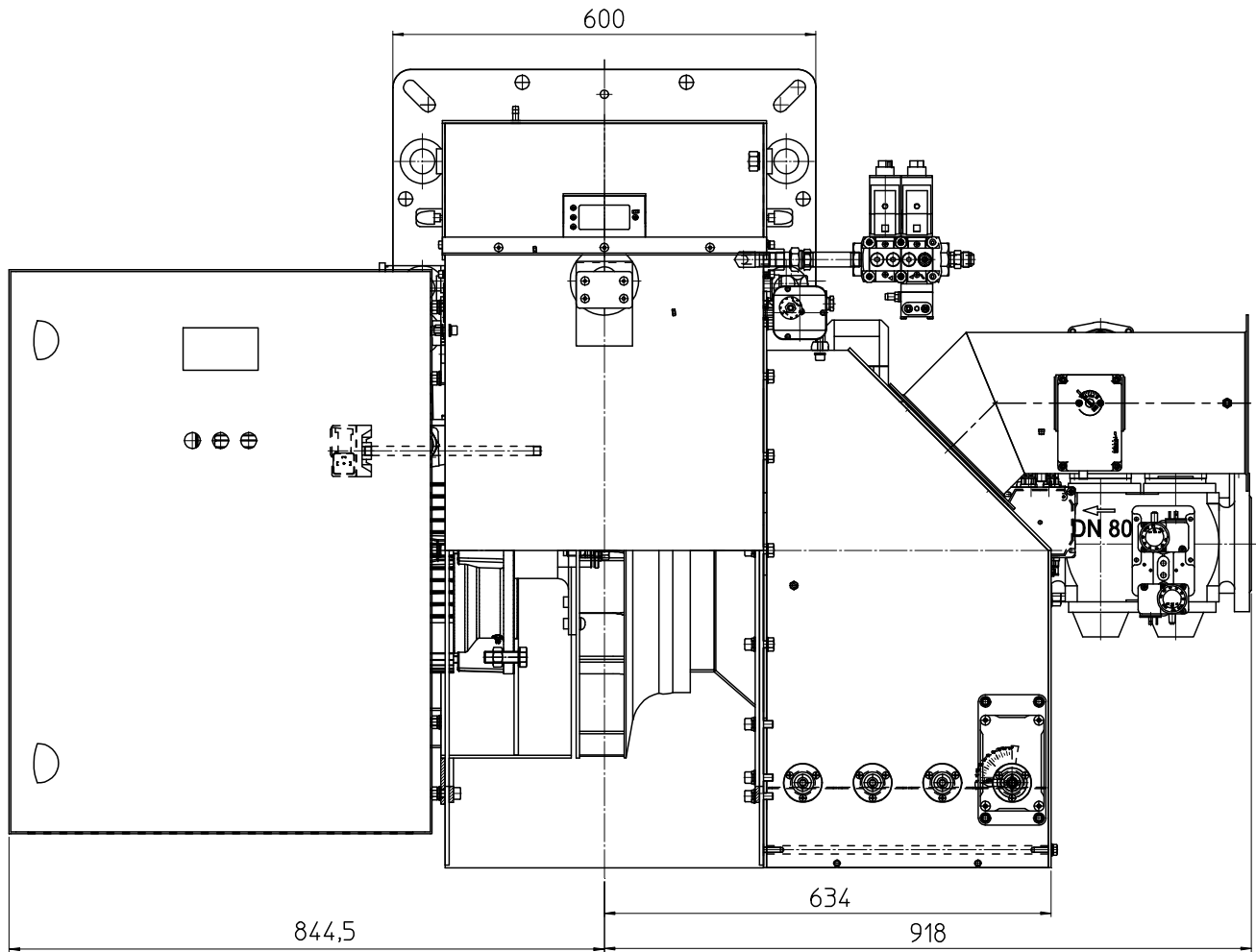


Fig. 14 Dimensions GAS P750/M-LX-FGR-EL

DIMENSIONS GAS P1000/M-LX-FGR-EL [MM]

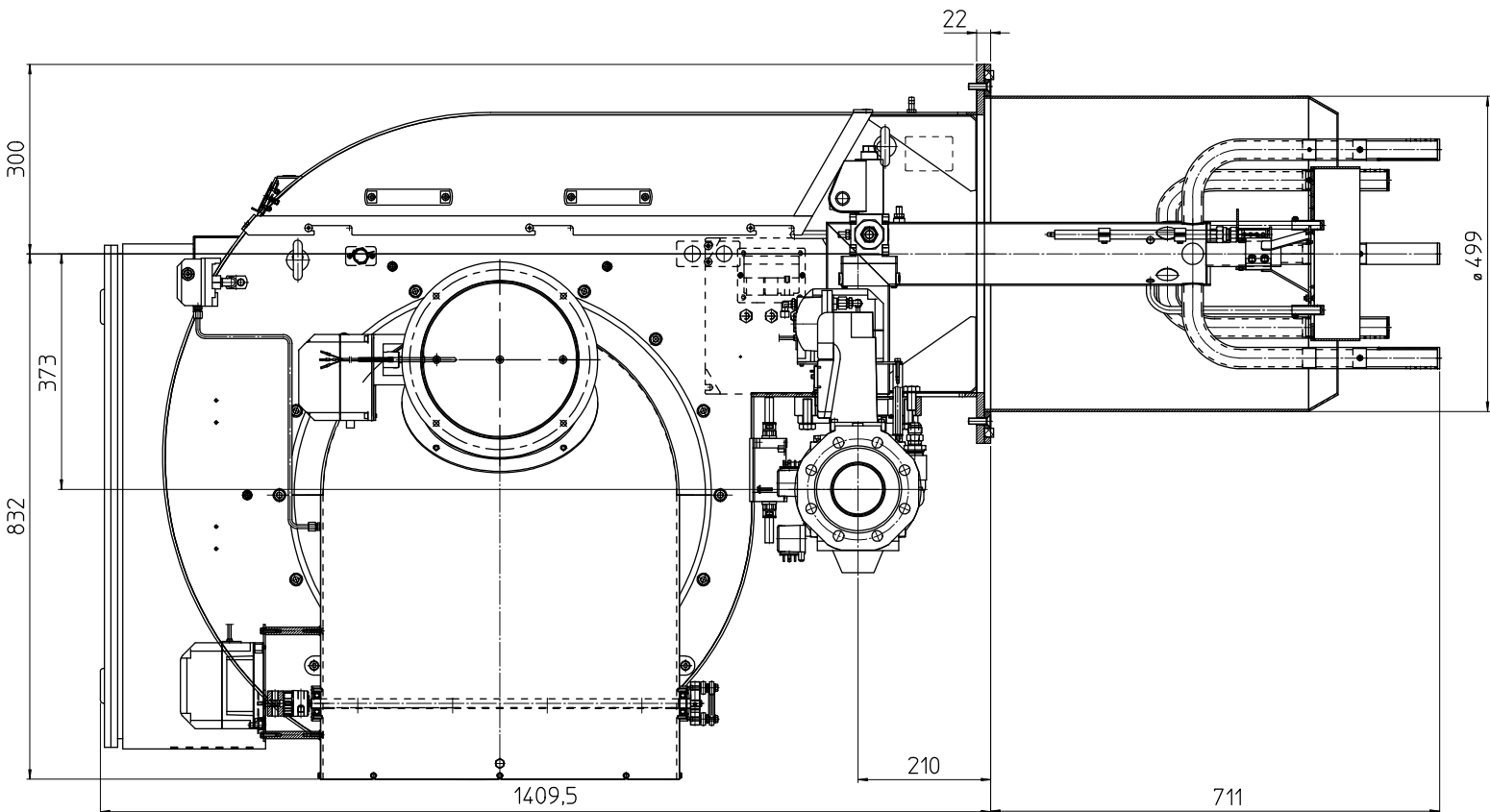
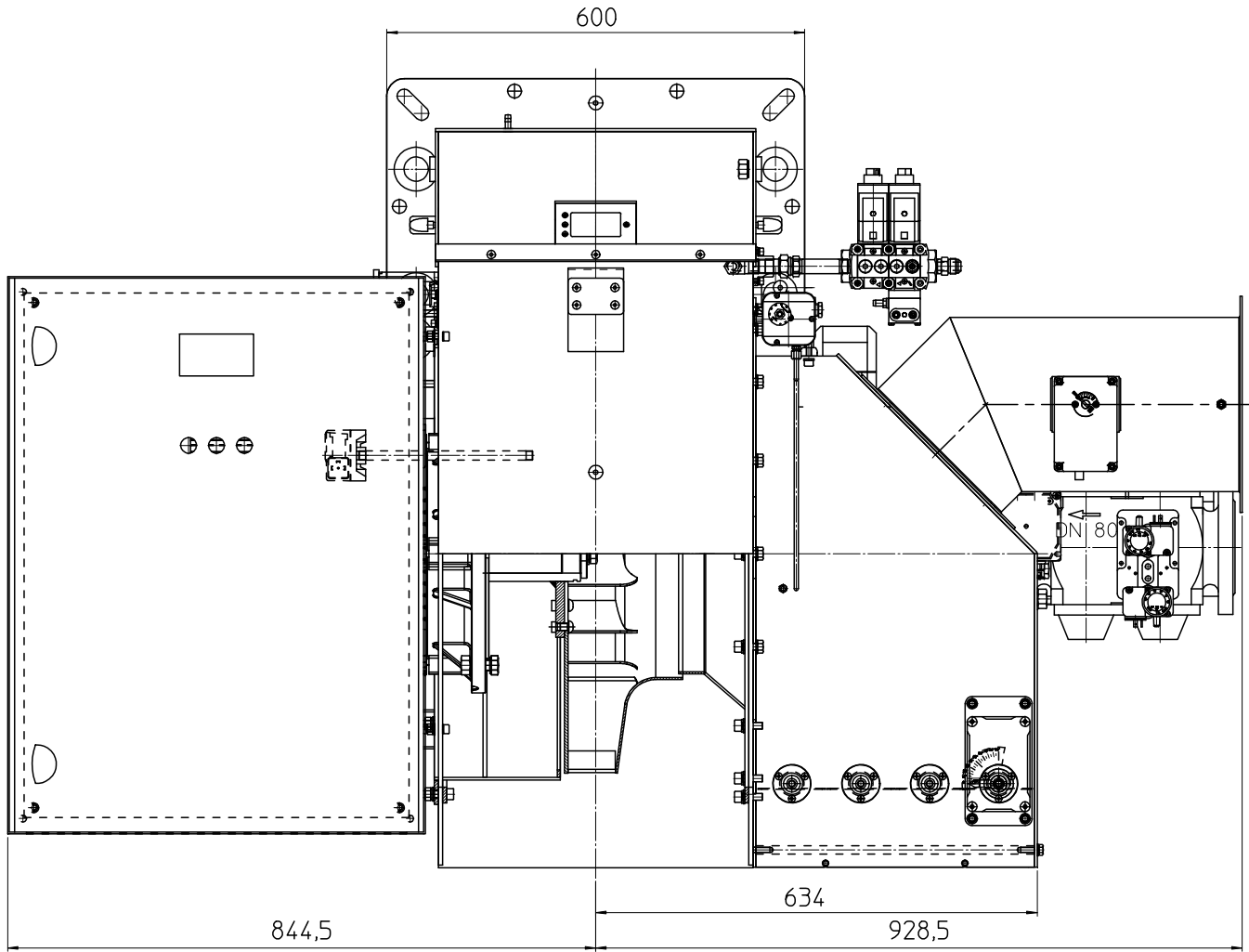


Fig. 15 Dimensions GAS P1000/M-LX-FGR-EL

DIMENSIONS GAS P1800/M-LX-FGR-EL [MM]

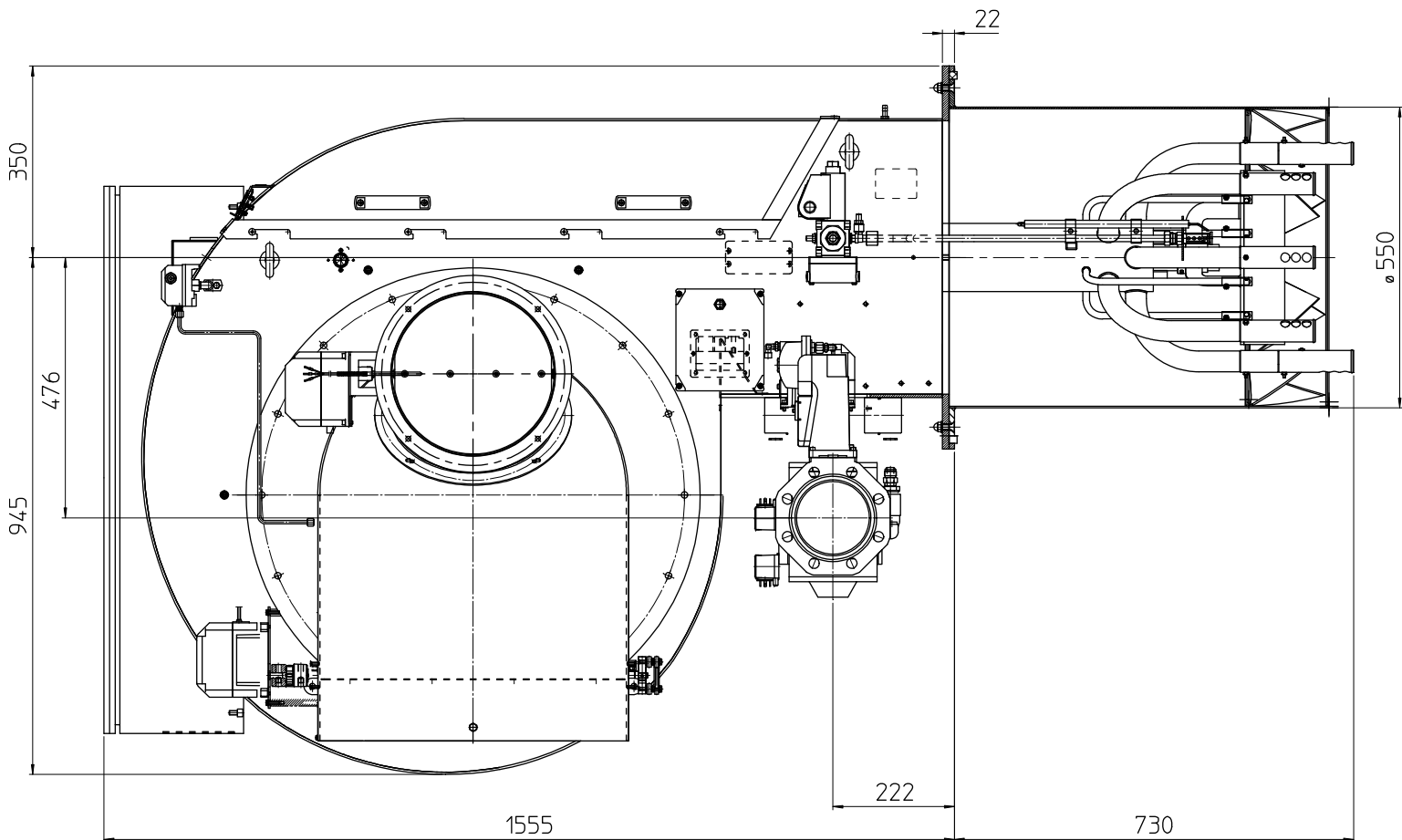
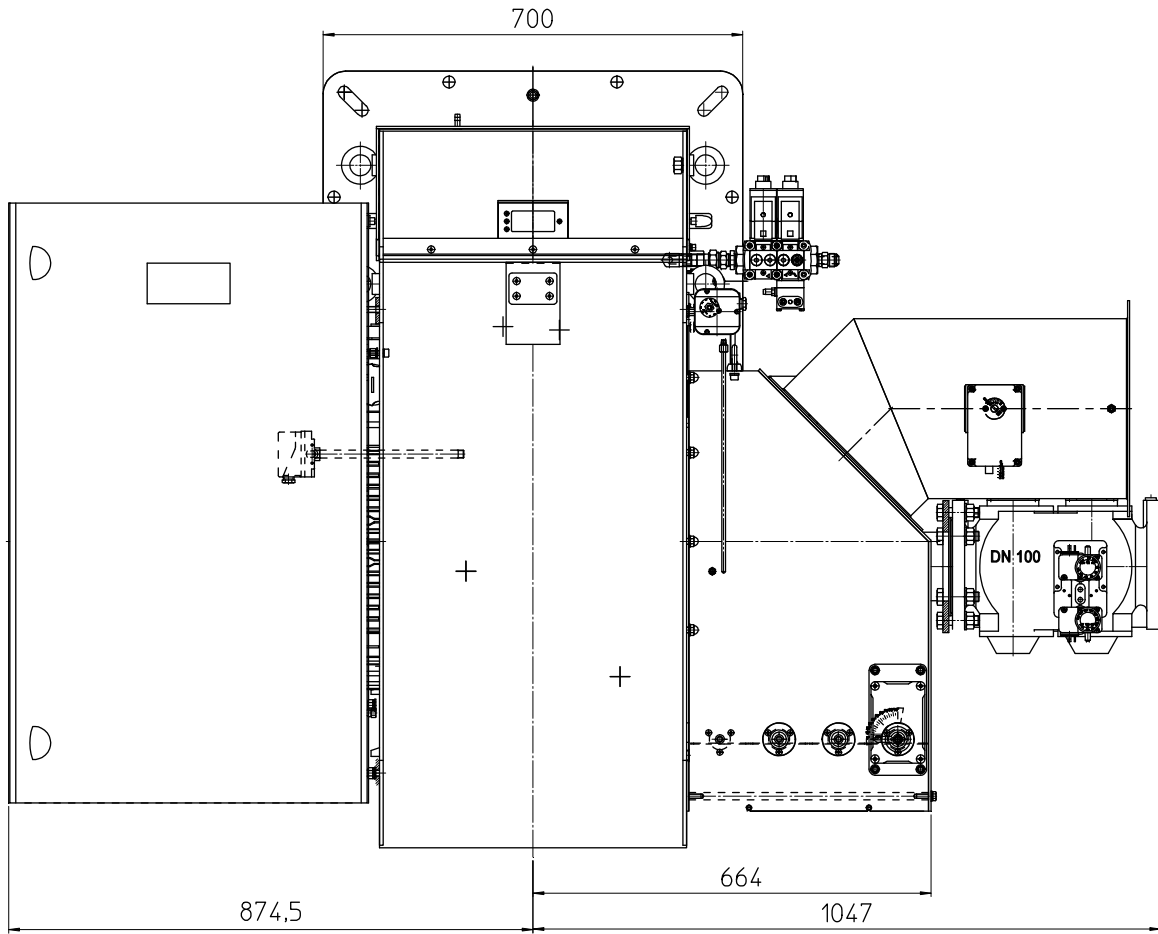
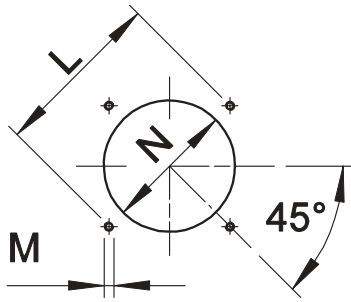


Fig. 16 Dimensions GAS P1800/M-LX-FGR-EL



* Suggested dimension of connection between burner and generator.

Fig. 17 Boiler plate

MODEL		L min	L *	L max	M	N min	N *	N max
GAS P190/M-LX-FGR-EL	mm	396	424	438	M14	280	280	320
GAS P250/M-LX-FGR-EL	mm	396	424	438	M14	280	280	320
GAS P300/M-LX-FGR-EL	mm	396	424	438	M14	310	310	320
GAS P350/M-LX-FGR-EL	mm	552	552	580	M14	390	400	450
GAS P450/M-LX-FGR-EL	mm	552	552	580	M14	390	400	450
GAS P550/M-LX-FGR-EL	mm	552	552	580	M14	390	400	450
GAS P750/M-LX-FGR-EL	mm	707	778	778	M16	450	460	540
GAS P1000/M-LX-FGR-EL	mm	707	778	778	M16	510	520	540
GAS P1800/M-LX-FGR-EL	mm	806	890	890	M18	560	560	630

FLAME TUBE LENGTH

Flame tube length must be selected based on the specifications supplied by boiler manufacturer and, in any case, it must be greater than the thickness of the boiler door included its insulation.

In case of boilers with flame inversion or front flue combustion chambers, it is necessary to insulate the area between the flame tube and front door with refractory material. This protection material must not impede flame tube extraction.

MODEL		TL **
GAS P190/M-LX-FGR-EL	mm	478
GAS P250/M-LX-FGR-EL	mm	478
GAS P300/M-LX-FGR-EL	mm	491
GAS P350/M-LX-FGR-EL	mm	560
GAS P450/M-LX-FGR-EL	mm	560
GAS P550/M-LX-FGR-EL	mm	560
GAS P750/M-LX-FGR-EL	mm	658
GAS P1000/M-LX-FGR-EL	mm	550
GAS P1800/M-LX-FGR-EL	mm	685

** For different flame lengths, please contact our Technical-Sales Department.

BURNER CONTROL PANEL GAS P190/M-LX-FGR-EL ÷ GAS P1000/M-LX-FGR-EL

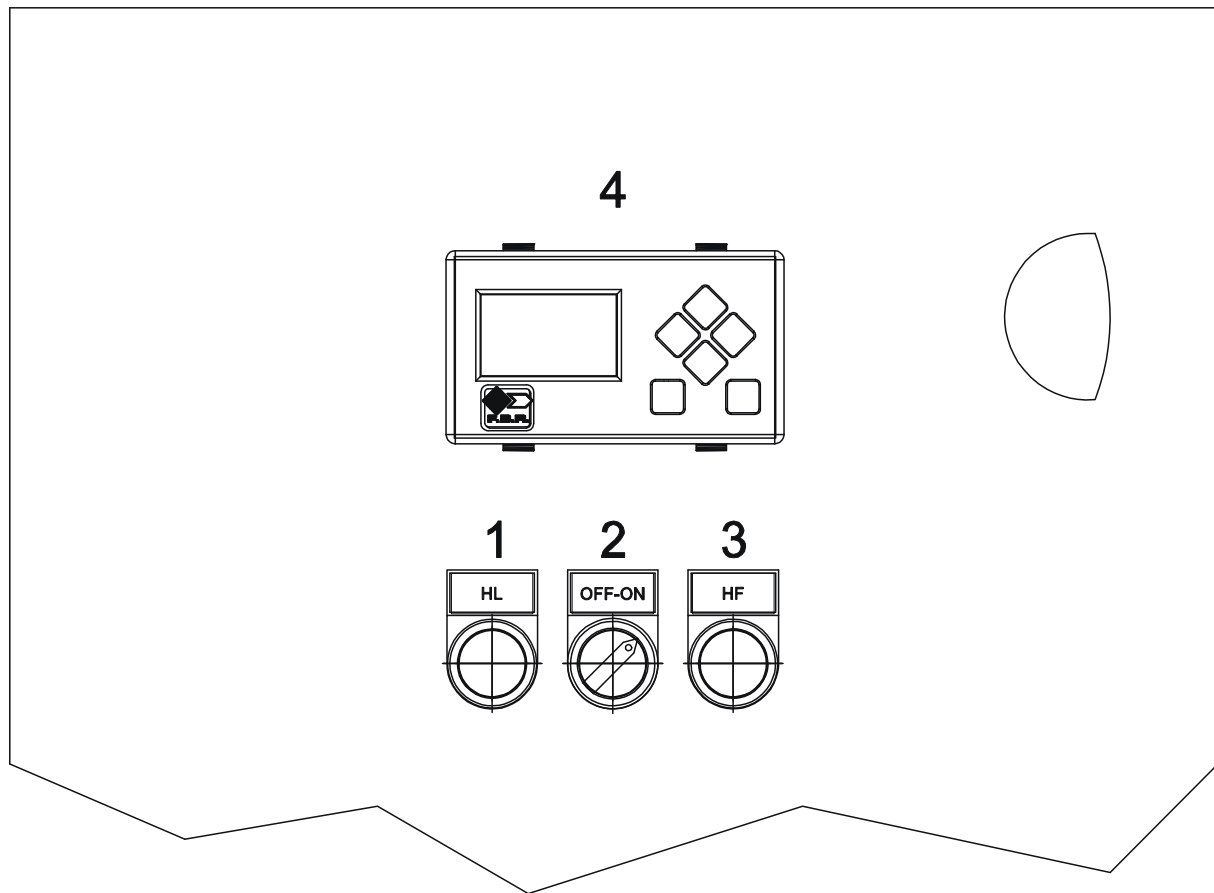


Fig. 18 Burner control panel GAS P190/M-LX-FGR-EL ÷ GAS P1000/M-LX-FGR-EL

LEGEND

- 1) HL: line lamp
- 2) OFF-ON: OFF-ON switch
- 3) HF: operation lamp
- 4) Display

BURNER CONTROL PANEL GAS P1800/M-LX-FGR-EL

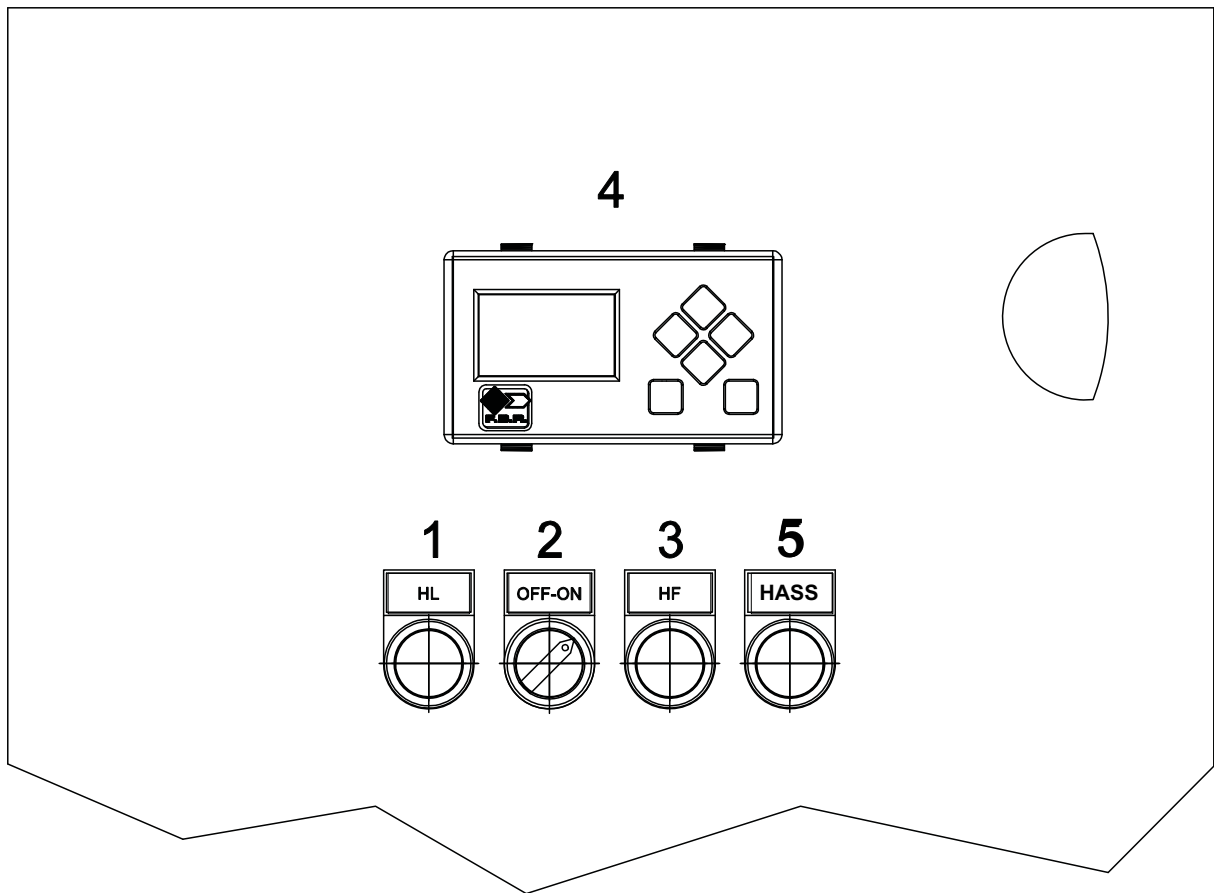


Fig. 19 Burner control panel GAS P1800/M-LX-FGR-EL

LEGEND

- 1) HL: line lamp
- 2) OFF-ON: OFF-ON switch
- 3) HF: operation lamp
- 4) Display
- 5) HASS: Soft-starter fault lamp

PRODUCT SPECIFICATION**SHORT DESCRIPTION**

Burners for gas modulating (PID fully modulating) equipped with electronic control box LAMTEC BT3.

DETAILED SPECIFICATION

Burners for gas modulating (PID fully modulating) equipped with electronic control box LAMTEC BT3; composed by:

- Steel burner frame;
- Fan at high pressurisation;
- Combustion head with adjustment at high performance and elevated flame stability equipped with steel blast tube and steel flame disc;
- Flange and insulating gasket for fixing at boiler;
- Three-phase power supply;
- For models GAS P190/M-LX-FGR-EL - GAS P250/M-LX-FGR-EL - GAS P300/M-LX-FGR-EL - GAS P350/M-LX-FGR-EL - GAS P450/M-LX-FGR-EL - GAS P550/M-LX-FGR-EL direct fan motor start:
- For models GAS P750/M-LX-FGR-EL - GAS P1000/M-LX-FGR-EL star/delta fan motor start;
- For model GAS P1800/M-LX-FGR-EL soft-starter for fan motor start;
- Safety air pressure switch to stop the burner in lock-out in case of failed or anomalous fan operation;
- For models GAS P250/M-LX-FGR-EL to GAS P1800/M-LX-FGR-EL gas train completely assembled and tested; complete of working valve class A, safety valve class A, minimum gas pressure switch, filter (supplied), leakage control pressure switch;
- For model GAS P190/M-LX-FGR-EL gas train completely assembled and tested; complete of working valve class A, safety valve class A, minimum gas pressure switch, filter (supplied), valve proving system (VPS);
- For models GAS P190/M-LX-FGR-EL to GAS P550/M-LX-FGR-EL pilot flame gas train with: filter, stabilizer and one solenoid valve;
- For models GAS P750/M-LX-FGR-EL to GAS P1800/M-LX-FGR-EL pilot flame gas train with: two solenoid valves;
- For model GAS P1800/M-LX-FGR-EL electrical panel fan for cooling;
- UV flame scanner for flame detection;
- IP 40 electric protection level;
- Servomotor for air shutter ;
- Servomotor for gas modulator;
- Servomotor for FGR shutter;
- Moving air shutter with total closure when idle in order to reduce at the least energy losses related to boiler cooling down;
- Easy extraction of combustion head without get off the burners by boiler;
- Maximum gas pressure switch to stop the burner in lock-out in case of the gas pressure is higher then the set point value;
- Output signal 4-20mA to verify the instantaneous load of the burner;
- 3 point step modulation with the possibility, thanks to appropriate modifications to the electrical wiring and to the programming of the control box, to have different type of modulation such as: Pt100 - Pressure probe - 4-20mA input signal;
- Pt100 probe to detect the flue gas temperature.

CONFORMING TO:

- CE rules;
- 2014/30/UE Directive E.M.C.;
- 2014/35/UE Directive L.V.;
- 2014/68/EU Directive M.D.;
- 97/23/CE Directive P.E.D.;
- 2009/142/CE Directive GAS;
- Reference rules: EN676 (gas) - EN746-2 (industrial thermoprocessing equipment).

STANDARD EQUIPMENT

- Isomart gasket;
- Flange with insulating gasket;
- Burner nameplate;
- Warranty;
- Instruction handbook for installation, use and maintenance.

OPTIONAL

- Temperature probe 0°C-400°C (PT 100 a 0° C);
- Temperature probe 0°C-1200°C (K probe);
- Pressure probe 0-3 bar, 0-6 bar. 0-16 bar, 0-20 bar, 0-30 bar;
- Noise protection;
- Antivibration couplings;
- Handle gas taps.