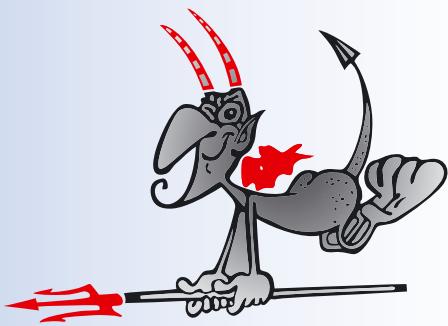


GB-GANZ
Tüzeléstechnikai Kft.



HANDBOOK FOR SELECTION WITH PRICES

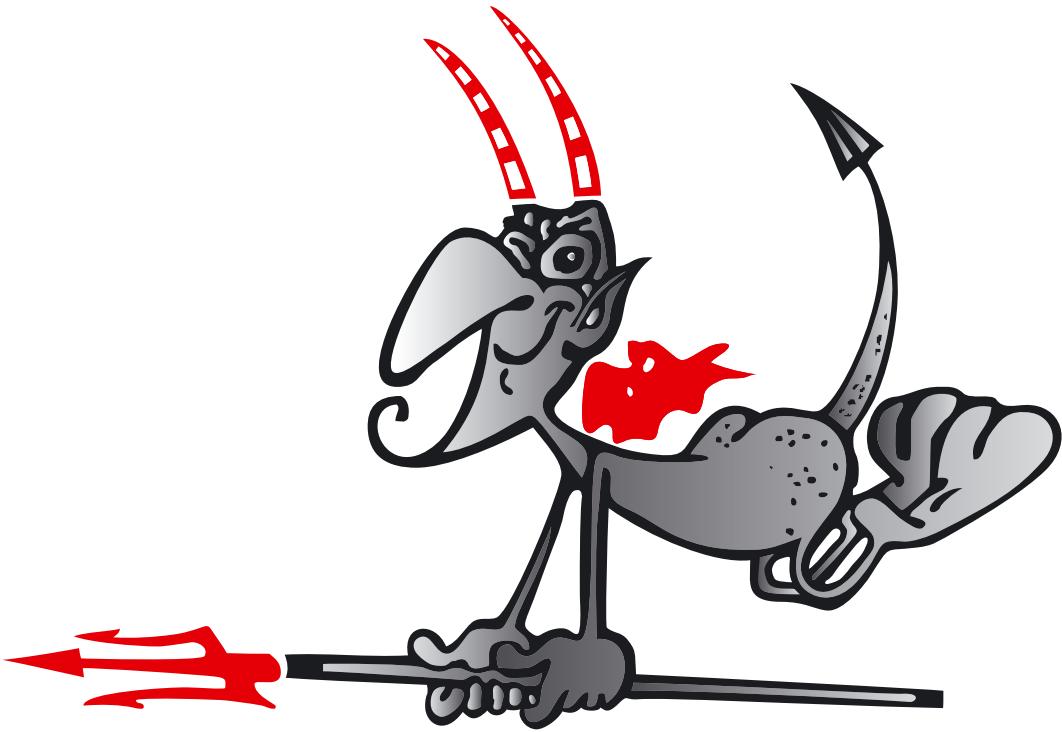


GAS BURNERS
OIL BURNERS
DUAL-FUEL BURNERS
BOILERS



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Our actual catalogue makes the 2009 one invalid. Prices are EXW-Budapest prices, without VAT. Transport and risk are to be discussed at every transaction.

This handbook serves only for information. We are continuously developing our products, so we keep the right for the modifications, based on the technical developing.

WHY IS IT WORTHY TO CHOOSE THE GB-GANZ PRODUCTS?

- Free technical and commercial consulting.
- 2 years guarantee.
- National and foreign service network.
- We take in consideration the special requests during manufacturing.
- Receiving the order we deliver the products and accessories in a short time.
- On the base of service contracts we provide continuous maintenance.

WHY IS IT NOT WORTHY TO CHOOSE THE GB-GANZ PRODUCTS?

- We can not say such an argument

Content



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1. INTRODUCTION

DEAR CLIENT!

The GB-GANZ Company is continuously developing its products, so that our buyers could have safe, economical and up-to-date combustion equipments. Our gas-, oil-, and dual-fuel burners can be mounted on steam-, hot-water-, and warmwater boilers, hot-air blowers, and all heating equipments, where the burner characteristics are conform to the nominal output and the furnace chamber pressure of the heating appliance.

We should like to help you in selecting the suitable burner type and version by this handbook, which also contains our catalogue prices for 2010. The prices refer to standard serie versions, but we can also supply non-standard version burners for special price. Dealers and installers can get certain discount. We organize regularly installing, repairing and maintenance courses where our partners are trained in the construction, running and adjusting of our products.

It is very important the exact burner selection in point of view of the further safe running. By the right burner selection we can protect the boiler from the excess thermal load, the combustion will be normally controlled, the boiler will run with good efficiency and on the required capacity. For this reason, we kindly ask you to fill accu-rately the data-sheet (page 60.) in, and placing an order. Our experts will offer the most suitable burner, which will be conform to your interest.

If the questions of the data-sheet will be answered correctly, burner selection will also be successful.

Special requirements are fulfilled after previous technical consulting. Special burner versions which are not found in this handbook, we can supply for extra prices.

From 450 kW capacity we can supply also alternative firing dual-fuel burners. Selecting the right type of such burner, please take into consideration both prescriptions, valid for gas-, and oil burners.

Main points of view of selection are the follows:

- nominal output and efficiency of the heating equipment
- furnace chamber pressure
- furnace chamber dimensions
- air-tube length
- mode of output control
- kind, quality and the pressure of the fuel (natural gas, LPG, fuel-oil)

Our gas burner constructions are conform to the EN-676 standards, and CE certified. Gas and dual-fuel burners are certified by SZU-Brno Czech Republic, oil-preheaters are certified by ÉMI-TÜV-Bayern.

Certificates of quality:



WHERE CAN YOU FIND US?



You can buy our products at the GB-GANZ plant, and at our foreigner representatives

GB-Ganz Tüzeléstechnikai Kft.

| | |
|-----------------------|--|
| Central address: | 1103 Budapest Szlávy u. 22-30. |
| Central phone number: | +36-1-260-2727 |
| Telefax: | +36-1-260-0033 |
| Sales Department: | +36-1-260-4184 |
| Home page: | www.gb-ganz.hu |
| E-mail: | gbganz@gb-ganz.hu |

The GB-GANZ Works' plant in Budapest and our foreign representatives



You can found the actual list of our partners on our website.



2. Gas burners, production range, construction, selection, price list

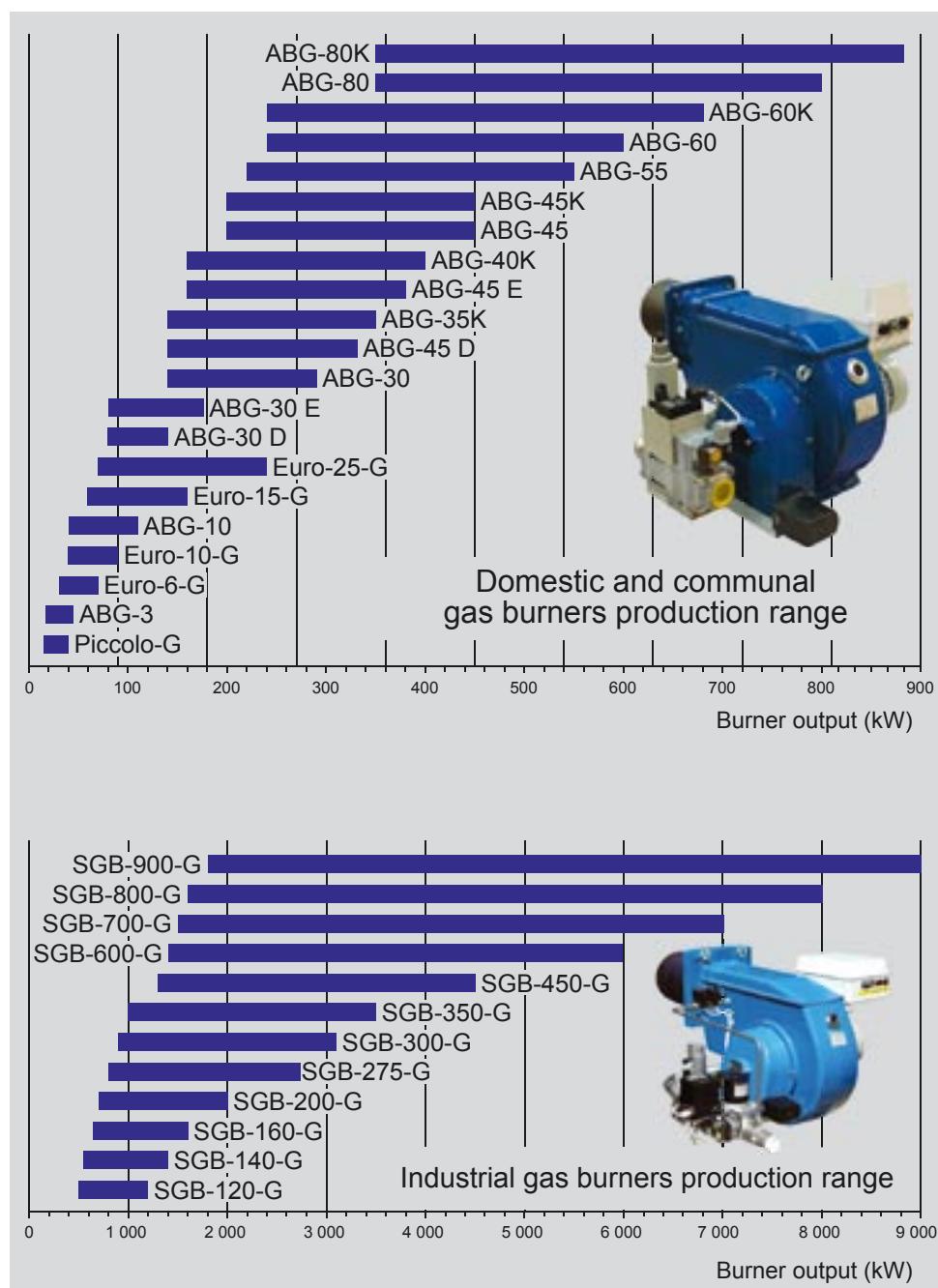


2.00 General informations.

Our firm is continuously developing the gas burners, for we could be able to offer up-to-date firing equipment of economical run and high efficiency. The fully automatically controlled burners are suitable for natural gas or LPG combustion. For special request we manufacture biogas burners too. By the user's request, mode of control could be: ON/OFF, HIGH/LOW fast load change, HIGH/LOW slow load change, or modulating, by the actual thermal requirement.

The burners can be mounted: on warm-water-, hot-water-, steam

2.01 Gas burner production range by output.





2.02 Construction.

Gas burners are divided into two groups: up to 880 kW domestic and communal gas burners, and over the latter output, industrial gas burners.

Domestic and communal gas burners are complete burner configurations, consisting the full gas train, and the primary burner control unit. Industrial burners' gas train consist of the main-, and safety gas valves, leakage control unit, and the gas pressure switches. Domestic and communal burners' gas trains include the filter and gas pressure governor, which units have to be ordered separately for industrial burners. See the respective connecting gas pressure ranges in the price list chapters.

Gas train size-range options as follows : 1", 1 1/4", 1 1/2", 2", DN 80 mm, DN 100 mm

Possible inlet gas pressure ranges in front of the gas train, depending on the burner output:

| | | |
|---------|----------------|---------------|
| $p_g =$ | 20 - 45 mbar | up to 45 kW |
| $p_g =$ | 20 - 200 mbar | up to 290 kW |
| $p_g =$ | 20 - 350 mbar | up to 880 kW |
| $p_g =$ | 30 - 500 mbar | up to 2000 kW |
| $p_g =$ | 40 - 500 mbar | up to 2750 kW |
| $p_g =$ | 100 - 500 mbar | up to 4500 kW |
| $p_g =$ | 150 - 500 mbar | over 4500 kW |

Block system industrial burners are supplied with the following elements as standard:

- command box or board with primary control unit in it
- over 1.600 kW capacity, pilot burner with his own solenoid gas valves
- combustion-air minimum pressure switch
- flame ignition equipment
- modulating output control appliance (at „M” controlled versions)
- HIGH/LOW slow load change control appliance (at „L” controlled versions)
- Flame detector (under 1.600 kW capacity ionization type, from 1.600 kW capacity UV system)
- Complete gas train configuration, but without pressure governor and filter.

For your information please find some maximum emission values of certain gas burners, measured on standard testing furnace chamber.

| | Natural gas | | LPG | |
|-----------------|-------------|---------------|-------------|---------------|
| | CO (mg/kWh) | *NOx (mg/kWh) | CO (mg/kWh) | *NOx (mg/kWh) |
| ABG-3 | 17 | 62 | 8 | 125 |
| ABG-10 | 10 | 86 | 18 | 174 |
| ABG-30 | 9 | 127 | 11 | 178 |
| ABG-45 | 9 | 141 | 16 | 158 |
| ABG-55/60/80 | 5 | 162 | 9 | 207 |
| SGB-120/140 | 14 | 148 | 10 | 227 |
| SGB-160/200 | 5 | 125 | 9 | 180 |
| SGB-275/300 | 8 | 148 | 12 | 240 |
| SGB-350/450 | 19 | 136 | 3 | 250 |
| SGB-600 | 0 | 170 | - | - |
| SGB-700/800/900 | 0 | 170 | - | - |

Please find information about the prescribed maximum and the measured average flue-gas emission values, in working circumstances:

| | | CO (mg/kWh) | *NO _x (mg/kWh) |
|--------------------|--|-------------|---------------------------|
| Natural gas firing | Prescribed maximum emission by E 676 standard | 100 | 170 |
| | Measured average emission | 28 | 123 |
| LPG firing | EN 676 szabvány szerint megengedett kibocsátás | 100 | 230 |
| | Measured average emission | 35 | 164 |

*Note: we have taken in consideration, that 5-10% of NO_x is NO₂, and 90-95% is NO. Data are valid at 3 % O₂, projecting at NO₂, and normal fume-gas volume.

Emission figures are valid at standard measuring circumstances and max 1 MW/m³ furnace chamber load.

Low NO_x (NO_x<100 mg/kWh) burners can be delivered on the base of previous technical consulting.



2.03 Selection.

For the right selection of the suitable burner type and version, we kindly ask you to fill the enclosed data-sheet (see page Nr. 56.) in. This data-sheet includes all needed parameters for the burner selection. In case of your furnace chamber type would be different from the given schemes, please enclose a drawing, with the main dimensions, together with your enquiry.

The most important parameters of the heating equipment are the follows: output, efficiency, furnace chamber pressure and dimensions. The burner symbols include the figures which refer to the burner nominal output. On the base of the requested burner output and the respective burner output – pressure characteristics, we select the suitable burner type. The burner output must be higher with a 10-15% , than the nominal output of the heating appliance, taking into consideration the efficiency of the latter. The burner output limits are determined by the characteristics, depending on the heating equipment's furnace chamber pressure value. On the base of the furnace chamber dimensions, the needed air-tube length can be determined. Burner air-tube length can be determined also by the boiler manufacturer, but we check it at order confirmation.

By the request of the client, we determine the burner's output control mode (modulating, HIGH/LOW slow load change, HIGH/LOW fast load change, ON/OFF). On the base of the required output, mode of out-put control, kind of fuel-gas (natural gas or LPG) and the inlet gas pressure we could select the suitable gas burner version from the price list.

Note: determining the industrial burner inlet gas pressure range, we have to draw from the pipe-line pressure the pressure drop of the following armatures: separate mounted gas pressure governor, filter, and the pipe line itself. The minimum gas pressure given in the industrial burner's type symbols has to be considered as measured pressure, behind the gas pressure governor or filter respectively. Many times there is a need for gas pressure governor or filter with higher DN than the gas train DN. Selecting the suitable gas pressure governor and filter, use the HUPF governors' and FM filters' pressure-drop characteristics (see page Nr. 55.) Maximum pressure-drop through the governor may be the half of the difference, between the inlet and controlled pressure. The prices of the burners do not include the following armatures: control units, thermostats, pressure switches, temperature or pressure remote transmitters etc. These are optionals, and have to be ordered separately for extra prices (see pages Nr. 53.)

2.04. Gas train characteristics

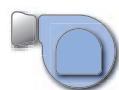
One of the main characteristics of the GB-GANZ burner constructions, is the compatibility with the wide range of the inlet gas pressures at the user's disposal. Buyers can find the suitable gas train size for the most different gas pressures. Gas train has to be selected on such a way, so that it would be conform to the gas pressure and the requested output. Gas train can be so called „multiblock”, or assembled of separate elements. We could offer suitable gas train configurations for different burner output control modes.

Gas train includes the following elements in every case: gas valves, required gas pressure switches, mechanical parts of the burner control system, gas leakage control unit (standard component from 1.200 kW capacity). We use two-stage gas valves on our HIGH/LOW fast load change output controlled burners (D2, L1). In this case one of the gas valves opens slowly, during the flame ignition procedure. In case of HIGH/LOW slow load change output controlled burners, gas volume control is made by burner head air pressure controlled gas valve with integrated gas/air ratio control in it, or two-shaft-ended servomotor driven butterfly air and gas dampers. At bigger industrial burners (over 3 MW) in case of connecting inlet pressure reaches the 100 mbar, but the gas pressure alternation is too high – between 100 and 150 mbar for example – we can supply our burners with gas pressure governor equipped gas valve, so that there is no need for additional gas pressure governor.

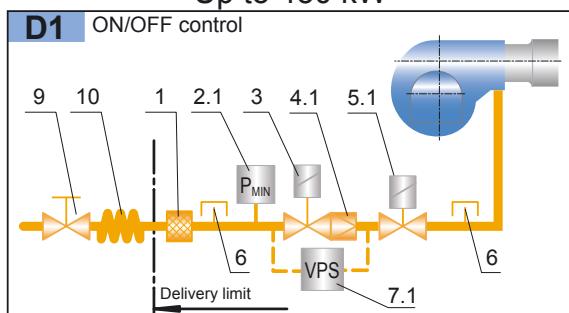
Possible control solutions of modulating output controlled burners:

- by pneumatic gas/air ratio control equipped gas valve (D3, L2)
- by two shaft ended servomotor driven excenter mechanism equipment (L3)
- by electronical gas/air ratio controlled servomotors, which govern the air and gas dampers (L4)
- by electronical gas/air ratio control system which commands the frequency-alternator equipped motor, for combustion-air volume control, and the servomotor which governs the gas volume control damper, integrated in the gas train (L4)

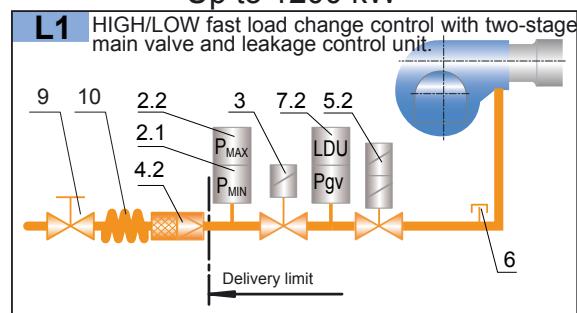
The standard SGB-600, -700, -800 and -900 type burners are equipped with electronical burner output control. For request we can supply our smaller capacity burners also with electronical output control. At both cases frequency converter controlled ventilator-fan speed is optional. We can also supply O2 trim control units, which are compatible with the supplied electronical burner output control unit. O2 trim control unit has to be ordered separately, for extra price.



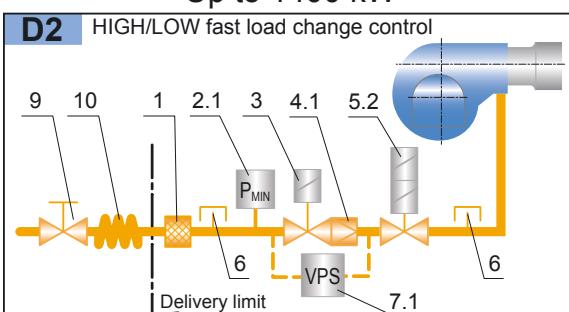
Up to 450 kW



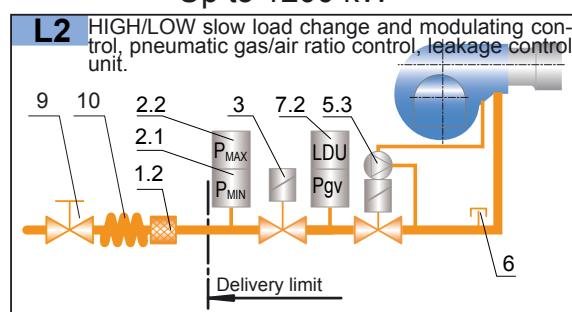
Up to 1200 kW



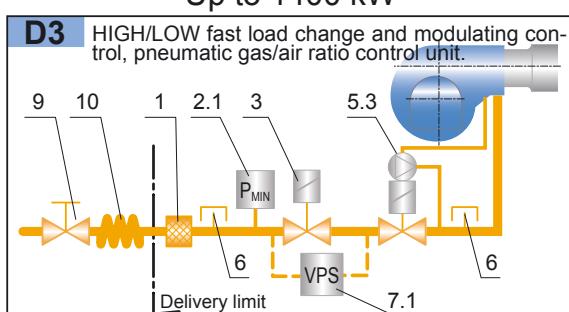
Up to 1400 kW



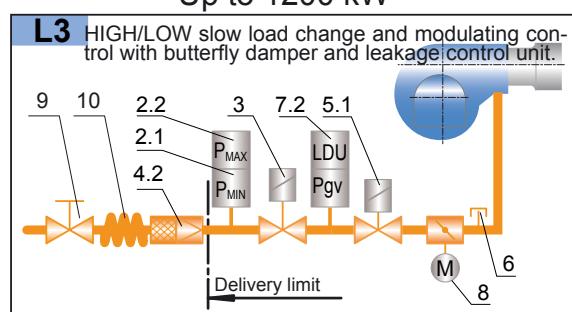
Up to 1200 kW



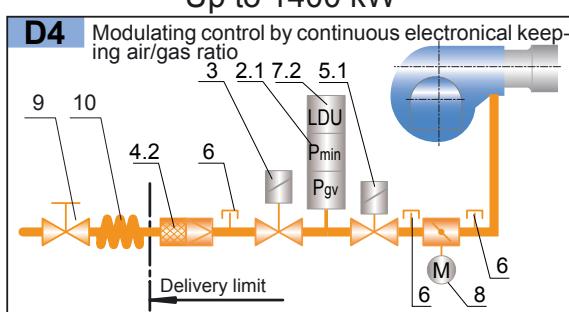
Up to 1400 kW



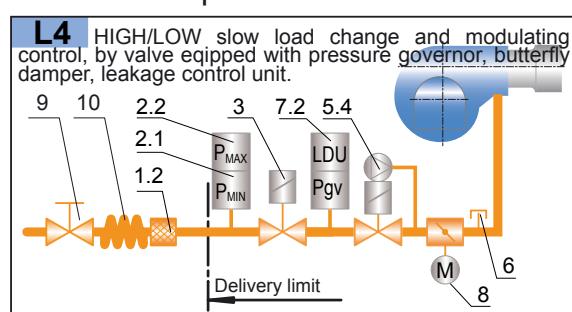
Up to 1200 kW



Up to 1400 kW



Up to 1200 kW

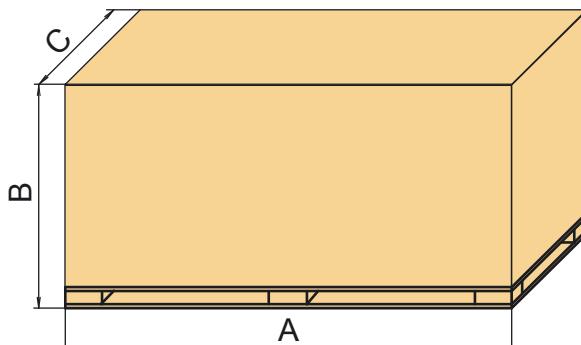


- 1 Filter
- 2.1 Min. gas pressure switch
- 2.2 Max. gas pressure switch
- 3 Safety gas valve
- 4.2 Gas pressure governor
- 5.1 Main gas valve
- 5.2 Two-stage main gas valve
- 5.3 Main gas valve with gas/air ratio and gas pressure control
- 5.4 Main gas valve with pressure governor
- 6 Pressure measuring pin
- 7.1 Gas leakage control unit (from 1200 kW)
- 7.2 Gas leakage control unit (from 1200 kW)
- 8 Gas butterfly-damper driven by servomotor

- Options for special order
- 1.2 Filter
- 7.1 Gas leakage control unit (under 1200 kW)
- 4.2 Gas pressure governor with integrated filter
- 9 Manual shut-off valve
- 10 Antivibrating connection (kompensator)



2.06. Gas burner package



- Package:** After assembling, quality control, and „cold-warm” testing the burner is packaged and fixed with its accessories and documentations into carton box, or in carton box, fixed on pallette. From SGB-160 type burner is fixed on pallette, foiled.
- Transport:** Transporting take care of the burner position, turning the box on side, or upside down prohibited! Transport only by closed car, van or truck. Cargo must be fixed. Damages by wrong trans-port are out of the manufacturer's responsibility.
- Storage:** Burner delivered at the user, must be stored in closed place in normal, working position: be-tween: - 15...+ 50°C között.

| Type: | A* | B | C | Kg** |
|-----------|------|-----|-----|------|
| ABG-3-NK | 450 | 320 | 420 | 11 |
| ABG-3 | 450 | 300 | 390 | 10 |
| ABG-10 | 450 | 300 | 390 | 12 |
| PICCOLO-G | 410 | 320 | 280 | 9,5 |
| EURO-6-G | 490 | 380 | 320 | 11 |
| EURO-10-G | 490 | 380 | 320 | 12 |
| EURO-15-G | 600 | 490 | 410 | 23 |
| EURO-25-G | 600 | 450 | 410 | 23 |
| ABG-30 | 800 | 460 | 580 | 27 |
| ABG-35 | 800 | 450 | 790 | 36 |
| ABG-40 | 800 | 450 | 790 | 36 |
| ABG-45 | 800 | 450 | 790 | 36 |
| ABG-55 | 800 | 450 | 800 | 40 |
| ABG-60 | 1000 | 600 | 800 | 58 |
| ABG-80 | 1000 | 600 | 800 | 62 |

| Type: | A* | B | C | Kg** |
|---------|------|------|------|---------|
| SGB-120 | 1100 | 650 | 920 | 71-85 |
| SGB-140 | 1100 | 650 | 920 | 71-85 |
| SGB-160 | 1200 | 675 | 770 | 105-120 |
| SGB-200 | 1200 | 675 | 770 | 105-120 |
| SGB-275 | 1290 | 800 | 940 | 175-230 |
| SGB-300 | 1290 | 800 | 940 | 175-230 |
| SGB-350 | 1340 | 860 | 1110 | 206-270 |
| SGB-450 | 1340 | 860 | 1110 | 206-270 |
| SGB-600 | 1640 | 930 | 1220 | 280-320 |
| SGB-700 | 1900 | 1080 | 1550 | 460-520 |
| SGB-800 | 1900 | 1080 | 1550 | 460-520 |
| SGB-900 | 1900 | 1080 | 1550 | 470-530 |

Note:

*this value can vary in case of extended air-tube

** this value can vary by the ordered gas-train size and attachments



2.07 Connecting gas train diameters depending on the inlet gas pressure



| Type: | Natural gas firing burner gas train dimensions at different connecting gas pressure-ranges. | | | | | | |
|----------------|---|---------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | 20-30 mbar | 30-40 mbar | 40-100 mbar | 100-150 mbar | 150-200 mbar | 200-350 mbar | 350-500 mbar |
| | Pressure-range symbol: | | | | | | |
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| ABG-35K-F | 1½" | 1½" | 1" | 1" | 1" | 1" | |
| ABG-40K-F | 1½" | 1¼" | 1" | 1" | 1" | 1" | |
| ABG-45-D/F | 1" | 1" | 1" | 1" | 1" | 1" | |
| ABG-45-E/F | 1¼" | 1¼" | 1" | 1" | 1" | 1" | |
| ABG-45-F/45K-F | 1½" | 1½" | 1¼" | 1" | 1" | 1" | |
| ABG-55-F | 1½" | 1½" | 1½" | 1½" | 1" | 1" | |
| ABG-60-F/60K-F | 1½" | 1½" | 1½" | 1½" | 1" | 1" | |
| ABG-80-F/80K-F | 2" | 2" | 1½" | 1½" | 1½" | 1½" | |
| SGB-120-G/F | | 80* | 2" | 1½" | 1½" | 1½" | 1½" |
| SGB-140-G/F | | 80* | 2" | 1½" | 1½" | 1½" | 1½" |
| SGB-160-G/F | | 80* | DN 80 | 2" | 1½" | 1½" | 1½" |
| SGB-200-G/F | | 80* | DN 80 | 2" | 1½" | 1½" | 1½" |
| SGB-275-G/F | | | DN 80* | DN 80 | 2" | 2" | 1½" |
| SGB-300-G/F | | | | DN 80 | 2" | 2" | 1½" |
| SGB-350-G/F | | | | DN 80 | 2" | 2" | 2" |
| SGB-450-G/F | | | | DN 80 | DN 80 | 2" | 2" |
| SGB-600-G/F | | | | | DN 80 | DN 80 | 2" |
| SGB-700-G/F | | | | | DN 100* | DN 80 | DN 80 |
| SGB-800-G/F | | | | | DN 100* | DN 80 | DN 80 |
| SGB-900-G/F | | | | | DN 100* | DN 100 | DN 80 |

| Type: | LPG firing burner gas train dimensions at different connecting gas pressure ranges. | | | | | | |
|------------------|---|---------------|----------------|-----------------|-----------------|-----------------|-----------------|
| | 20-30 mbar | 30-40 mbar | 40-100 mbar | 100-150 mbar | 150-200 mbar | 200-350 mbar | 350-500 mbar |
| | Pressure-range symbol: | | | | | | |
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| ABG-35K-PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-40K-PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-45-D/PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-45-E/PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-45-F/45K-PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-55-PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-60-PB/60K-PB | | 1" | 1" | 1" | 1" | 1" | |
| ABG-80-PB/80K-PB | | 1½" | 1½" | 1" | 1" | 1" | |
| SGB-120-G/PB | | 2" | 2" | 1½" | 1½" | 1" | 1" |
| SGB-140-G/PB | | 2" | 2" | 1½" | 1½" | 1" | 1" |
| SGB-160-G/PB | | DN 80* | 2" | 1½" | 1½" | 1½" | 1½" |
| SGB-200-G/PB | | DN 80* | 2" | 1½" | 1½" | 1½" | 1½" |
| SGB-275-G/PB | | | DN 80 | 2" | 1½" | 1½" | 1½" |
| SGB-300-G/PB | | | DN 80 | 2" | 1½" | 1½" | 1½" |
| SGB-350-G/PB | | | | 2" | 2" | 1½" | 1½" |
| SGB-450-G/PB | | | | DN 80 | 2" | 2" | 2" |
| SGB-600-G/PB | | | | DN 80 | DN 80 | 2" | 2" |
| SGB-700-G/PB | | | | | DN 80 | DN 80 | 2" |
| SGB-800-G/PB | | | | | DN 80 | DN 80 | 2" |
| SGB-900-G/PB | | | | | DN 80 | DN 80 | 2" |

Orders different from the specifications, given in this table can be fulfilled by separate manufacturing procedure, according to your specifications . (See also chapter Nr. 2.03.)

* Only for special request

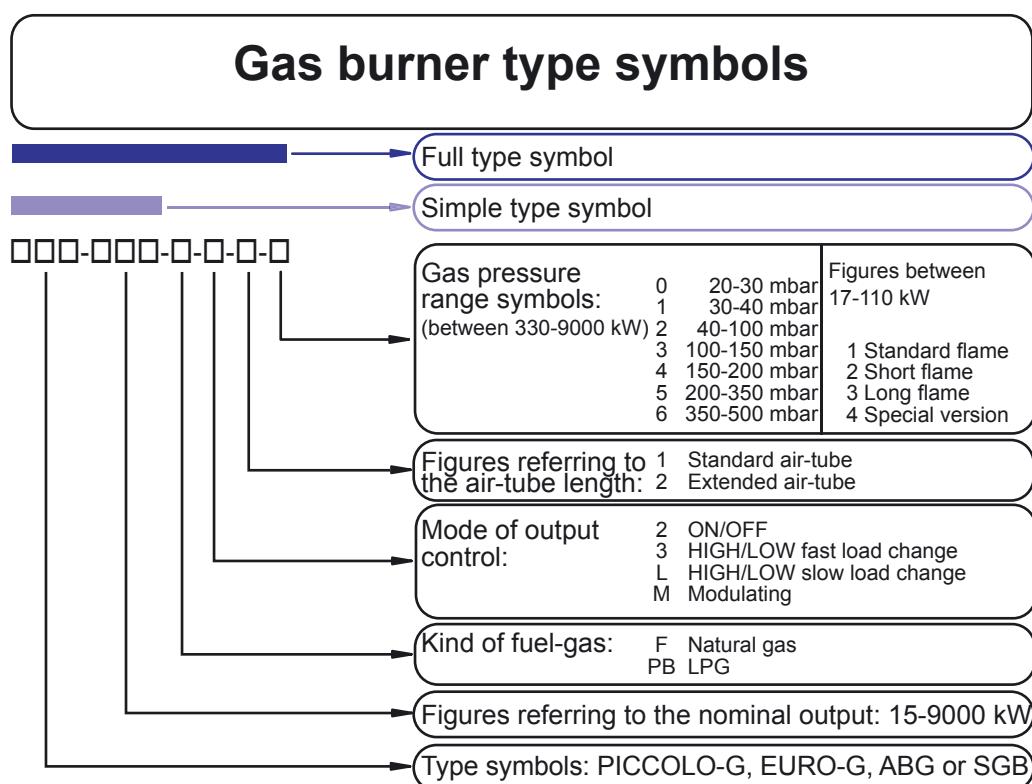


2.08 Optional accessories for extra prices.



- flexible hosing
- gas pressure governor with integrated filter up to DN 100 mm, pmax = 500 mbar
- manually operated shut-off valve
- antivibrating connection (compensator) for gas pipe-line
- pressure gauge
- gas pressure switch
- pressure or temperature remote transmitter (range has to be verified)
- burner output control unit.

For better understanding we should like to explain the type and version system of our gas burners.



2.09 Biogas firing

There is often a request for biogas-, or combined alternative dual-fuel – natural gas/biogas – combustion. We are able to manufacture special equipments on the base of the heating value and the ingredients of the biogas.

We can also supply safety gas-torch, after technical consulting.

2.11 Domestic and communal gas burner export prices



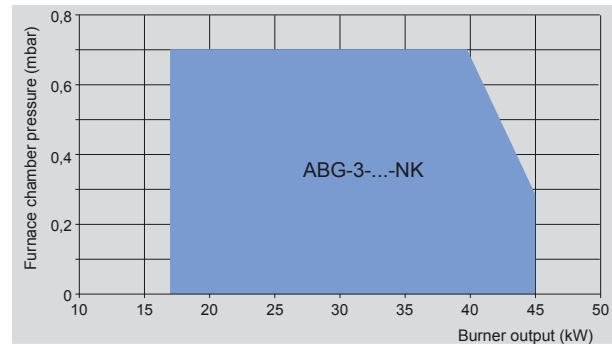
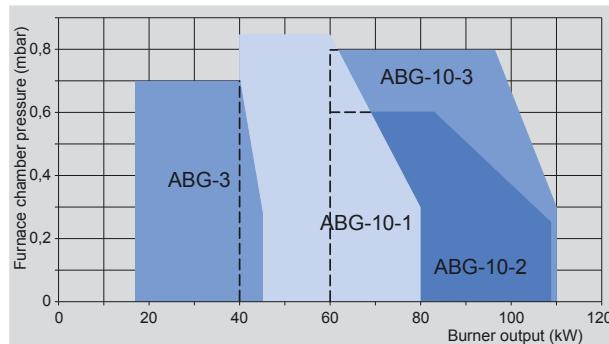
Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | | |
|---------------------|------------|----------|---------------------------|--------------|------------------------------------|---|--|--|
| | | | | | | Output control | | |
| 17-45 | ABG-3-NK* | | | | | 2 | | |
| | ABG-3-NK-F | natural | 20-45 | ½" | 230V,50Hz / 140W | 896 € | | |
| | ABG3-NK-PB | LPG | 20-45 | ½" | | 896 € | | |

| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | | | |
|---------------------|-----------|----------|---------------------------|--------------|------------------------------------|---|---------|----------|-----------|
| | | | | | | Output control | | | |
| 17-45 | ABG-3 | | | | | 2 | 3 | L and M* | L and M** |
| | ABG-3-F | natural | 20-45 | ½" | 230V,50Hz 140W | 608 € | 989 € | 1 442 € | 1770 € |
| | ABG-3-PB | LPG | 20-45 | ½" | | 608 € | 989 € | 1 442 € | 1770 € |
| 40-110 | ABG-10 | | | | | 2 | 3 | L and M* | L and M** |
| | ABG-10-F | natural | 20-200 | ¾" | 230V,50Hz 140W | 773 € | 1 174 € | 1 555 € | 1882 € |
| | ABG-10-PB | LPG | 30-200 | ¾" | | 773 € | 1 174 € | 1 555 € | 1882 € |



Gas train schemes by different output control modes:

| 2 | 3 | L and M * | L and M ** |
|----|----|-----------|------------|
| D1 | D2 | D3 | D4 |

Optionals for request: See page Nr. 53.

* pneumatic air/gas ratio control
** electronical air/gas ratio control



2.12 Domestic and communal gas burner export prices

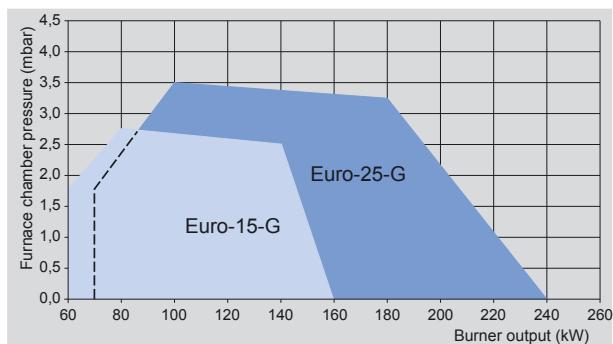
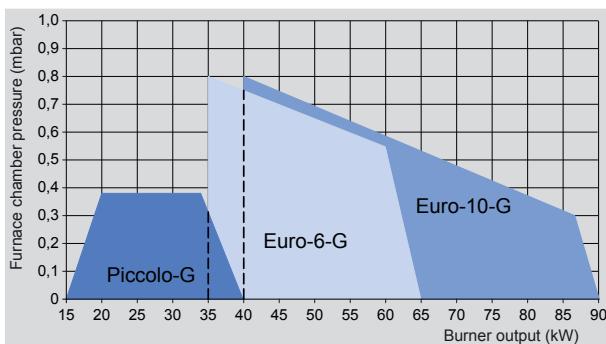


Monoblock system burners with complete gas train.

Product group: I..



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|---|---------|
| | | | | | | Output control | |
| 15-40 | PICCOLO-G | | | | | 2 | |
| 15-40 | PICCOLO-G/F | natural | 20-45 | ½" | 230V,50Hz / 100W | 505 € | |
| 15-40 | PICCOLO-G/PB | LPG | 20-45 | ½" | 230V,50Hz / 100W | 505 € | |
| 35-240 | EURO | | | | | 2 | 3 |
| 35-65 | EURO-6-G/F | natural | 20-60 | ½" | 230V,50Hz / 190W | 587 € | |
| 40-90 | EURO-10-G/F | | | ½" | 230V,50Hz / 190W | 762 € | |
| 60-160 | EURO-15-G/F | | 20-200 | ½" | 230V,50Hz / 280W | 1 174 € | 1 535 € |
| 70-240 | EURO-25-G/F | | | 1" | 230V,50Hz / 320W | 1 380 € | 1 720 € |
| 35-65 | EURO-6-G/PB | LPG | 30-60 | ½" | 230V,50Hz / 190W | 587 € | |
| 40-90 | EURO-10-G/PB | | | ½" | 230V,50Hz / 190W | 762 € | |
| 60-160 | EURO-15-G/PB | | 30-200 | ¾" | 230V,50Hz / 280W | 1 174 € | 1 535 € |
| 70-240 | EURO-25-G/PB | | | 1" | 230V,50Hz / 320W | 1 380 € | 1 720 € |



Gas train schemes by different output control modes:

| | |
|----|----|
| 2 | 3 |
| D1 | D2 |

Optionals for request: See page Nr. 53.



2.13 Domestic and communal gas burner export prices

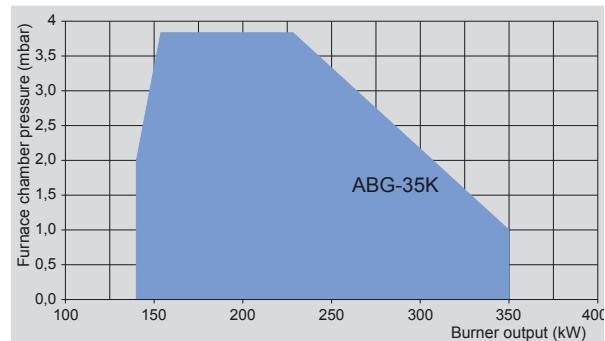
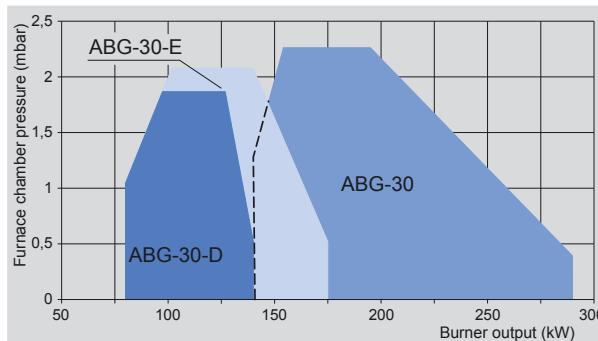


Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | | | |
|---------------------|-------------|----------|---------------------------|--------------|------------------------------------|---|---------|----------|-----------|
| | | | | | | Output control | | | |
| 80-350 | ABG-30 | natural | 20-200 | 3/4" | 230V,50Hz / 300W | 2 | 3 | L and M* | L and M** |
| 80-140 | ABG-30-D/F | | | | | 1 215 € | 1 761 € | 2 276 € | 2605 € |
| 80-175 | ABG-30-E/F | | | | | 1 349 € | 1 885 € | 2 369 € | 2700 € |
| 140-290 | ABG-30-F | | | | | 1 710 € | 2 184 € | 2 534 € | 2860 € |
| 140-350 | ABG-35K-F | | | | | | 2 348 € | 2 750 € | 3080 € |
| 140-350 | ABG-35K-F | | | | | | 2 235 € | 2 616 € | 2945 € |
| 80-140 | ABG-30-D/PB | | | | | 1 215 € | 1 761 € | 2 276 € | 2605 € |
| 80-175 | ABG-30-E/PB | | | | | 1 349 € | 1 885 € | 2 369 € | 2700 € |
| 140-290 | ABG-30-PB | | | | | 1 710 € | 2 184 € | 2 534 € | 2860 € |
| 140-350 | ABG-35K-PB | | | | | | 2 235 € | 2 616 € | 2945 € |



Gas train schemes by different output control modes:

| 2 | 3 | L and M * | L and M ** |
|----|----|-----------|------------|
| D1 | D2 | D3 | D4 |

Optionals for request: See page Nr. 53.

* pneumatic air/gas ratio control

** electronical air/gas ratio control



2.14 Domestic and communal gas burner export prices

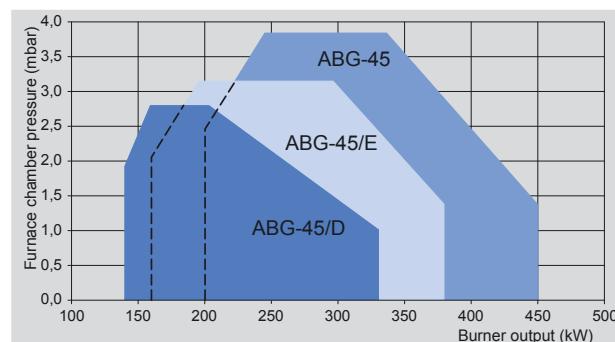
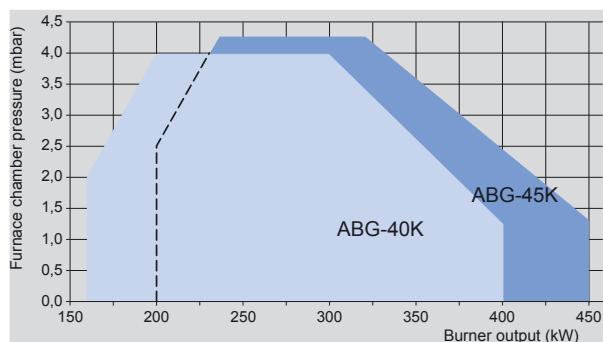


Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | | |
|---------------------|-------------|----------|---------------------------|--------------|------------------------------------|---|----------|-----------|
| | | | | | | Output control | | |
| 160-400 | ABG-40K | | | | | 3 | L and M* | L and M** |
| 160-400 | ABG-40K-F | natural | 20-30 | 1½" | 230V,50Hz / 300W | 2 657 € | 3 131 € | 3460 € |
| | ABG-40K-F | | 30-40 | 1¼" | 230V,50Hz / 300W | 2 534 € | 2 977 € | 3305 € |
| | ABG-40K-F | | 40-350 | 1" | 230V,50Hz / 300W | 2 307 € | 2 709 € | 3040 € |
| 160-400 | ABG-40K-PB | LPG | 30-350 | 1" | 230V,50Hz / 300W | 2 307 € | 2 709 € | 3040 € |
| 200-450 | ABG-45K | | | | | 3 | L and M* | L and M** |
| 200-450 | ABG-45K-F | natural | 20-40 | 1½" | 230V,50Hz / 500W | 2 730 € | 3 018 € | 3345 € |
| | ABG-45K-F | | 40-100 | 1¼" | 230V,50Hz / 500W | 2 585 € | 2 905 € | 3235 € |
| | ABG-45K-F | | 100-350 | 1" | 230V,50Hz / 500W | 2 359 € | 2 750 € | 3080 € |
| 200-450 | ABG-45K-PB | LPG | 30-350 | 1" | 230V,50Hz / 500W | 2 359 € | 2 750 € | 3080 € |
| 140-450 | ABG-45 | | | | | 3 | L and M* | L and M** |
| 140-330 | ABG-45-D/F | natural | 20-350 | 1" | 230V,50Hz / 300W | 2 235 € | 2 616 € | 2945 € |
| 160-380 | ABG-45-E/F | | 20-40 | 1¼" | 230V,50Hz / 300W | 2 534 € | 2 977 € | 3305 € |
| | ABG-45-E/F | | 30-350 | 1" | 230V,50Hz / 300W | 2 307 € | 2 709 € | 3040 € |
| 200-450 | ABG-45-F | | 20-40 | 1½" | 230V,50Hz / 500W | 2 730 € | 3 018 € | 3045 € |
| | ABG-45-F | | 40-100 | 1¼" | 230V,50Hz / 500W | 2 585 € | 2 905 € | 3230 € |
| | ABG-45-F | | 100-350 | 1" | 230V,50Hz / 500W | 2 359 € | 2 750 € | 3080 € |
| 140-330 | ABG-45-D/PB | LPG | 30-350 | 1" | 230V,50Hz / 300W | 2 235 € | 2 616 € | 2945 € |
| 160-380 | ABG-45-E/PB | | 30-350 | 1" | 230V,50Hz / 300W | 2 307 € | 2 709 € | 3040 € |
| 200-450 | ABG-45-PB | | 30-350 | 1" | 230V,50Hz / 500W | 2 359 € | 2 750 € | 3080 € |



Gas train schemes by different output control modes:

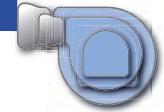
| 3 | L and M* | L and M** |
|----|----------|-----------|
| D2 | D3 | D4 |

Optionals for request: See page Nr. 53.

* pneumatic air/gas ratio control

** electronical air/gas ratio control

2.15 Domestic and communal gas burner export prices

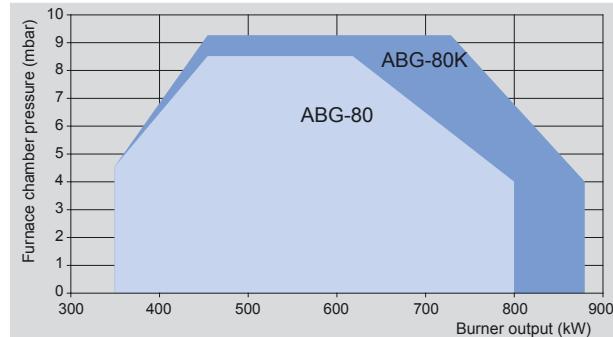
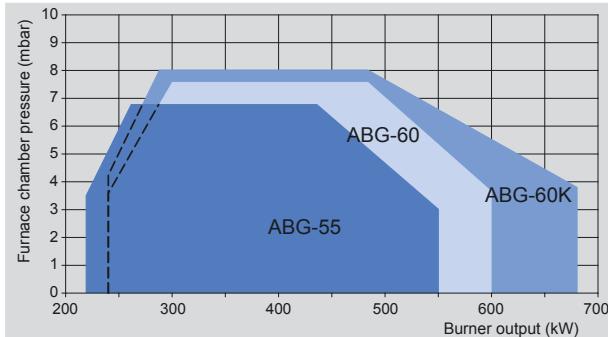


Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|------------|----------|---------------------------|--------------|------------------------------------|---|---------|
| | | | | | | Output control | |
| 220-550 | ABG-55 | | | | | 3 | L and M |
| | ABG-55-F | natural | 20-150 | 1½" | 230V, 50Hz / 0,75kW | 3 470 € | 4 320 € |
| | ABG-55-F | | 150-350 | 1" | | 3 060 € | 4 210 € |
| | ABG-55-PB | LPG | 30-350 | 1" | | 3 060 € | 4 210 € |
| 240-600 | ABG-60 | | | | | 3 | L and M |
| | ABG-60-F | natural | 20-150 | 1½" | 3x230/400V, 50Hz / 1,2 kW | 3 650 € | 4 550 € |
| | ABG-60-F | | 150-350 | 1" | | 3 210 € | 4 440 € |
| | ABG-60-PB | LPG | 30-350 | 1" | | 3 210 € | 4 440 € |
| 240-680 | ABG-60K | | | | | 3 | L and M |
| | ABG-60K-F | natural | 20-150 | 1½" | 3x230/400V, 50Hz / 1,2 kW | 3 650 € | 4 550 € |
| | ABG-60K-F | | 150-350 | 1" | | 3 210 € | 4 440 € |
| | ABG-60K-PB | LPG | 30-350 | 1" | | 3 210 € | 4 440 € |
| 350-800 | ABG-80 | | | | | 3 | L and M |
| | ABG-80-F | natural | 20-40 | 2" | 3x230/400V, 50Hz / 1,7kW | 4 360 € | 5 470 € |
| | ABG-80-F | | 40-350 | 1½" | | 3 920 € | 5 110 € |
| | ABG-80-PB | LPG | 30-100 | 1½" | | 3 920 € | 5 110 € |
| | ABG-80-PB | | 100-350 | 1" | | 3 490 € | 4 780 € |
| 350-880 | ABG-80K | | | | | 3 | L and M |
| | ABG-80K-F | natural | 20-40 | 2" | 3x230/400V, 50Hz / 1,7kW | 4 360 € | 5 470 € |
| | ABG-80K-F | | 40-350 | 1½" | | 3 920 € | 5 110 € |
| | ABG-80K-PB | LPG | 30-100 | 1½" | | 3 920 € | 5 110 € |
| | ABG-80K-PB | | 100-350 | 1" | | 3 490 € | 4 780 € |



Gas train schemes by different output control modes:

| | |
|----|---------|
| 3 | L and M |
| D2 | D3 |

Optionals for request: See page Nr. 53.



2.21 Industrial gas burner export prices



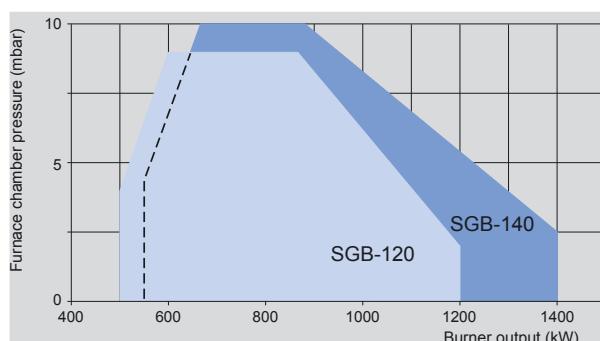
Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|---|---------|
| | | | | | | Output control | |
| 500-1200 | SGB-120-G | | | | | 3 | L and M |
| | SGB-120-G/F | natural | 30-40 | * | 3x230/400V, 50Hz / 2,5kW | | |
| | | | 40-100 | 2" | | 5 610 € | 6 190 € |
| | | | 100-350 | 1½" | | 5 240 € | 5 920 € |
| | SGB-120-G/PB | LPG | 30-100 | 2" | | 5 610 € | 6 190 € |
| | | | 100-350 | 1½" | | 5 240 € | 5 920 € |
| | | | 200-350 | 1" | | 5 810 € | 7 000 € |
| 550-1400 | SGB-140-G | | | | | 3 | L and M |
| | SGB-140-G/F | natural | 30-40 | * | 3x230/400V, 50Hz / 2,5kW | | |
| | | | 40-100 | 2" | | 6 160 € | 6 810 € |
| | | | 100-350 | 1½" | | 5 780 € | 6 540 € |
| | SGB-140-G/PB | LPG | 30-100 | 2" | | 6 160 € | 6 810 € |
| | | | 100-350 | 1½" | | 5 780 € | 6 540 € |
| | | | 200-350 | 1" | | 6 340 € | 7 630 € |

Between 350-500 mbar inlet gas pressure, a pressure governor integration into the gas train requested



| Gas train schemes by different output control modes: | |
|--|---------|
| 3 | L and M |
| D2 | D3 |

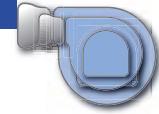
Symbols:

* special version, has to be consulted with the manufacturer, before order

Optionals for request: See page Nr. 53.



2.22 Industrial gas burner export prices



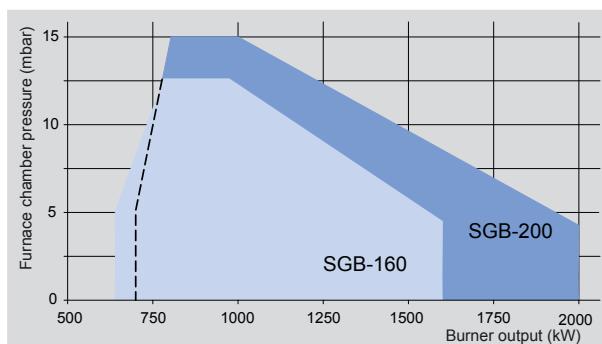
Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest.* | |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|--|----------|
| | | | | | | Output control | |
| 640-1600 | SGB-160-G | | | | | 3 | L and M |
| | SGB-160-G/F | natural | 30-40 | ** | 3x230/400V, 50Hz / 3,6kW | | |
| | | | 40-100 | DN 80 | | 8 060 € | 10 100 € |
| | | | 100-150 | 2" | | 6 280 € | 6 870 € |
| | | | 150-200 | 1½" | | 5 890 € | 6 610 € |
| | SGB-160-G/PB | LPG | 200-500 | 1½" | | 6 790 € | 7 770 € |
| | | | 30-40 | DN 80 | | 8 060 € | 10 100 € |
| | | | 40-100 | 2" | | 6 280 € | 6 870 € |
| | | | 100-200 | 1½" | | 5 890 € | 6 610 € |
| | | | 200-500 | 1½" | | 6 790 € | 7 770 € |
| 700-2000 | SGB-200-G | | | | | 3 | L and M |
| | SGB-200-G/F | natural | 30-40 | ** | 3x230/400V, 50Hz / 3,6kW | | |
| | | | 40-100 | DN 80 | | 8 200 € | 10 170 € |
| | | | 100-150 | 2" | | 6 400 € | 6 930 € |
| | | | 150-200 | 1½" | | 6 030 € | 6 670 € |
| | SGB-200-G/PB | LPG | 200-500 | 1½" | | 6 910 € | 7 830 € |
| | | | 30-40 | DN 80 | | 8 200 € | 10 170 € |
| | | | 40-100 | 2" | | 6 400 € | 6 930 € |
| | | | 100-200 | 1½" | | 6 030 € | 6 670 € |
| | | | 200-500 | 1½" | | 6 910 € | 7 830 € |

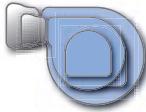
* Prices are only for information. Final price quotation is given in written form by our Commercial Department, having determined technical specification



| Gas train schemes by different output control modes: | |
|--|----------------|
| 3 | L and M |
| L1, D2 | L2, L3, L4, D3 |

Symbols:

** connecting dimension is special version, has to be consulted with the manufacturer, before order
Optionals for request: See page Nr. 53.



2.23 Industrial gas burner export prices



Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest.* |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|--|
| | | | | | | Output control |
| 800-2750 | SGB-275-G | | | | | L and M |
| | SGB-275-G/F | natural | 40-100 | ** | 3x230/400V, 50Hz / 6,3kW | |
| | | | 100-150 | DN 80 | | 10 380 € |
| | | | 150-200 | 2" | | 9 390 € |
| | | | 200-350 | 2" | | 10 380 € |
| | SGB-275-G/PB | LPG | 350-500 | 1½" | | 10 290 € |
| | | | 40-100 | DN 80 | | 10 380 € |
| | | | 100-150 | 2" | | 9 390 € |
| | | | 150-200 | 1½" | | 9 130 € |
| | | | 200-500 | 1½" | | 10 290 € |
| 900-3100 | SGB-300-G | | | | | L and M |
| | SGB-300-G/F | natural | 100-150 | DN 80 | 3x230/400V, 50Hz / 9kW | 13 150 € |
| | | | 150-200 | 2" | | 9 910 € |
| | | | 200-350 | 2" | | 10 900 € |
| | | | 350-500 | 1½" | | 10 800 € |
| | SGB-300-G/PB | LPG | 40-100 | DN 80 | | 13 150 € |
| | | | 100-150 | 2" | | 9 910 € |
| | | | 150-200 | 1½" | | 9 640 € |
| | | | 200-500 | 1½" | | 10 800 € |

* Prices are only for information. Final price quotation is given in written form by our Commercial Department, having determined technical specification



| Gas train schemes by different output control modes: |
|--|
| L and M |
| L2, L3, L4 |

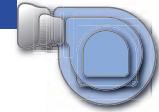
Symbols:

** connecting dimension is special version, has to be consulted with the manufacturer, before order

Optionals for request: See page Nr. 53.



2.24 Industrial gas burner export prices



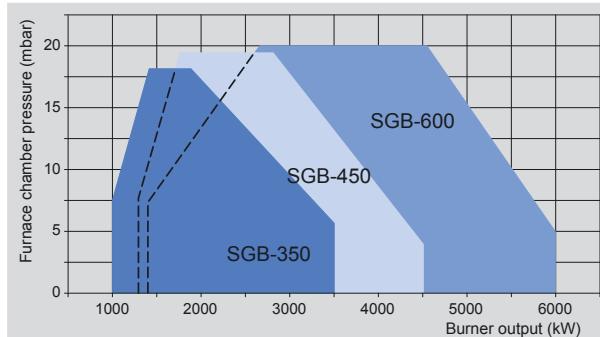
Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest.* |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|--|
| | | | | | | Output control |
| 1000-3500 | SGB-350-G | | | | | L and M |
| | SGB-350-G/F | natural | 100-150 | DN 80 | 3x230/400V, 50Hz / 9kW | 13 660 € |
| | | | 150-200 | 2" | | 10 420 € |
| | | | 200-500 | 2" | | 11 410 € |
| | SGB-350-G/PB | LPG | 100-200 | 2" | | 10 420 € |
| | | | 200-500 | 1½" | | 11 320 € |
| 1300-4500 | SGB-450-G | | | | | L and M |
| | SGB-450-G/F | natural | 100-200 | DN 80 | 3x230/400V, 50Hz / 9kW | 17 190 € |
| | | | 200-500 | 2" | | 14 920 € |
| | | | 100-150 | DN 80 | | 17 190 € |
| | SGB-450-G/PB | LPG | 150-200 | 2" | | 13 950 € |
| | | | 200-350 | 2" | | 14 920 € |
| | | | 350-500 | 1½" | | 14 830 € |
| | SGB-600-G | | | | | M |
| 1400-6000 | SGB-600-G/F | natural | 150-200 | DN 80 | 3x230/400V, 50Hz / 12,5kW | 20 140 € |
| | | | 200-350 | DN 80 | | 20 480 € |
| | | | 350-500 | 2" | | 17 920 € |
| | SGB-600-G/PB | LPG | 100-200 | DN 80 | | 20 140 € |
| | | | 200-500 | 2" | | 17 920 € |

* Prices are only for information. Final price quotation is given in written form by our Commercial Department, having determined technical specification

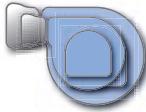


Gas train schemes by different output control modes:

L and M

L2, L3, L4

Optionals for request: See page Nr. 53.



2.25 Industrial gas burner export prices



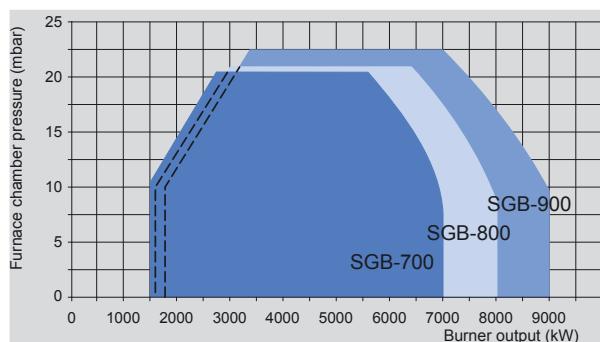
Monoblock system burners with complete gas train.

Product group: I.



| Nominal output (kW) | Type | Fuel gas | Inlet gas pressure (mbar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest.* |
|---------------------|--------------|----------|---------------------------|--------------|------------------------------------|--|
| | | | | | | Output control |
| 1500-7000 | SGB-700-G | | | | | M |
| | SGB-700-G/F | natural | 150-200 | DN 100 | 3x230/400V, 50Hz / 16kW | 25 870 € |
| | | | 200-500 | DN 80 | | 25 120 € |
| | SGB-700-G/PB | LPG | 150-200 | DN 80 | | 24 780 € |
| | | | 200-350 | DN 80 | | 25 120 € |
| | | | 350-500 | 2" | | 22 510 € |
| 1600-8000 | SGB-800-G | | | | | M |
| | SGB-800-G/F | natural | 150-200 | DN 100 | 3x230/400V, 50Hz / 19 kW | 26 880 € |
| | | | 200-500 | DN 80 | | 26 130 € |
| | SGB-800-G/PB | LPG | 150-200 | DN 80 | | 25 030 € |
| | | | 200-350 | DN 80 | | 26 130 € |
| | | | 350-500 | 2" | | 23 510 € |
| 1800-9000 | SGB-900-G | | | | | M |
| | SGB-900-G/F | natural | 150-350 | DN 100 | 3x230/400V, 50Hz / 23kW | 27 890 € |
| | | | 350-500 | DN 80 | | 27 140 € |
| | SGB-900-G/PB | LPG | 150-200 | DN 80 | | 26 800 € |
| | | | 200-350 | DN 80 | | 27 140 € |
| | | | 350-500 | 2" | | 24 510 € |

* Prices are only for information. Final price quotation is given in written form by our Commercial Department, having determined technical specification

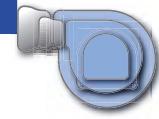


| |
|--|
| Gas train schemes by different output control modes: |
| L4 |

Optionals for request: See page Nr. 53.



3 Liquid-fase propan-butan gas burners' prices



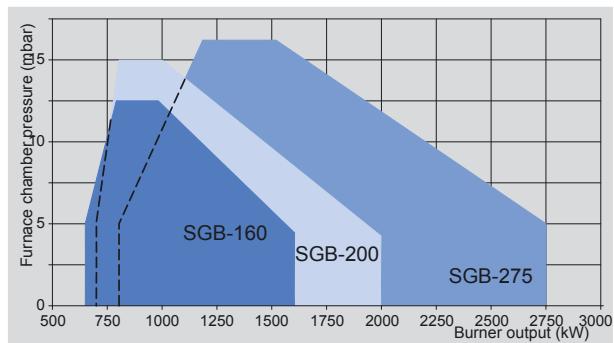
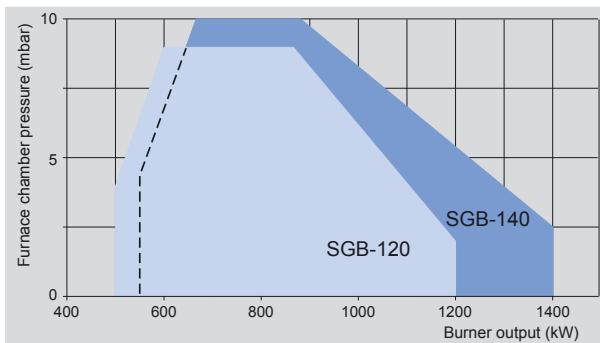
Monoblock system burners with complete gas train.

Product group: II.



The burners are suitable to combustion of liquid-fase propan or propan-butan mixture.

| Nominal output (kW) | Type | Fuel gas | (bar) | Gas train DN | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest.* |
|---------------------|--------------|------------------------------|--------|--------------|------------------------------------|--|
| 500-1200 | SGB-120-L/PB | Liquid-fase propan-butan gas | 7 - 10 | ½" | 3x230/400V, 50Hz / 2,5 kW | 6 430 € |
| 550-1400 | SGB-140-L/PB | Liquid-fase propan-butan gas | | ½" | 3x230/400V, 50Hz / 2,5 kW | 7 080 € |
| 640-1600 | SGB-160-L/PB | Liquid-fase propan-butan gas | | ½" | 3x230/400V, 50Hz / 3,6 kW | 7 240 € |
| 700-2000 | SGB-200-L/PB | Liquid-fase propan-butan gas | | ½" | 3x230/400V, 50Hz / 3,6 kW | 7 400 € |
| 800-2750 | SGB-275-L/PB | Liquid-fase propan-butan gas | | ½" | 3x230/400V, 50Hz / 6,3 kW | 10 020 € |



Optionals for request: See page Nr. 53.

Attention: Before designing and ordering contact technical and sales experts of the manufacturer, in any case.



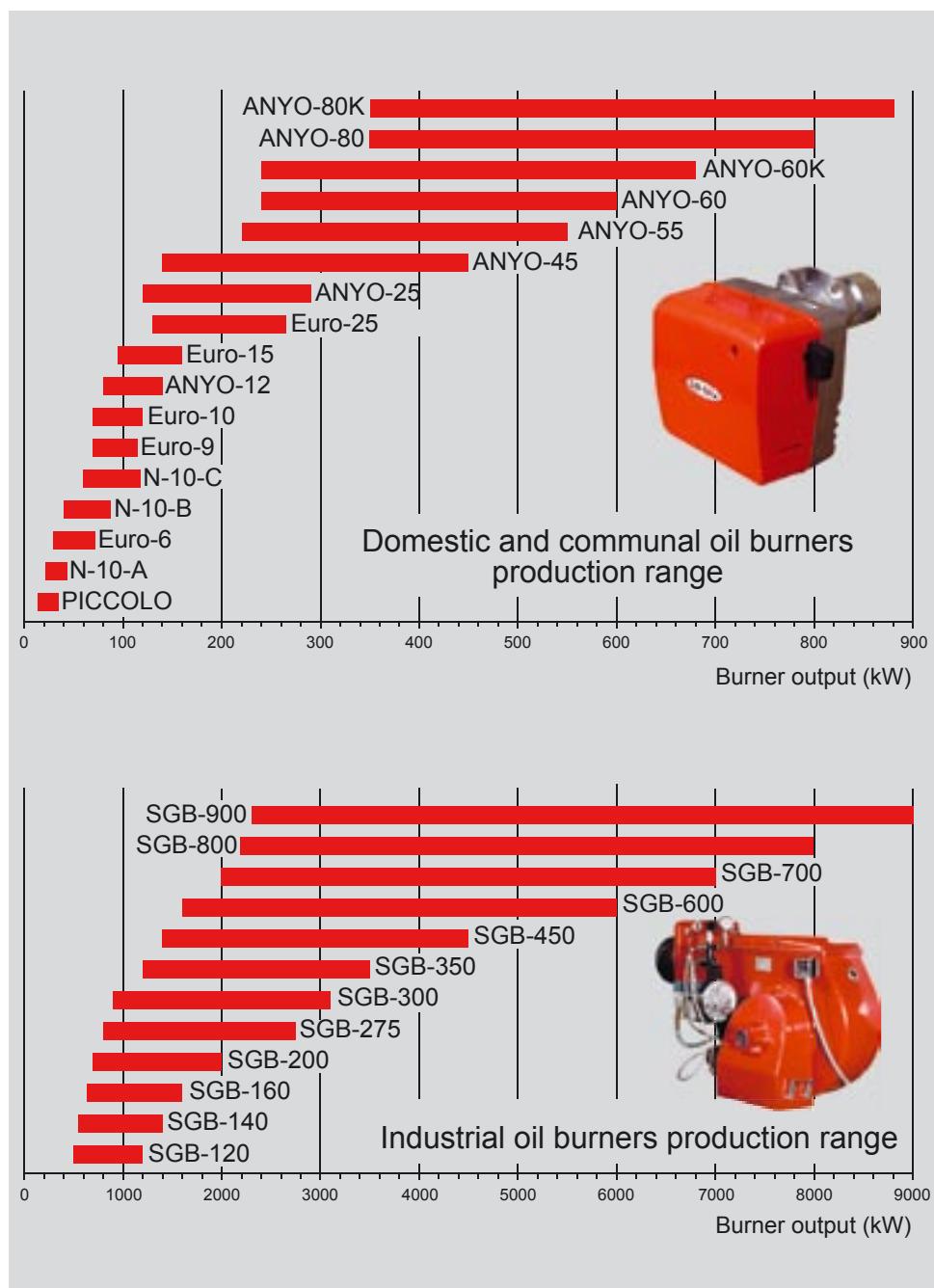
4. Oil burners, production range, construction, selection and prices.

4.00 General informations

Our firm is continuously developing the oil burners, for we could be able to offer up-to-date firing equipment of economical run and high efficiency. We have developed these fully automatically controlled burners for different kinds of fuel-oil. By the user's request, mode of control could be: ON/OFF, HIGH/LOW fast load change, HIGH/LOW slow load change, or modulating, by the actual thermal request.

The burners can be mounted: on warm-water-, hot-water-, steam-boilers, hot-air blowers, agricultural and industrial dryers, and other technological equipments.

4.01 Oil burner production range by output





4.02 Construction:

The oil burners are fan assisted, air-forced, pressure pulverization type firing equipments, suitable for combustion of different kind of fuel-oils. The needed command, control and safety elements for the burner running, are mounted on the combustion-air fan-house, making a compact, monoblock-system unit.

Main construction components of the oil burners:

- primary burner control unit, mounted directly on the burner, or in the control board
- fuel-oil pump
- fuel-oil pulverization jet
- fuel-oil solenoid(s)
- output control mechanism at HIGH/LOW slow load change and modulating control
- air volume control mechanism

Oil burners are divided into two groups:

- domestic and communal oil burners,
- industrial oil burners.

Oil burners are complete firing equipments in every case. Standard versions are produced with the following modes of output control, depending on their output range:

| | |
|-----------------------|---|
| Up to 290 kW | ON/OFF |
| Between 100 - 2000 kW | HIGH/LOW fast load change |
| Between 500 - 4500 kW | HIGH/LOW slow load change |
| Between 500 - 9000 kW | Modulating by the requested actual output |

Depending on the burner output range, we can supply our burners with other output control system. Such requests need additional consulting, before confirmation.

Fuel-oil types:

| | |
|-----------------------|---|
| Without output limit: | LFO=Light fuel-oil, viscosity at 20 °C 5-10 cSt (1,5 - 2 E) |
| Without output limit: | SHFO=Semi-heavy fuel-oil, viscosity at 20 °C max. 60 cSt (8 E)* |
| From 1200 kW: | HFO=Heavy fuel-oil, viscosity at 100 °C max. 40 cSt (5 E)* |

* At semi-heavy burners "R" and heavy fuel-oil burners "N" the oil preheater is mounted on the burner.

4.03 Selection

For the right selection of the suitable burner type and version, we kindly ask you to fill the enclosed data-sheet (see page Nr 60.) This data-sheet includes all needed parameters for the burner selection.

The respecting figures in the oil burner type symbols refer to the nominal output of the burner. We select the suitable type on the base of the required burner output and the burner output - furnace chamber pressure characteristics. The burner output has to be higher with a 10-15% over the nominal output of the heating equipment. The burner output limits are determined by the characteristics, depending on the heating appliance furnace chamber pressure value. On the base of the furnace chamber dimensions the needed air-tube length can be determined.

By the request of the client we determine the burner's mode of output control (Modulating, HIGH/LOW slow load change, HIGH/LOW fast load change, ON/OFF).

The burner prices do not include the following armatures: output control units, thermostats, pressure switches, temperature and steam remote transmitters etc.

These have to be ordered separately.



Please find information about average flue-gas emission values, measured in working circum-stances:

| | CO (mg/kWh) | *NO _x (mg/kWh) |
|----------------|----------------|------------------------------|
| Light fuel-oil | 60 | 180 |

*Note: we have taken in consideration that 8-12% of the NO_x is NO₂, and 88-92% of that is NO. Data are valid at 3% O₂, projecting at NO₂.

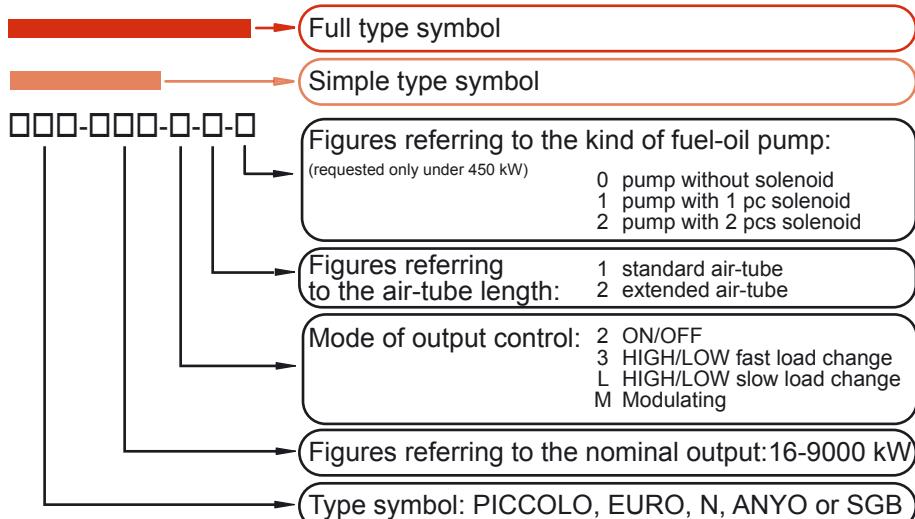
In case of heavy fuel-oil, CO figures are similar to the light fuel-oil, but the NO_x value even could reach at 400-500 mg/m³, depending on the ratio of the nitrogen compounds, dissolved in the fuel, for this reason we do not issue any further figure.

4.04 Optional accessories for extra prices

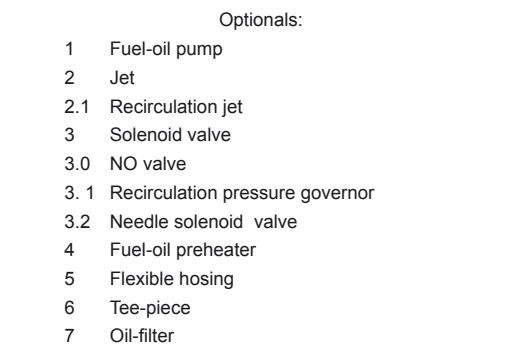
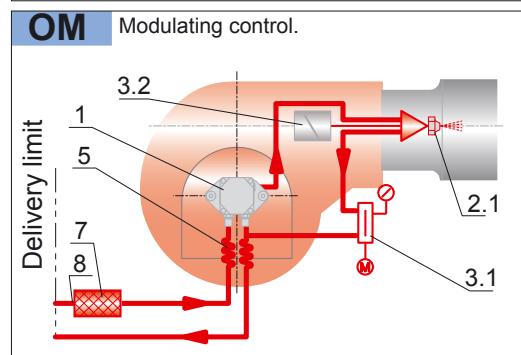
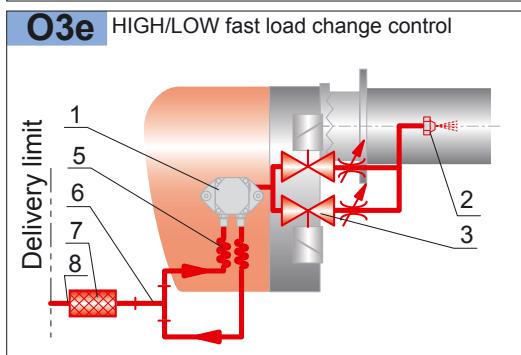
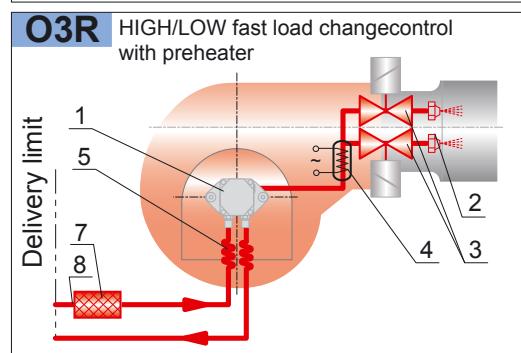
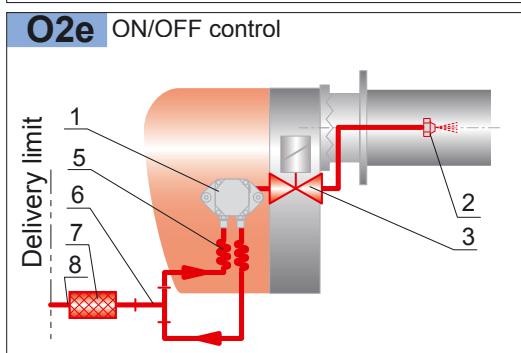
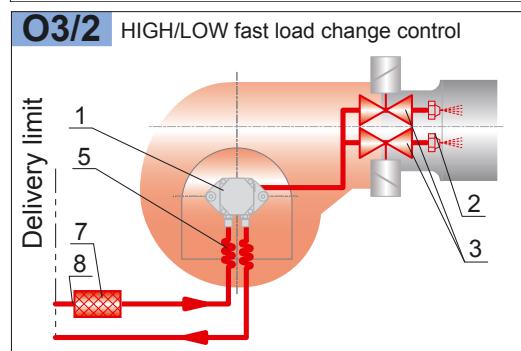
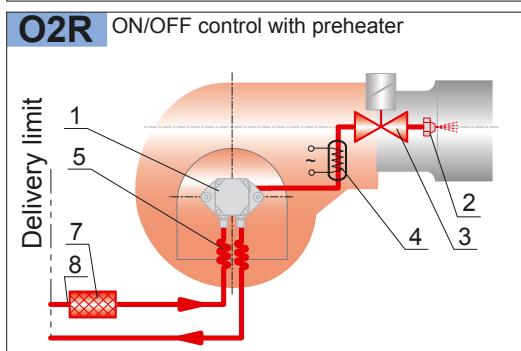
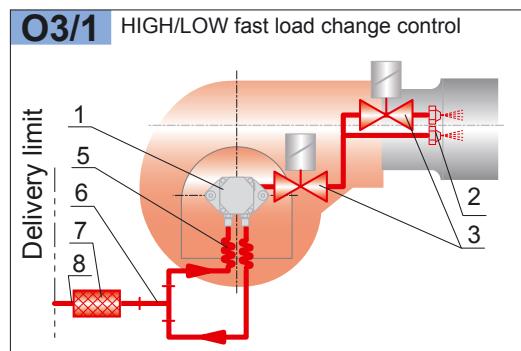
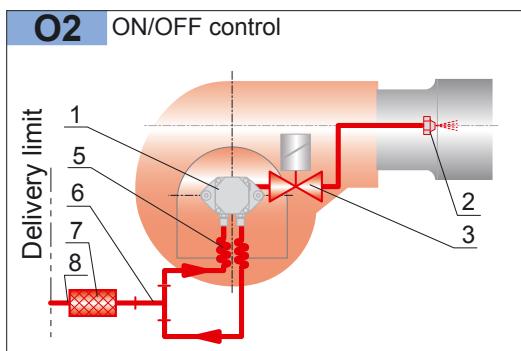
- thermostat
- pressure switch
- temperature gauge
- pressure gauge
- oil-filter
- pressure or temperature remote transmitter (range has to be verified)
- burner output control unit.

For better understanding we should like to explain the type and version system of our oil burners:

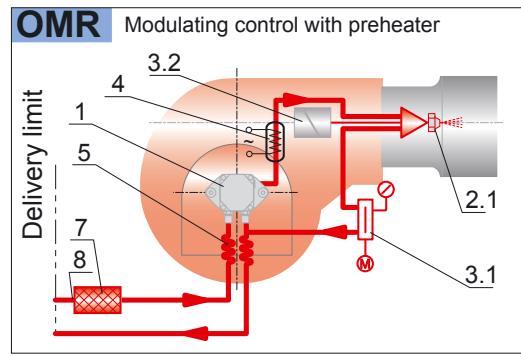
Oil burner type symbols



4.05 Oil supply system schemes depending on different modes of output control

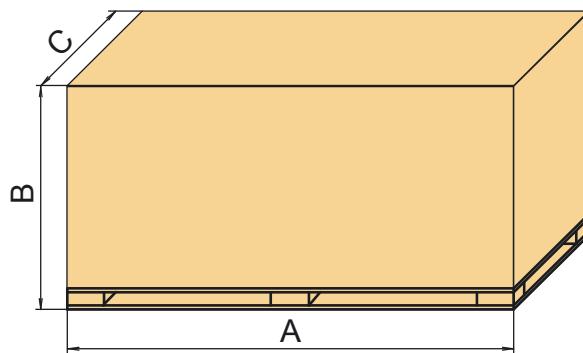


Optionals for special request:
Manual shut-off valve





4.06 Oil burner package



Packaging: After assembling, quality control, and the „cold-warm” testing the burner is packaged with its accessories and documentations into carton box, fixed on pallette, from SGB-160 type fixed on pallette, foiled.

Transport: Transporting, take care of the burner position, turning the box on side, or upside down prohibited. Transport only by closed car, van or truck. Cargo must be fixed. Demages caused by wrong transport are out of the manufacturer's responsibility.

Storage: Burner delivered at the user, must be stored in closed place, in normal, working position. Storage temperature: between - 15 + 50°C.

| Domestic and communal oil burners: | | | | |
|------------------------------------|------|-----|-----|------|
| Type | A* | B | C | kg** |
| NKO-4 | 450 | 320 | 420 | 10 |
| N-10 | 450 | 320 | 380 | 9 |
| PICCOLO | 410 | 260 | 280 | 9,5 |
| EURO-6 | 500 | 320 | 320 | 12 |
| EURO-9 | 500 | 320 | 320 | 12 |
| EURO-10 | 500 | 320 | 320 | 12 |
| EURO-15 | 560 | 390 | 410 | 22 |
| EURO-25 | 560 | 390 | 410 | 22 |
| ANYO-12 | 650 | 420 | 500 | 25 |
| ANYO-25 | 650 | 420 | 580 | 28 |
| ANYO-45 | 800 | 460 | 580 | 33 |
| ANYO-55 | 800 | 460 | 800 | 40 |
| ANYO-60 | 1000 | 600 | 800 | 56 |
| ANYO-80 | 1000 | 600 | 800 | 58 |

| Industrial oil burners: | | | | |
|-------------------------|------|------|------|---------|
| Type | A* | B | C | kg** |
| SGB-120 | 1100 | 650 | 920 | 65-70 |
| SGB-140 | 1100 | 650 | 920 | 65-70 |
| SGB-160 | 1140 | 880 | 820 | 120-210 |
| SGB-200 | 1140 | 880 | 820 | 120-210 |
| SGB-275 | 1290 | 920 | 1070 | 220-245 |
| SGB-300 | 1290 | 920 | 1070 | 220-245 |
| SGB-350 | 1350 | 930 | 1090 | 250-275 |
| SGB-450 | 1350 | 930 | 1090 | 250-275 |
| SGB-600 | 1640 | 1050 | 1120 | 400-460 |
| SGB-700 | 1900 | 1090 | 1590 | 460-520 |
| SGB-800 | 1900 | 1090 | 1590 | 460-520 |
| SGB-900 | 1900 | 1090 | 1590 | 470-530 |

Note:

* this value can vary in case of extended air-tube

** this value can vary by the ordered attachments

4.11 Domestic and communal oil burner export prices



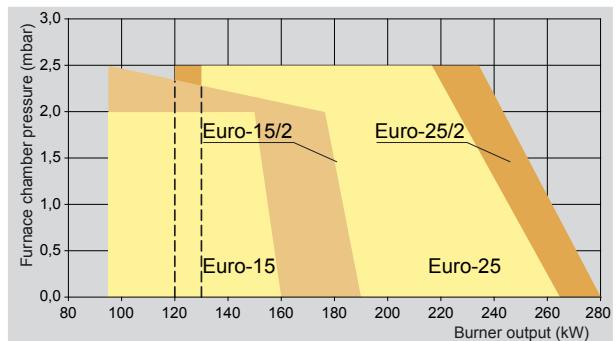
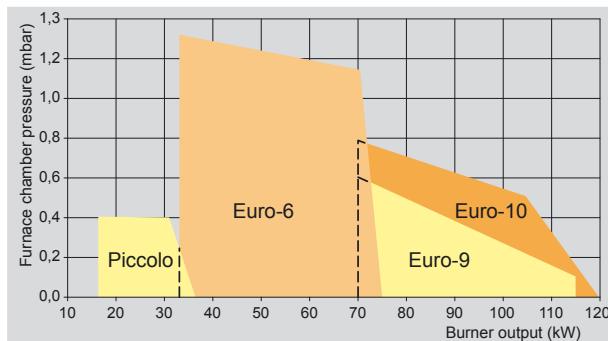
Monoblock system burners.

Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|---------|------|------------------------------------|---|--|
| | | | | Output control | |
| 16-36 | PICCOLO | | | 2 | |
| 16-36 | PICCOLO | LFO | 230V,50Hz / 120W | 390 € | |

| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|-----------|------|------------------------------------|---|---------|
| | | | | Output control | |
| 30-265 | EURO | | | 2 | |
| 33-75 | EURO-6 | LFO | 230V,50Hz / 200W | 410 € | |
| 70-115 | EURO-9 | LFO | 230V,50Hz / 200W | 430 € | |
| 70-120 | EURO-10 | LFO | 230V,50Hz / 210W | 480 € | |
| 95-160 | EURO-15 | LFO | 230V,50Hz / 230W | 730 € | |
| 95-190 | EURO-15/2 | LFO | 230V,50Hz / 230W | | 920 € |
| 130-265 | EURO-25 | LFO | 230V,50Hz / 240W | 890 € | |
| 120-280 | EURO-25/2 | LFO | 230V,50Hz / 240W | | 1 060 € |



| Oil supply system schemes by different output control modes: | |
|--|----|
| 2 | 3 |
| O2 | O3 |

Optionals for request: See page Nr. 53.



4.12 Domestic and communal oil burner export prices

Monoblock system burners.

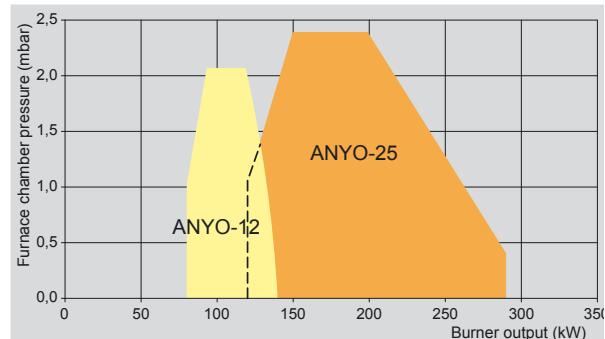
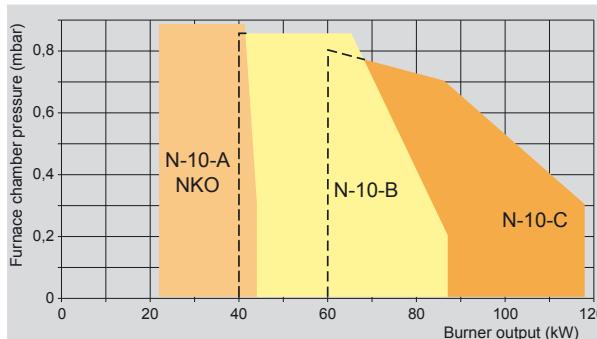
Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|-------|------|------------------------------------|---|--|
| | | | | Output control | |
| 22-44 | NKO-4 | | | 2 | |
| | NKO-4 | LFO | 230V,50Hz / 140W | 730 € | |

| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|--------|------|------------------------------------|---|-------|
| | | | | Output control | |
| 22-118 | N-10 | | | 2 | 2 SA |
| 22-44 | N-10-A | LFO | 230V,50Hz / 140W | 420 € | 355 € |
| 40-87 | N-10-B | LFO | 230V,50Hz / 140W | 420 € | 355 € |
| 60-118 | N-10-C | LFO | 230V,50Hz / 140W | 450 € | 395 € |
| 22-118 | N-10/R | SHFO | 230V,50Hz / 800W | 890 € | |

| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | | | |
|---------------------|-----------|------|------------------------------------|---|--|---------|--|
| | | | | Output control | | | |
| 80-140 | ANYO-12 | | | 2 | | | |
| | ANYO-12 | LFO | 230V,50Hz / 300W | 790 € | | | |
| | ANYO-12/R | SHFO | 230V,50Hz / 900W | 1 130 € | | | |
| 120-290 | ANYO-25 | | | 2 | | 3 | |
| | ANYO-25 | LFO | 230V,50Hz / 300W | 930 € | | 1 140 € | |
| | ANYO-25/R | SHFO | 230V,50Hz / 1 850W | 1 280 € | | 1 550 € | |



| Oil supply system schemes by different output control modes: | |
|--|----|
| 2 | 3 |
| O2 | O3 |

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

Optionals for request: See page Nr. 53.

4.13 Domestic and communal oil burner export prices

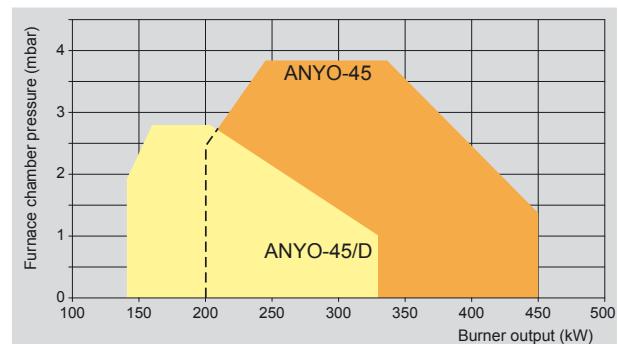
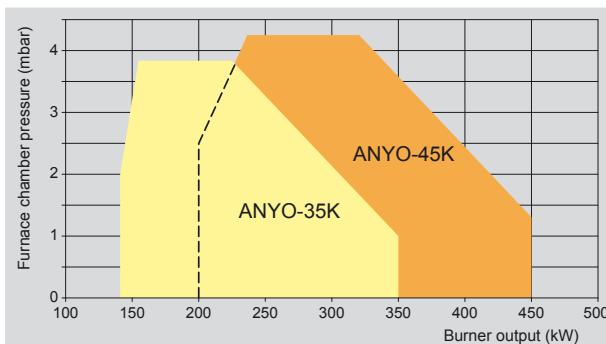


Monoblock system burners.

Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|------------|------|------------------------------------|---|---------|
| | | | | Output control | |
| 140-350 | ANYO-35K | | | | 3 |
| 140-350 | ANYO-35K | LFO | 230V,50Hz / 300W | | 1 390 € |
| 140-350 | ANYO-35K/R | SHFO | 230V,50Hz / 1 850W | | 2 160 € |
| 140-450 | ANYO-45 | | | | 3 |
| 140-330 | ANYO-45-D | LFO | 230V,50Hz / 300W | | 1 370 € |
| 200-450 | ANYO-45 | LFO | 230V,50Hz / 500W | | 1 740 € |
| 200-450 | ANYO-45/R | SHFO | 3x230/400V,50Hz / 4,5kW | | 3 170 € |
| 200-450 | ANYO-45K | | | | 3 |
| 200-450 | ANYO-45K | LFO | 230V,50Hz / 500W | | 1 740 € |
| 200-450 | ANYO-45K/R | SHFO | 3x230/400V,50Hz / 4,5kW | | 3 060 € |



| |
|--|
| Oil supply system schemes by different output control modes: |
| 3 |
| O3, O3R |

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

Optionals for request: See page Nr. 53.



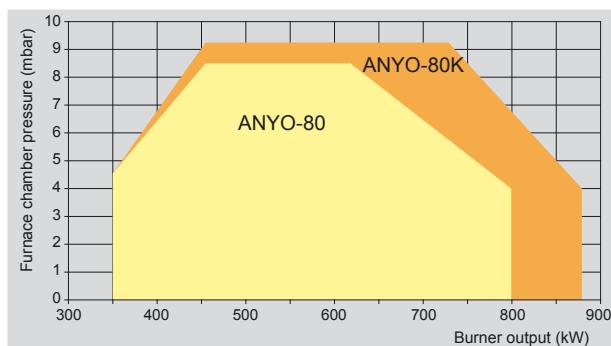
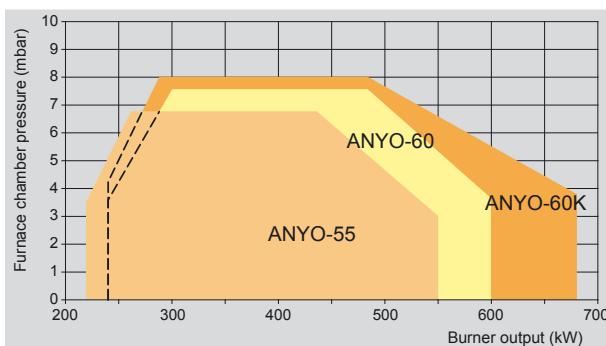
4.14 Domestic and communal oil burner export prices

Monoblock system burners.

Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. |
|---------------------|------------|------|------------------------------------|---|
| | | | | Output control |
| 220-550 | ANYO-55 | | | 3 |
| | ANYO-55 | LFO | 3x230/400V,50Hz / 1kW | 2 300 € |
| | ANYO-55/R | SHFO | 3x230/400V,50Hz / 5kW | 3 500 € |
| 240-600 | ANYO-60 | | | 3 |
| | ANYO-60 | LFO | 3x230/400V,50Hz / 1,2kW | 2 870 € |
| | ANYO-60/R | SHFO | 3x230/400V,50Hz / 5,2kW | 3 870 € |
| 240-680 | ANYO-60K | | | 3 |
| | ANYO-60K | LFO | 3x230/400V,50Hz / 1,7kW | 2 870 € |
| | ANYO-60K/R | SHFO | 3x230/400V,50Hz / 5,8kW | 3 870 € |
| 350-800 | ANYO-80 | | | 3 |
| | ANYO-80 | LFO | 3x230/400V,50Hz / 1,7kW | 3 450 € |
| | ANYO-80/R | SHFO | 3x230/400V,50Hz / 5,8kW | 4 260 € |
| 350-880 | ANYO-80K | | | 3 |
| | ANYO-80K | LFO | 3x230/400V,50Hz / 1,7kW | 3 450 € |
| | ANYO-80K/R | SHFO | 3x230/400V,50Hz / 5,8kW | 2 870 € |



| |
|--|
| Oil supply system schemes by different output control modes: |
| 3 |
| O3, O3R |

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

Optionals for request: See page Nr. 53.

4.21 Industrial oil burner export prices

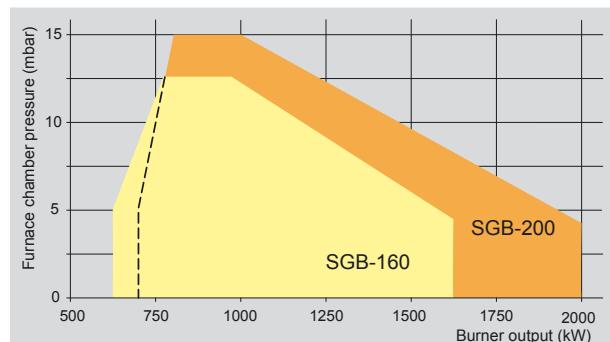
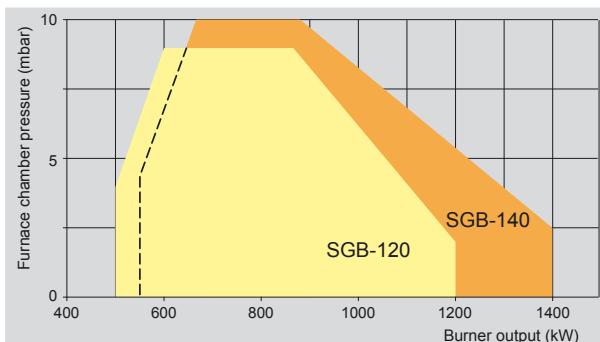


Monoblock system burners.

Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. | |
|---------------------|-----------|------|------------------------------------|---|----------|
| | | | | Output control | |
| 500-1200 | SGB-120 | | | 3 | L and M |
| | SGB-120 | LFO | 3x230/400V,50Hz/2,5kW | 3 660 € | 5 850 € |
| | SGB-120-R | SHFO | 3x230/400V,50Hz/8,5kW | 4 920 € | 7 070 € |
| | SGB-120-N | HFO | 3x230/400V,50Hz/12,5kW | | 9 350 € |
| 550-1400 | SGB-140 | | | 3 | L and M |
| | SGB-140 | LFO | 3x230/400V,50Hz/2,5kW | 3 900 € | 6 250 € |
| | SGB-140-R | SHFO | 3x230/400V,50Hz/8,5kW | 5 920 € | 8 400 € |
| | SGB-140-N | HFO | 3x230/400V,50Hz/12,5kW | | 10 180 € |
| 640-1600 | SGB-160 | | | 3 | L and M |
| | SGB-160 | LFO | 3x230/400V,50Hz/3,6kW | 4 260 € | 6 340 € |
| | SGB-160-R | SHFO | 3x230/400V,50Hz/15kW | 6 460 € | 9 070 € |
| | SGB-160-N | HFO | 3x230/400V,50Hz/20kW | | 10 600 € |
| 700-2000 | SGB-200 | | | 3 | L and M |
| | SGB-200 | LFO | 3x230/400V,50Hz/3,6kW | 4 600 € | 6 450 € |
| | SGB-200-R | SHFO | 3x230/400V,50Hz/15kW | 6 980 € | 9 750 € |
| | SGB-200-N | HFO | 3x230/400V,50Hz/20kW | | 11 010 € |



Oil supply system schemes by different output control modes:

| | |
|---------|---------|
| 3 | L and M |
| O3, O3R | OM, OMR |

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

N Equipped with preheater for fuel-oils of viscosity, at 100 °C max. 40 cSt (5 E)

Optionals for request: See page Nr. 53.



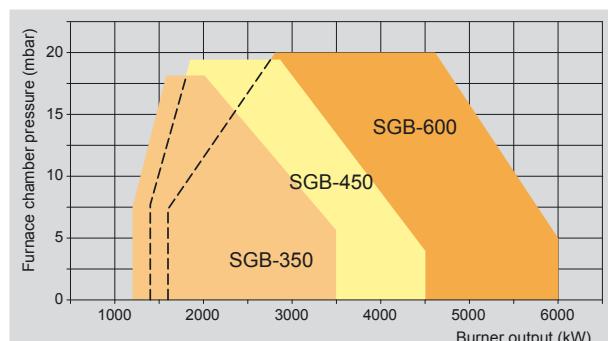
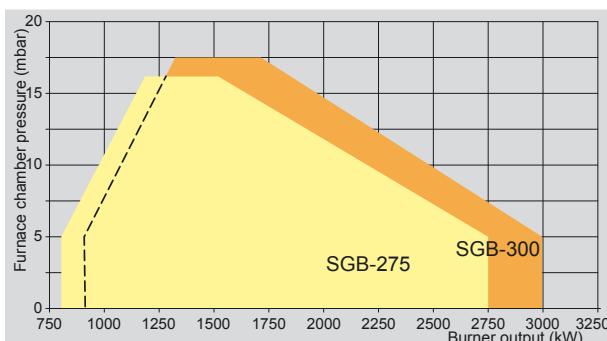
4.22 Ipari olajégők árai.Industrial oil burner export prices

Monoblock system burners.

Product group: II.



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. |
|---------------------|-----------|------|------------------------------------|---|
| | | | | Output control |
| 800-2750 | SGB-275 | | | M |
| | SGB-275 | LFO | 3x230/400V,50Hz/7,5kW | 6 780 € |
| | SGB-275-R | SHFO | 3x230/400V,50Hz/28kW | 13 750 € |
| | SGB-275-N | HFO | 3x230/400V,50Hz/28kW | 13 750 € |
| 900-3100 | SGB-300 | | | M |
| | SGB-300 | LFO | 3x230/400V,50Hz/9,5kW | 9 030 € |
| | SGB-300-R | SHFO | 3x230/400V,50Hz/30kW | 14 320 € |
| | SGB-300-N | HFO | 3x230/400V,50Hz/30kW | 14 320 € |
| 1200-3500 | SGB-350 | | | M |
| | SGB-350 | LFO | 3x230/400V,50Hz/10kW | 11 280 € |
| | SGB-350-R | SHFO | 3x230/400V,50Hz/35kW | 14 890 € |
| | SGB-350-N | HFO | 3x230/400V,50Hz/35kW | 14 890 € |
| 1400-4500 | SGB-450 | | | M |
| | SGB-450 | LFO | 3x230/400V,50Hz/10kW | 12 450 € |
| | SGB-450-R | SHFO | 3x230/400V,50Hz/36kW | 16 470 € |
| | SGB-450-N | HFO | 3x230/400V,50Hz/36kW | 16 470 € |
| 1600-6000 | SGB-600 | | | M |
| | SGB-600 | LFO | 3x230/400V,50Hz/15kW | 19 600 € |
| | SGB-600-R | SHFO | 3x230/400V,50Hz/45kW | 24 940 € |
| | SGB-600-N | HFO | 3x230/400V,50Hz/45kW | 24 940 € |



Oil supply system schemes by different output control modes:

M

OM, OMR

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

N Equipped with preheater for fuel-oils of viscosity, at 100 °C max. 40 cSt (5 E)

Optionals for request: See page Nr. 53.

4.23 Industrial oil burner export prices

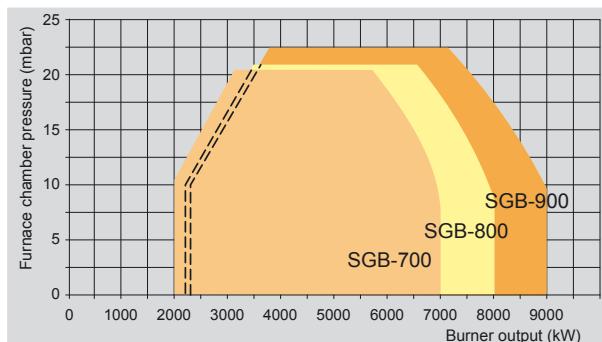


Monoblock system burners.

Product group: II..



| Nominal output (kW) | Type | Fuel | Voltage/electric power consumption | Prices without VAT in EUR-EXW-Budapest. |
|---------------------|-----------|------|------------------------------------|---|
| | | | | Output control |
| 2000-7000 | SGB-700 | | | M |
| | SGB-700 | LFO | 3x230/400V,50Hz/20kW | 22 380 € |
| | SGB-700-R | SHFO | 3x230/400V,50Hz/55kW | 28 500 € |
| | SGB-700-N | HFO | 3x230/400V,50Hz/55kW | 28 500 € |
| 2200-8000 | SGB-800 | | | M |
| | SGB-800 | LFO | 3x230/400V,50Hz/22kW | 23 150 € |
| | SGB-800-R | SHFO | 3x230/400V,50Hz/62kW | 29 420 € |
| | SGB-800-N | HFO | 3x230/400V,50Hz/62kW | 29 420 € |
| 2300-9000 | SGB-900 | | | M |
| | SGB-900 | LFO | 3x230/400V,50Hz/27kW | 23 930 € |
| | SGB-900-R | SHFO | 3x230/400V,50Hz/66kW | 30 330 € |
| | SGB-900-N | HFO | 3x230/400V,50Hz/66kW | 30 330 € |



| |
|--|
| Oil supply system schemes by different output control modes: |
| M |
| OM, OMR |

Symbols:

R Equipped with preheater for fuel-oils of viscosity, at 20 °C max. 60 cSt (8 E)

N Equipped with preheater for fuel-oils of viscosity, at 100 °C max. 40 cSt (5 E)

Optionals for request: See page Nr. 53.



5. Dual-fuel burners, production range, construction, selection, and prices

5.0 General information:

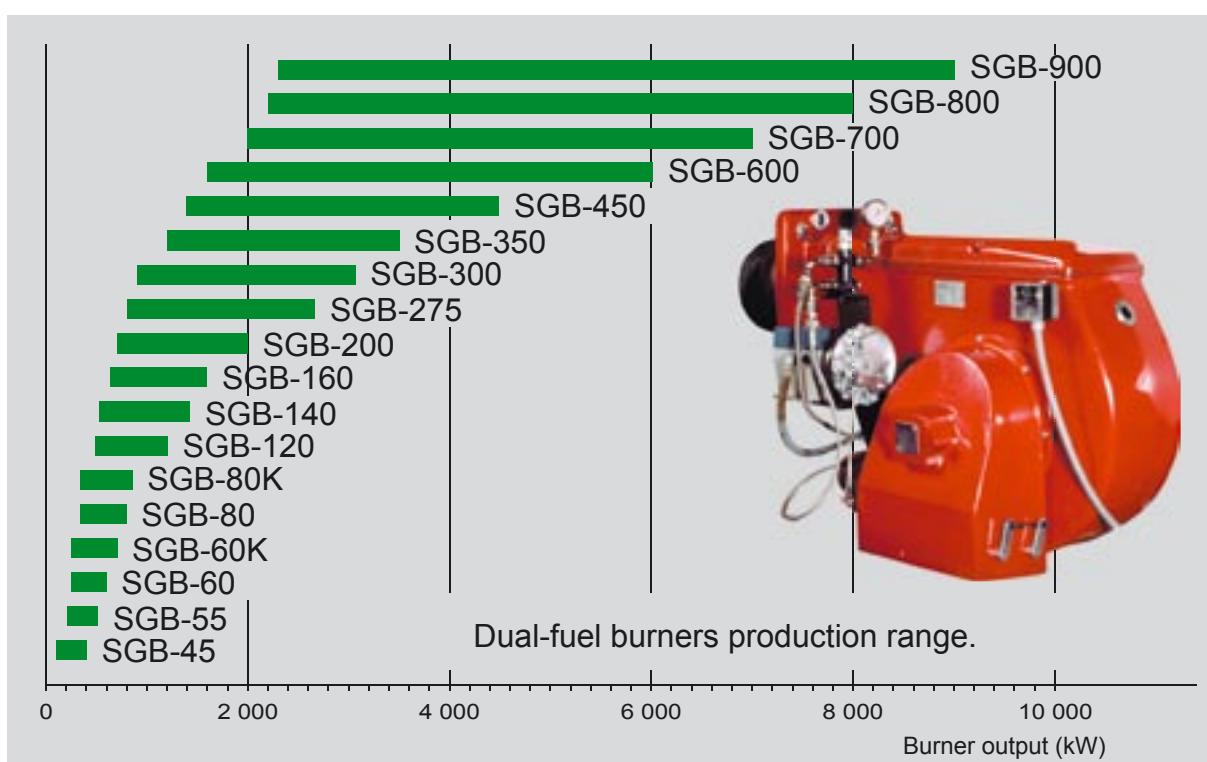
Developing the "SGB" dual-fuel burner series we should like to fulfill special request of users: to change fuel a simply, easy way, without trouble. Fuel-gas could be: natural gas or LPG, fuel-oil could be: light fuel-oil, semi-heavy fuel-oil, or heavy fuel-oil. Depending on the viscosity of the fuel-oil, our burners are equipped with fuel-oil pre-heater.

Output control modes of dual-fuel burners are as follows: HIGH/LOW fast load change, HIGH/LOW slow load change, or modulating.

The dual-fuel burners can be mounted on: warm-water-, hot-water-, steam-boilers, hot-air blowers, agricul-tural and industrial dryers, and other technological equipments.

Together with the burner, we supply separate command board with buyer requested functions.

5.01 Dual-fuel burner production range by output:



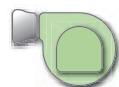
5.02 Construction:

The burner is of monoblock system, so that it contains – in one unit – all neccessary components for both gas and oil firing. User has to take in consideration both chapters of gas and oil burner construction and firing, respectively. The alternative dual-fuel firing is secured by the components, are set in the separate command board, developed especially for such kind of combustion.

5.03 Selection:

Selecting dual-fuel burners, both prescriptions: referring to gas-, and oil burners, have to be taken in consid-eration. See „Gas train schemes and selection” at chapters Nr. 2.04, and 2.05, “Oil system” at chapters Nr. 4.05, and “Dual-fuel system” at chapter Nr. 5.05

For the suitable burner selection, opinion of our our technical department, requested. For this reason we need the filled-in data-sheet (see page Nr. 60.) enclosed with your enquiry or order.

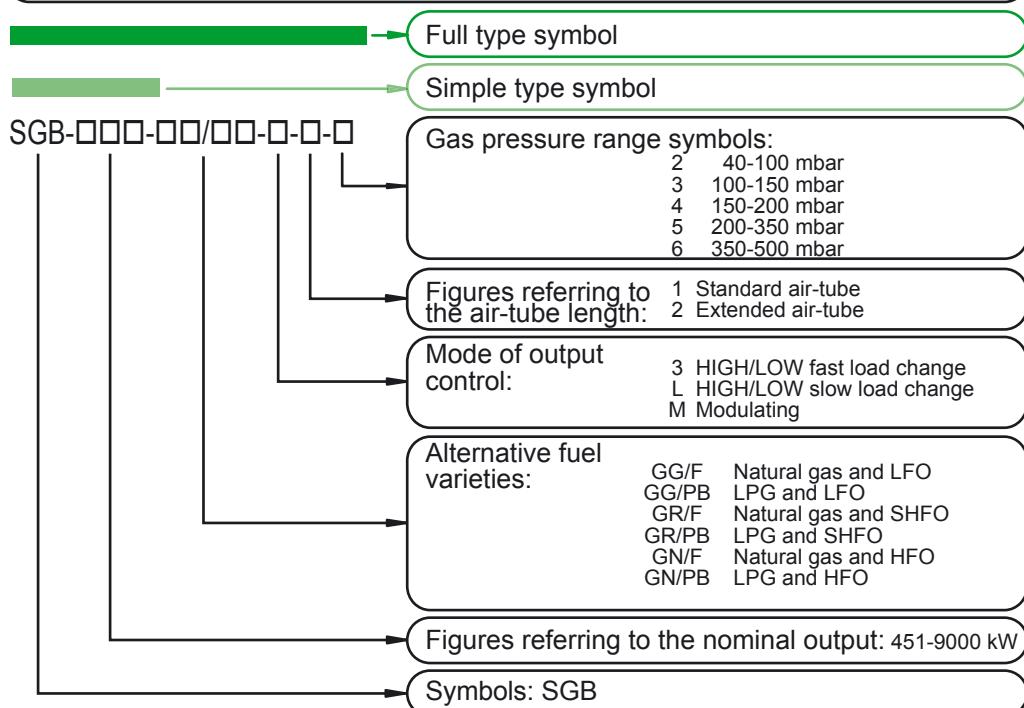


5.04 Optional accessories for extra price:

- pressure gauge
- oil-filter
- gas filter
- flexible hosing
- gas pressure governor with integrated filter up to DN 100 mm for inlet gas pressure pmax = 500 mbar
- manually operated shut-off valve for gas
- antivibrating connection (compensator) for gas pipe-line
- pressure switch
- thermostat
- pressure or temperature remote transmitter (range has to be verified)
- burner output control unit

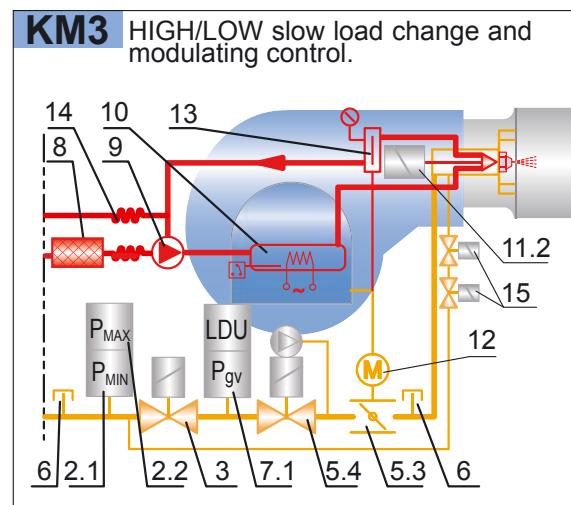
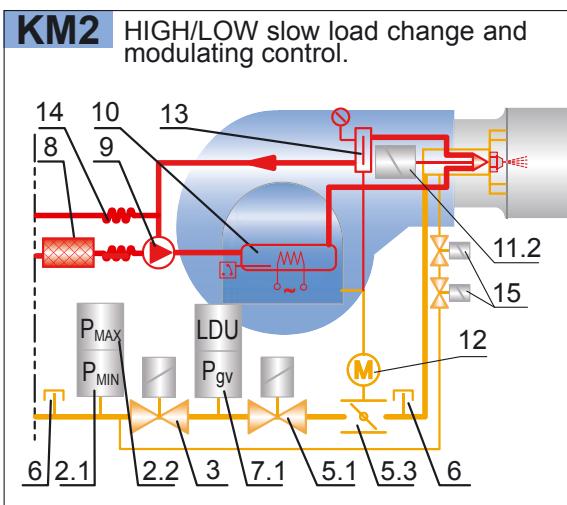
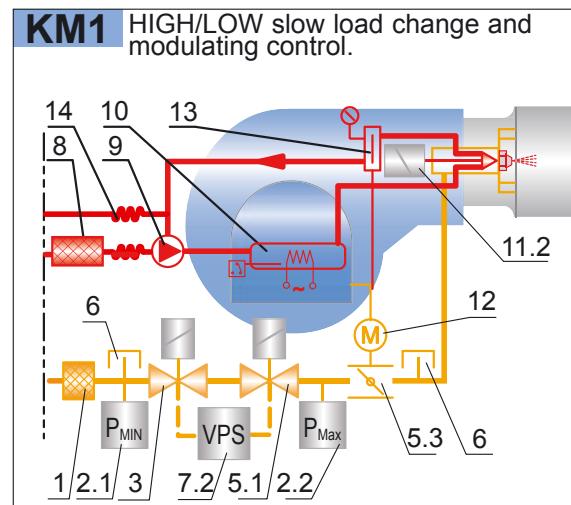
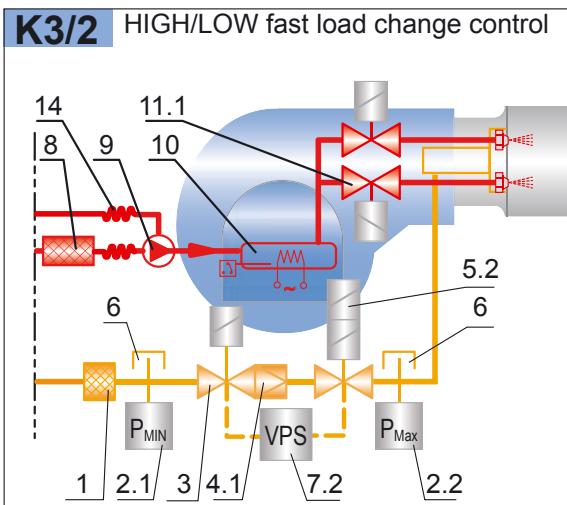
For better understanding we should like to explain the type and version system of our dual-fuel burners.

Dual fuel burner type symbols





5.05 Fuel system schemes depending on different modes of output control



| Legend | |
|--------|---|
| 1 | Filter |
| 2.1 | Min. gas pressure switch |
| 2.2 | Max. gas pressure switch |
| 3 | Safety gas valve |
| 4.1 | Gas pressure governor |
| 5.1 | Main gas valve |
| 5.2 | Two-stage main gas valve |
| 5.3 | Gas butterfly-damper |
| 5.4 | Main gas valve with pressure governor |
| 6 | Pressure measuring pin |
| 7.1 | Gas leakage control unit (Siemens) from SGB-120 |
| 8 | Oil-filter |

| | |
|------------------------------|---|
| 9 | Fuel-oil pump |
| 10 | Fuel-oil preheater |
| 11.1 | Oil solenoid valve |
| 11.2 | Oil needle solenoid valve |
| 12 | Servo motor |
| 13 | Recirculation pressure governor |
| 14 | Flexible hosing |
| 15 | Ignition gas valve |
| Optionals for special order: | |
| 7.2 | Gas leakage control unit (Dungs) up to SGB-80 |
| | Manual shut-off valve |
| | Gas filter |
| | Gas pressure governor with integrated filter |

5.1 Dual-fuel burner export price guide.



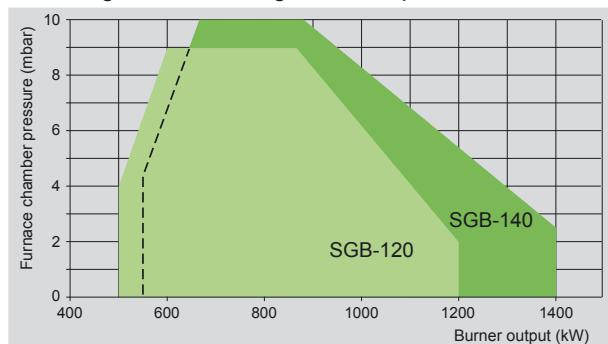
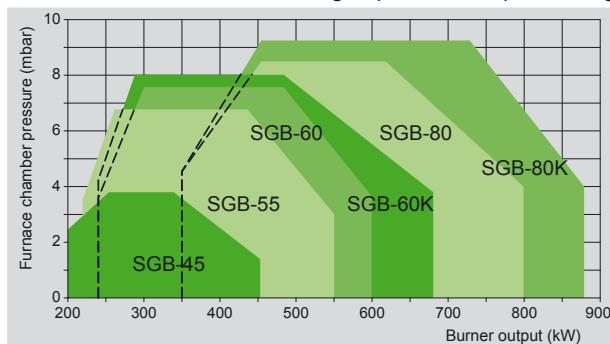
Monoblock system burners with complete gas train.

Product group: III.



| Nominal output (kW) | Type | Output control mode | Inlet natural gas pressure (mbar) | Gas train | Prices without VAT in EUR-EXW-Budapest. | | |
|---------------------|---------|---------------------|-----------------------------------|-----------|---|----------|----------|
| | | | | | GG | GR | GN |
| 200-450 | SGB-45 | 3 | 20-100 | 1 ½" | 3 780 € | 4 730 € | |
| | | | 100-350 | 1" | 3 530 € | 4 420 € | |
| 220-550 | SGB-55 | 3 | 20-150 | 1 ½" | 5 050 € | 6 300 € | |
| | | | 150-350 | 1" | 4 600 € | 5 750 € | |
| 240-600 | SGB-60 | 3 | 20-150 | 1 ½" | 5 570 € | 6 960 € | |
| | | | 150-350 | 1" | 5 110 € | 6 390 € | |
| 240-680 | SGB-60K | 3 | 20-150 | 1 ½" | 5 570 € | 6 960 € | |
| | | | 150-350 | 1" | 5 110 € | 6 390 € | |
| 350-800 | SGB-80 | 3 | 20-40 | 2" | 6 520 € | 8 160 € | |
| | | | 40-350 | 1 ½" | 6 210 € | 7 770 € | |
| 350-880 | SGB-80K | 3 | 20-40 | 2" | 6 520 € | 8 160 € | |
| | | | 40-350 | 1 ½" | 6 210 € | 7 770 € | |
| 500-1200 | SGB-120 | 3 | 40-100 | 2" | 8 170 € | 9 390 € | |
| | | | 100-350 | 1 ½" | 7 780 € | 8 940 € | |
| | | L and M | 40-100 | 2" | 10 080 € | 11 600 € | 12 760 € |
| | | | 100-350 | 1 ½" | 9 820 € | 11 290 € | 12 410 € |
| 550-1400 | SGB-140 | 3 | 40-100 | 2" | 8 900 € | 10 240 € | |
| | | | 100-350 | 1 ½" | 8 500 € | 9 770 € | |
| | | L and M | 40-100 | 2" | 10 990 € | 12 640 € | 13 910 € |
| | | | 100-350 | 1 ½" | 10 710 € | 12 320 € | 13 550 € |

Between 350-500 mbar inlet gas pressure, a pressure governor integration into the gas train requested



Optionals for request: See page Nr. 53.



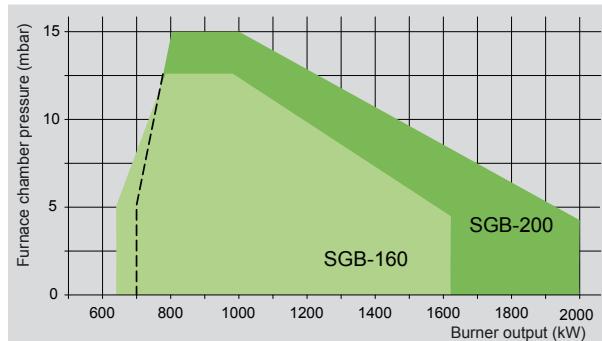
5.1 Dual-fuel burner export price guide.

Monoblock system burners with complete gas train.

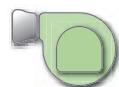
Product group: III.



| Nominal output (kW) | Type | Output control mode | Inlet natural gas pressure (mbar) | Gas train | Prices without VAT in EUR-EXW-Budapest. | | |
|---------------------|---------|---------------------|-----------------------------------|-----------|---|----------|----------|
| | | | | | GG | GR | GN |
| 640-1600 | SGB-160 | 3 | 30-100 | DN 80 | 10 730 € | 12 340 € | |
| | | | 100-150 | 2" | 8 820 € | 10 140 € | |
| | | | 150-200 | 1 ½" | 8 420 € | 9 680 € | |
| | | | 200-500 | 1 ½" | 9 570 € | 11 010 € | |
| | | L and M | 30-100 | DN 80 | 13 940 € | 16 030 € | 17 630 € |
| | | | 100-150 | 2" | 10 500 € | 12 070 € | 13 280 € |
| | | | 150-200 | 1 ½" | 10 210 € | 11 740 € | 12 920 € |
| | | | 200-500 | 1 ½" | 11 430 € | 13 150 € | 14 460 € |
| 700-2000 | SGB-200 | 3 | 30-100 | DN 80 | 11 030 € | 13 460 € | |
| | | | 100-150 | 2" | 9 120 € | 11 120 € | |
| | | | 150-200 | 1 ½" | 8 720 € | 10 640 € | |
| | | | 200-500 | 1 ½" | 9 660 € | 11 790 € | |
| | | L and M | 30-100 | DN 80 | 14 060 € | 15 460 € | 17 020 € |
| | | | 100-150 | 2" | 10 610 € | 13 040 € | 14 350 € |
| | | | 150-200 | 1 ½" | 10 330 € | 12 920 € | 14 200 € |
| | | | 200-500 | 1 ½" | 11 560 € | 13 460 € | 14 810 € |



Optionals for request: See page Nr. 53.



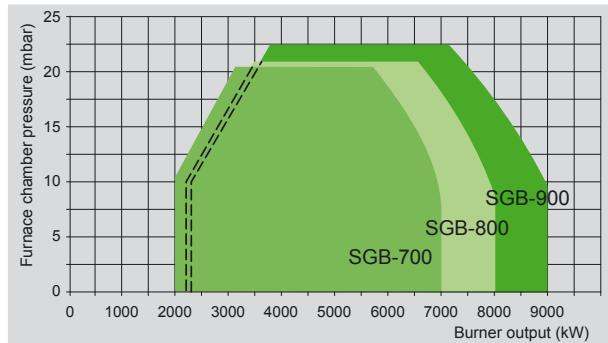
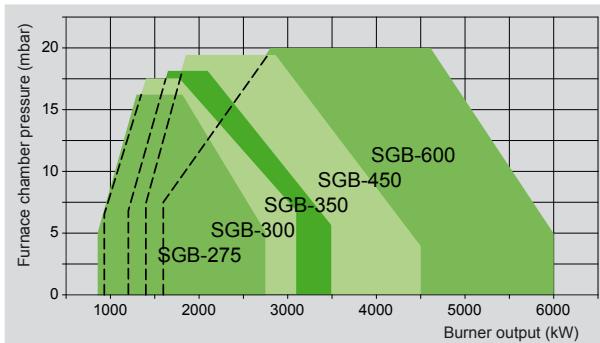
5.1 Dual-fuel burner export price guide.

Monoblock system burners with complete gas train.

Product group: III.



| Nominal output (kW) | Type | Output control mode | Inlet natural gas pressure (mbar) | Gas train | Prices without VAT in EUR-EXW-Budapest. | | |
|---------------------|---------|---------------------|-----------------------------------|-----------|---|----------|----------|
| | | | | | GG | GR | GN |
| 800-2750 | SGB-275 | L and M | 40-150 | DN 80 | 16 170 € | 19 090 € | 19 090 € |
| | | | 150-200 | 2" | 12 720 € | 17 700 € | 17 700 € |
| | | | 200-350 | 2" | 13 770 € | 18 120 € | 18 120 € |
| | | | 350-500 | 1 ½" | 13 670 € | 18 080 € | 18 080 € |
| 900-3100 | SGB-300 | L and M | 40-150 | DN 80 | 17 620 € | 19 870 € | 19 870 € |
| | | | 150-200 | 2" | 14 170 € | 18 490 € | 18 490 € |
| | | | 200-350 | 2" | 15 210 € | 18 910 € | 18 910 € |
| | | | 350-500 | 1 ½" | 15 110 € | 18 870 € | 18 870 € |
| 1200-3500 | SGB-350 | L and M | 100-150 | DN 80 | 17 930 € | 20 740 € | 20 740 € |
| | | | 150-200 | 2" | 14 480 € | 19 420 € | 19 420 € |
| | | | 200-500 | 2" | 15 520 € | 19 730 € | 19 730 € |
| 1400-4500 | SGB-450 | L and M | 100-200 | DN 80 | 22 240 € | 23 640 € | 23 640 € |
| | | | 200-500 | 2" | 18 780 € | 22 420 € | 22 420 € |
| 1600-6000 | SGB-600 | L and M | 150-200 | DN 80 | 27 210 € | 32 390 € | 32 390 € |
| | | | 200-350 | DN 80 | 27 560 € | 32 500 € | 32 500 € |
| | | | 350-500 | 2" | 24 900 € | 31 690 € | 31 690 € |
| 2000-7000 | SGB-700 | L and M | 150-200 | DN 100 | 33 290 € | 37 690 € | 37 690 € |
| | | | 200-500 | DN 80 | 32 510 € | 37 460 € | 37 460 € |
| 2200-8000 | SGB-800 | L and M | 150-200 | DN 100 | 34 560 € | 38 950 € | 38 950 € |
| | | | 200-500 | DN 80 | 33 790 € | 38 730 € | 38 730 € |
| 2300-9000 | SGB-900 | L and M | 150-200 | DN 100 | 35 820 € | 40 210 € | 40 210 € |
| | | | 200-500 | DN 80 | 35 060 € | 39 980 € | 39 980 € |



Optionals for request: See page Nr. 53.



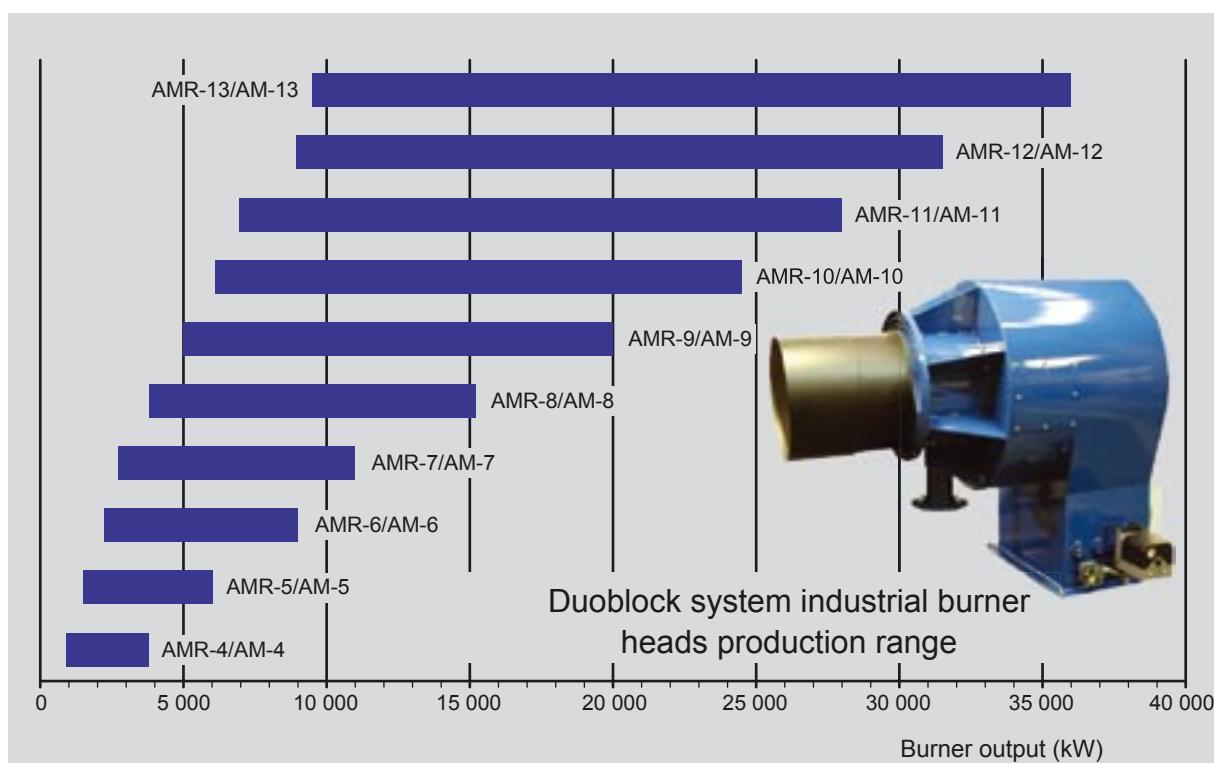
6.0 General information:

Developing the AM and AMR burner series, we intended to fulfill special requirements (compatibility with higher furnace chamber pressures, use of preheated combustion-air, for example). Burners could be single-fuel-, or dual-fuel firing ones. At dual fuel burners fuel-change is very simple and troubleless. Fuel gas could be natural gas or LPG. Usable oils: light-, semi-heavy-, and heavy fuel-oil. Dual-fuel burners are able to combust gas and fuel-oil in alternative running.

The AM and AMR type burners are modulating output-regulated, fully automatically controlled firing appliances.

The burners can be mounted on: warm-water-, hot-water-, steam-boilers, hot-air blowers, agricultural and industrial heating appliances, and other technological equipments, fitted to furnaces of overpressure and de-pressure.

6.01 Duoblock system industrial burner head production range:



6.02 Construction:

The AM and AMR type burners are fully automatically, modulating controlled, forced combustion-air supplied, firing equipments with separate combustion-air fan. The burner consists of the following preassembled main-units: burner head, gas train (at gas and dual-fuel versions), complete oil-preparation unit (at oil and dual-fuel versions), oil-pre-heater (at semi-heavy and heavy fuel-oil and respective dual-fuel versions) command board, and combustion-air fan.

Together with the burner we supply separate command board with functions by the buyer's request.

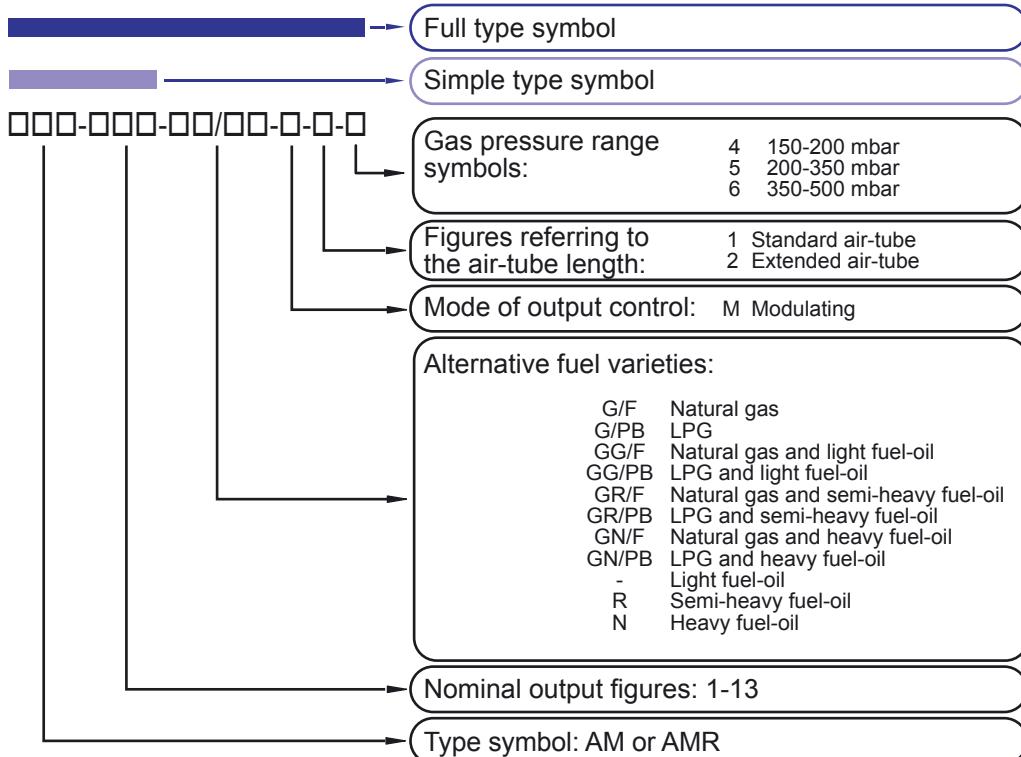
6.03 Selection:

For selection the suitable burner the opinion of our technical department is requested. For this reason we need the filled-in data-sheet, (see page Nr. 60.) enclosed with your enquiry or order.



For better understanding we should like to explain the type and version system of the AM and AMR type burner heads.

Duoblock system industrial burner head type symbols





6.1 Industrial burner head export price guide.



Duoblokk építési rendszerrel, komplett gázrámpával, vezérlőszekrénnnyel, folyamatos szabályozással.

Termékcsoporth: III.



| Type | Nominal output (kW) | Gas train DN at 200-350 mbar inlet gas pressure range | Catalogue price without VAT in EUR EXW-Budapest | | | | |
|--------|---------------------|---|---|----------------|----------------|------------------------|------------------------|
| | | | Single-fuel burners | | | Dual-fuel burners | |
| | | | Gas | Light fuel-oil | Heavy fuel-oil | Gas and light fuel-oil | Gas and heavy fuel-oil |
| | | | G | | N | GG | GN |
| AMR-4 | 3800 | 2" | 16 360 € | 14 330 € | 18 940 € | 22 430 € | 28 040 € |
| AMR-5 | 6000 | DN 80 | 21 410 € | 20 500 € | 26 070 € | 27 560 € | 32 500 € |
| AMR-6 | 9000 | DN 80 | 27 550 € | 25 020 € | 31 720 € | 35 060 € | 39 980 € |
| AMR-7 | 11000 | DN 80 | 30 270 € | 28 410 € | 34 810 € | 38 540 € | 43 590 € |
| AMR-8 | 15200 | DN 100 | 36 070 € | 32 780 € | 41 480 € | 46 340 € | 51 910 € |
| AMR-9 | 20000 | DN 125 | 41 440 € | 39 960 € | 45 890 € | 56 590 € | 62 510 € |
| AMR-10 | 24500 | DN 125 | 46 730 € | 47 420 € | 53 120 € | 64 780 € | 70 470 € |
| AMR-11 | 28000 | DN 125 | SP | SP | SP | SP | SP |
| AMR-12 | 31500 | DN 150 | SP | SP | SP | SP | SP |
| AMR-13 | 36000 | DN 150 | SP | SP | SP | SP | SP |

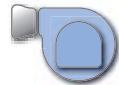
| Type | Nominal output (kW) | Gas train DN at 200-350 mbar inlet gas pressure range | Catalogue price without VAT in EUR EXW-Budapest | | | | |
|-------|---------------------|---|---|----------------|----------------|------------------------|------------------------|
| | | | Single-fuel burners | | | Dual-fuel burners | |
| | | | Gas | Light fuel-oil | Heavy fuel-oil | Gas and light fuel-oil | Gas and heavy fuel-oil |
| | | | G | | N | GG | GN |
| AM-1 | 840 | 1 ½" | 5 970 € | 3 790 € | 9 760 € | 12 140 € | 15 910 € |
| AM-2 | 1670 | 1 ½" | 9 140 € | 6 980 € | 11 660 € | 14 160 € | 17 200 € |
| AM-3 | 2800 | 1 ½" | 12 230 € | 9 940 € | 15 760 € | 16 250 € | 22 280 € |
| AM-4 | 3800 | 2" | 13 910 € | 12 170 € | 16 100 € | 19 070 € | 23 830 € |
| AM-5 | 6000 | DN 80 | 18 200 € | 17 430 € | 22 160 € | 23 430 € | 27 620 € |
| AM-6 | 9000 | DN 80 | 23 420 € | 21 270 € | 26 970 € | 29 800 € | 33 990 € |
| AM-7 | 11000 | DN 80 | 25 730 € | 24 140 € | 29 590 € | 32 760 € | 37 050 € |
| AM-8 | 15200 | DN 100 | 30 660 € | 27 870 € | 35 260 € | 39 390 € | 44 130 € |
| AM-9 | 20000 | DN 125 | 35 230 € | 33 970 € | 39 010 € | 48 100 € | 53 140 € |
| AM-10 | 24500 | DN 125 | 39 720 € | 40 300 € | 45 140 € | 55 060 € | 59 900 € |
| AM-11 | 28000 | DN 125 | SP | SP | SP | SP | SP |
| AM-12 | 31500 | DN 150 | SP | SP | SP | SP | SP |
| AM-13 | 36000 | DN 150 | SP | SP | SP | SP | SP |

Symbols:

* These burner versions can be delivered only after consulting with the manufacturer

SP Special price on the base of technical consulting

Optionals for request: See page Nr. 53.



7.0 General informations:

On the base of claims of the burners' using, we manufacture for technological targets, also unical equipments for our clients.

Special versions can be:

- for high temperature - max 450 C - furnaces, zinc-basins, glass industry heat-treatment ,
- for rotation-drum type dryers of sand-, clay-, and smashed stone peaces.
- auxiliary burners for power station boilers
- sewage-water gas-, agricultual biogas-, or garbage heap's depony burners

Wide range of the fuels, theirs special mixture is also possible as follows:

- at gaseous fuels
 - natural gas, LPG in alternative running
 - biogas , natural gas in alternative running
 - crude gas at oil explotation
- at liquid fuels
 - alcohol injection with air pulverization
 - dangerous waste injection with air pulverization
 - glicerine-heavy fuel oil mixture
 - crude oil
 - vegetable oils (sun flower grains, rape grains)
 - biodiesel

7.1. Examples



Biogas burner



Glass works heat treatment unit



Natural gas - LPG alternative firing burner



Pressured-air pulverized burner

8. HG and HGV duct gas burners' price guide.

With complete gas train and modulating output control.

Product group: IV.

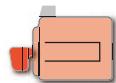


The HG and HGV type gas burner family was developed for heating technological-process air. The HG type burners can be mounted in ducts of adequate air-speed, without any separate combustion-air supply. The HGV type burners are equipped with separate combustion-air fan, so they can be mounted even in low-speed air-ducts as well. The burners are applicable on the most various fields of the industry and agriculture, where there is a need for air preheating. Such appliances can be the high-temperature hot-air blowers, drier-furnaces, grain-driers, etc. The burners can be connected with each other in different varietyon, so that a really wide construc-tion-range can be created. For this reason these prices serve only for information.

Final price can be calculated, after verifying the final technical configuration in any case.

| Nominal output (kW) | Type | Output control mode | Inlet gas pressure (mbar) | Gas train | Prices without VAT in EUR-EXW-Budapest | |
|---------------------|--------|---------------------|---------------------------|-----------|--|--|
| | | | | | M | |
| 60-500 | HG-50 | M | 30-150 | 1 ½" | 4 830 € | |
| 150-1000 | HG-100 | | 40-150 | 2" | 6 520 € | |
| | | | 150-500 | 1 ½" | 5 860 € | |
| 200-1500 | HG-150 | M | 40-200 | 2" | 8 160 € | |
| | | | 200-500 | 1 ½" | 7 590 € | |
| 300-2000 | HG-200 | M | 40-100 | DN 80 | 11 190 € | |
| | | | 100-500 | 2" | 9 060 € | |
| 400-3000 | HG-300 | M | 40-150 | DN 80 | 13 130 € | |
| | | | 150-500 | 2" | 10 230 € | |
| | | | 40-200 | 2 x 2" | 16 140 € | |
| | | | 200-500 | 2 x 1 ½" | 14 740 € | |
| 600-4000 | HG-400 | M | 40-200 | DN 80 | 15 750 € | |
| | | | 200-500 | 2 x 2" | 17 780 € | |
| 900-6000 | HG-600 | M | 40-200 | 2xDN 80 | 23 830 € | |
| | | | 200-500 | 2 x 2" | 22 620 € | |

| Nominal output (kW) | Type | Output control mode | Inlet gas pressure (mbar) | Gas train | Prices without VAT in EUR-EXW-Budapest | |
|---------------------|---------|---------------------|---------------------------|-----------|--|--|
| | | | | | M | |
| 60-500 | HGV-50 | M | 30-150 | 1 ½" | 5 240 € | |
| 150-1000 | HGV-100 | | 40-150 | 2" | 7 350 € | |
| | | | 150-500 | 1 ½" | 6 680 € | |
| 200-1500 | HGV-150 | M | 40-200 | 2" | 9 400 € | |
| | | | 200-500 | 1 ½" | 8 850 € | |
| 300-2000 | HGV-200 | M | 40-100 | DN 80 | 12 850 € | |
| | | | 100-500 | 2" | 10 730 € | |
| 400-3000 | HGV-300 | M | 40-150 | DN 80 | 15 630 € | |
| | | | 150-500 | 2" | 12 090 € | |
| | | | 40-200 | 2 x 2" | 18 650 € | |
| | | | 200-500 | 2 x 1 ½" | 17 240 € | |
| 600-4000 | HGV-400 | M | 40-200 | DN 80 | 19 090 € | |
| | | | 200-500 | 2 x 2" | 21 100 € | |
| 900-6000 | HGV-600 | M | 40-200 | 2xDN 80 | 28 820 € | |
| | | | 200-500 | 2 x 2" | 27 610 € | |



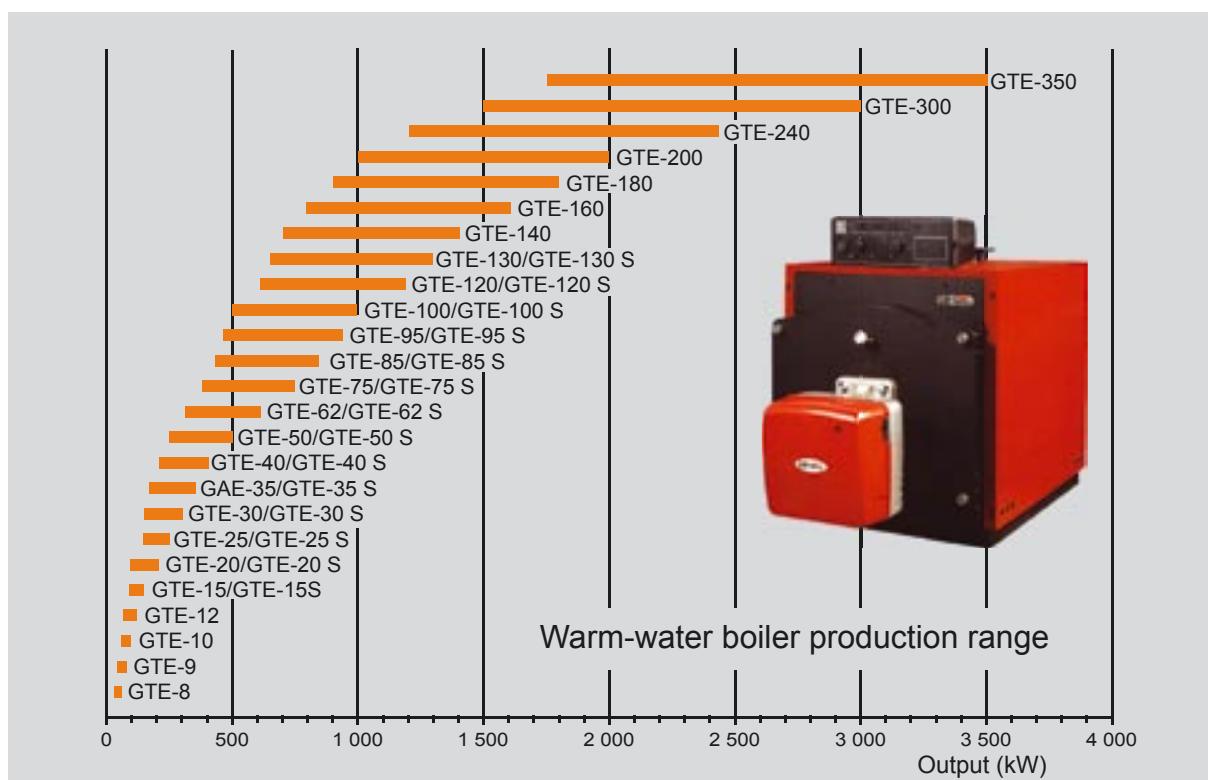
Product group: V.

9.01 General information

The GTE type overpressured, high-efficiency, welded-steel boilers are supplied with gas-, oil-, or dual-fuel burners respectively. The GTE boilers are CE certified.. Developing the GTE boiler family the prescriptions in guidelines for gas 90/396/CEE and for boiler efficiency 92/42/CEE were taken in con-consideration. The flame fills properly the reverse-type furnace chamber in, without dead-spaces. The radiation of the refractory door helps the perfect afterburning of the gases. The special turbulators, set in the convective stage fume-gas pipes secure the uniform heat transfer along the tubes. The boiler door can be opened alterna-tively, both at right-side or left-side, even the upper-, or lower-opening facilities are possible, as options, for spe-cial request. The boiler heat insulation were taken in special consideration for reducing the radiation loss. There is a thick laminated mineral-cotton heat insulation under the removable boiler cover.

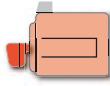
The GTE BF type boilers consist of two pieces, similar capacity boilers, one superimposed on the other, each has its own furnace chamber. Such boilers are advantageous in safety working consideration. The working flexibility makes the requested output control possible, keeping the efficiency on a constant nivvel. The control panel is mounted on the upper side of the boiler. Its construction makes possible to set in higher-level control unit beside the standard equipment for the buyer's request.

9.02 Production range



9.03 Selection

Selecting the suitable boiler type, requirements written in the „Designers' handbook of boilers” have to be taken in consideration.



9.11 Three-pass furnace chambered warm-water boilers



Product group: V.

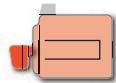


| Type | Nominal output (kW) | Heating load (kW) | Recommended burner type | | Catalogue price EUR-EXW |
|-----------|---------------------|-------------------|-------------------------|-------------------|-------------------------|
| | | | Gas firing | Oil firing | |
| GTE 10-H | 100 | 110 | ABG-10 | N-10-C | 2 350 € |
| GTE 12-H | 130 | 143 | EURO-15-G / ABG-30-D | EURO-15 / ANYO-12 | 2 650 € |
| GTE 13-H | 150 | 167 | EURO-25-G / ABG-30-E | EURO-25 / ANYO-25 | 2 720 € |
| GTE 16-H | 180 | 198 | EURO-25-G / ABG-30 | EURO-25 / ANYO-25 | 3 050 € |
| GTE 18-H | 200 | 220 | ABG-30 | ANYO-25 | 3 230 € |
| GTE 20-H | 250 | 275 | ABG-30 | ANYO-25 | 3 910 € |
| GTE 25-H | 300 | 330 | ABG-40K | ANYO-45 | 4 270 € |
| GTE 30-H | 350 | 385 | ABG-40K | ANYO-45 | 4 480 € |
| GTE 35-H | 400 | 439 | ABG-45K | ANYO-45 | 4 780 € |
| GTE 40-H | 450 | 495 | ABG-55 | ANYO-55 | 5 290 € |
| GTE 45-H | 500 | 549 | ABG-60K | ANYO-60 | 5 690 € |
| GTE 50-H | 600 | 659 | ABG-60K/ABG-80 | ANYO-60K/ANYO-80 | 6 360 € |
| GTE 60-H | 700 | 769 | ABG-80K | ANYO-80 | 7 320 € |
| GTE 70-H | 800 | 879 | ABG-80K | ANYO-80 | 8 000 € |
| GTE 80-H | 900 | 989 | SGB-120-G | SGB-120 | 8 560 € |
| GTE 90-H | 1000 | 1099 | SGB-140-G | SGB-140 | 9 510 € |
| GTE-100-H | 1150 | 1265 | SGB-140-G | SGB-140 | 10 310 € |
| GTE-125-H | 1400 | 1540 | SGB-160-G | SGB-160 | 13 630 € |
| GTE-135-H | 1500 | 1650 | SGB-200-G | SGB-200 | 15 190 € |
| GTE-150-H | 1700 | 1870 | SGB-200-G | SGB-200 | 15 890 € |
| GTE-170-H | 2000 | 2200 | SGB-275-G | SGB-275 | 18 030 € |
| GTE-205-H | 2300 | 2530 | SGB-275-G | SGB-275 | 19 620 € |
| GTE-255-H | 2900 | 3190 | SGB-350-G | SGB-350 | 24 560 € |
| GTE-305-H | 3500 | 3850 | SGB-450-G | SGB-450 | 28 905 € |

- Boiler prices do not include the burner
- Control has to be selected, suitable to the requested heating system, and has to be ordered as optional
- Under 150 kW output all boiler can be ordered with ON/OFF, HIGH/LOW or Modulating output controlled burner.
- Over 150 kW boiler output we supply the boilers with HIGH/LOW output controlled burners, as standard, but for special request we can deliver them also with Modulating output control as well.
- For more information, see the „Designers’ handbook of boilers”



9.12 Reversal furnace chambered warm-water boilers

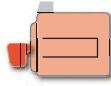


Product group: V.



| Type | Nominal output (kW) | Heating load (kW) | Recommended burner type | | Catalogue price EUR-EXW |
|---------|---------------------|-------------------|-------------------------|------------------|-------------------------|
| | | | Gas firing | Oil firing | |
| GTE 8 | 80 | 87 | ABG-10/EURO-10-G | N-10-C/EURO-10 | 1 200 € |
| GTE 9 | 90 | 98 | ABG-10 | N-10-C | 1 270 € |
| GTE 10 | 100 | 109 | ABG-10 | N-10-C | 1 390 € |
| GTE 12 | 120 | 131 | ABG-30-D/EURO-15-G | ANYO-12/EURO-15 | 1 490 € |
| GTE 15 | 150 | 163 | ABG-30-E/EURO-25-G | ANYO-25/EURO-25 | 1 970 € |
| GTE 20 | 200 | 218 | ABG-30/EURO-25-G | ANYO-25/EURO-25 | 2 090 € |
| GTE 25 | 250 | 272 | ABG-35K | ANYO-35K | 2 310 € |
| GTE 30 | 300 | 325 | ABG-40K | ANYO-45K | 2 460 € |
| GTE 35 | 350 | 380 | ABG-45K | ANYO-45K | 3 300 € |
| GTE 40 | 400 | 433 | ABG-55 | ANYO-55 | 3 390 € |
| GTE 50 | 500 | 542 | ABG-60 | ANYO-60 | 3 810 € |
| GTE 62 | 620 | 672 | ABG-60K/ABG-80 | ANYO-60K/ANYO-80 | 4 270 € |
| GTE 75 | 750 | 813 | ABG-80K | ANYO-80K | 4 780 € |
| GTE 85 | 850 | 921 | SGB-120-G | SGB-120 | 5 130 € |
| GTE 95 | 950 | 1030 | SGB-120-G | SGB-120 | 6 500 € |
| GTE 100 | 1020 | 1106 | SGB-120-G | SGB-120 | 6 680 € |
| GTE 120 | 1200 | 1301 | SGB-160-G | SGB-160 | 8 090 € |
| GTE 130 | 1300 | 1409 | SGB-160-G | SGB-160 | 8 310 € |
| GTE 140 | 1400 | 1517 | SGB-200-G | SGB-200 | 8 480 € |
| GTE 160 | 1600 | 1733 | SGB-200-G | SGB-200 | 10 690 € |
| GTE 180 | 1800 | 1950 | SGB-275-G | SGB-275 | 11 190 € |
| GTE 200 | 2000 | 2167 | SGB-275-G | SGB-275 | 13 830 € |
| GTE 240 | 2400 | 2600 | SGB-300-G | SGB-300 | 14 120 € |
| GTE 300 | 3000 | 3250 | SGB-350-G | SGB-350 | 16 860 € |
| GTE 350 | 3500 | 3792 | SGB-450-G | SGB-450 | 20 180 € |

- Boiler prices do not include the burner
- Control has to be selected, suitable to the requested heating system, and has to be ordered as optional
- Under 150 kW output all boiler can be ordered with ON/OFF, HIGH/LOW or Modulating output controlled burner.
- Over 150 kW boiler output we supply the boilers with HIGH/LOW output controlled burners, as standard, but for special request we can deliver them also with Modulating output control as well.
- For more information, see the „Designers’ handbook of boilers”



9.13 Reversal furnace chambered warm-water boilers



Product group: V.

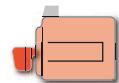


| Type | Nominal output (kW) | Heating load (kW) | Recommended burner type | | Catalogue price EUR-EXW |
|------------|---------------------|-------------------|-------------------------|--------------------|-------------------------|
| | | | Gas firing (2 pcs) | Oil firing (2 pcs) | |
| GTE 16 BF | 160 | 174 | ABG-10/EURO-10 | N-10-C | 4 300 € |
| GTE 18 BF | 180 | 196 | ABG-10 | N-10-C | 4 370 € |
| GTE 20 BF | 200 | 218 | ABG-10 | N-10-C | 4 480 € |
| GTE 24 BF | 240 | 261 | ABG-30-D/EURO-15-G | ANYO-12/EURO-15 | 4 700 € |
| GTE 30 BF | 300 | 326 | ABG-30-E/EURO-25-G | ANYO-25/EURO-25 | 4 900 € |
| GTE 40 BF | 400 | 433 | ABG-30/EURO-25-G | ANYO-25 / EURO-25 | 5 080 € |
| GTE 50 BF | 500 | 544 | ABG-35K | ANYO-35K | 6 150 € |
| GTE 60 BF | 600 | 650 | ABG-40K | ANYO-45K | 6 560 € |
| GTE 70 BF | 700 | 760 | ABG-45K | ANYO-45K | 7 340 € |
| GTE 80 BF | 800 | 868 | ABG-55 | ANYO-55 | 8 560 € |
| GTE 100 BF | 1000 | 1084 | ABG-55 | ANYO-55 | 10 650 € |
| GTE 124 BF | 1240 | 1344 | ABG-60K/ABG-80 | ANYO-60K/ANYO-80 | 11 230 € |
| GTE 150 BF | 1500 | 1626 | ABG-80K | ANYO-80K | 14 030 € |
| GTE 170 BF | 1700 | 1842 | SGB-120-G | SGB-120 | 15 850 € |

- Boiler prices do not include the burner
- Control has to be selected, suitable to the requested heating system, and has to be ordered as optional
- Under 150 kW output all boiler can be ordered with ON/OFF, HIGH/LOW or Modulating output controlled burner.
- Over 150 kW boiler output we supply the boilers with HIGH/LOW output controlled burners, as standard, but for special request we can deliver them also with Modulating output control as well.
- For more information, see the „Designers' handbook of boilers”



9.2 A GTE boiler-, and heating-controls basic examples



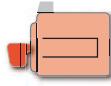
Product group: V.



For detailed using examples see our issue, titled „Designers' handbook of boilers”

| Type | Using examples | Fig. | Catalogue price EUR-EXW |
|-------------|---|------|-------------------------|
| GAE-REG-1.1 | 1 pc boiler, and 1 pc heating circle, (without recycle) | 3.1 | 371 € |
| GAE-REG-1.2 | 1 pc boiler, 1 pc heating circle, and sanitary hot water (without recycle) | 3.3 | 381 € |
| GAE-REG-2.1 | 1 pc boiler, 1 pc heating circle, recycle by valve | 3.2 | 474 € |
| GAE-REG-2.2 | 1 pc boiler, 1 pc heating circle, recycle by valve and sanitary hot water | 3.4 | 464 € |
| GAE-REG-2.3 | 1 pc boiler, 1 pc heating circle, recycle by pump | 3.3 | 381 € |
| GAE-REG-2.4 | 1 pc boiler, 1 pc heating circle by pump, and sanitary hot water | 3.6 | 464 € |
| GAE-REG-3.1 | 1 pc boiler, 1 pc heating circle by pump, and sanitary hot water | 3.7 | 1 510 € |
| GAE-REG-3.2 | 1 pc boiler, 2 pcs heating circles, recycle by pump, and sanitary hot water | 3.8 | 1 510 € |
| GAE-REG-4.1 | 2 pcs boilers, 3 heating circles, and sanitary hot water, circulation pump for each boiler, (heating circle recycle by valve) | 3.9 | 2 320 € |
| GAE-REG-4.2 | 2 pcs boilers, 3 heating circles and sanitary hot water, hydraulic short-circuit, 2 pcs circulation pumps (heating circuit recycle by valve) | 3.10 | 2 320 € |
| GAE-REG-5.1 | 3 pcs boilers, one heating circle and sanitary hot water, common recycle pump | 3.15 | 1 170 € |
| GAE-REG-6.1 | 2 pcs boilers, 3 pcs heating circle and sanitary hot water, hydraulic short-circuit with direct boiler connection | 3.14 | 2 420 € |
| GAE-REG-7.1 | 3 pcs boilers, 3 pcs heating circuits and sanitary hot water, common recycle pump | 3.13 | 2 730 € |
| GAE-REG-8.1 | 2 pcs boilers, 3 pcs heating circles and sanitary hot water, recycle by valve for each boiler, forward and return distributor, connected by control valve | 3.12 | 3 070 € |
| GAE-REG-9.1 | 3 pcs boilers, 3 pcs heating circles and sanitary hot water, boiler circle recycle by pump | 3.11 | 3 490 € |
| | Inner temperature detector for each heating circle | | 22 € |

Note: In the above examples the Albatros type controls are compatible with ON/OFF, HIGH/LOW and Modulating output-controlled burners. For working out a control system, different from the above examples, for the buyer's request our colleagues willingly are the user's disposal.



10.0 Infra-red heaters



Product group: V.



| Type | Output (kW) | | | Outline dimensions LxW (m) | Export catalogue prices in EUR-EXW-Budapest without VAT |
|--------|-------------|-----------|-----------|----------------------------|---|
| | Nominal | Efficient | Radiating | | |
| FSU-15 | 15 | 15/13,5* | 9,5 | 3,8x0,65 | 880 € |
| FSU-30 | 30 | 30/27* | 19 | 5,8x0,65 | 970 € |
| FSU-45 | 45 | 45/40,5* | 28,4 | 7,8x0,65 | 1 130 € |

* Fume gas issued into the heated area / Fume gas issued into the outer area

Price includes complete heating appliance with flexi-hose, fume-gas fan, and electrical control.

For special order we deliver also room-thermostat.

For adequate operating take in consideration the following data at designing and installing:

| Type | Outline dimensions LxW (m) | Recommended suspension height H (m) | Radiated surface | | Recommended wall-hung height H (m) | Radiated surface | |
|--------|----------------------------|-------------------------------------|------------------|-----------|------------------------------------|------------------|-----------|
| | | | Length (m) | Width (m) | | Length (m) | Width (m) |
| FSU-15 | 3,8 x 0,65 | 3,3-5,5 | 1,5H+L | 2H | 3,0-5,0 | 1,5H+L | 2,2H |
| FSU-30 | 5,8 x 0,65 | 4,5-7,5 | 1,5H+L | 1,9H | 4,0-6,0 | 1,5H+L | 2,1H |
| FSU-45 | 7,8 x 0,65 | 5,0-12 | 1,5H+L | 1,8H | 5,0-10 | 1,5H+L | 2H |

Symbols:
 L Heating appliance length
 W Heating appliance width
 H Suspension height

Command box type selection is made on the base of the units' quantity and the user's request.

| Type | Number of commanded appliances | Program selector switch | Export catalogue prices in EUR-EXW-Budapest without VAT |
|---------|--------------------------------|-------------------------|---|
| FSU-1 | 1 | | 175 € |
| FSU-1PR | 1 | X | 215 € |
| FSU-2 | 2 | | 250 € |
| FSU-2PR | 2 | X | 345 € |
| FSU-3 | 3 | | 325 € |
| FSU-3PR | 3 | X | 390 € |
| FSU-4 | 4 | | 400 € |
| FSU-4PR | 4 | X | 460 € |
| FSU-5 | 5 | | 490 € |
| FSU-5PR | 5 | X | 535 € |

11.1 Optional accessories for industrial oil and gas burners

(FOR SPECIAL ORDER)

Product group: IV.



| | Denomination, type | Technical data | Price |
|----|--|------------------|-------|
| 1 | LDU 11.523 A27/LDU 11.323 A27 gas leakage control unit | | 427 € |
| 2 | VPS 504 S 02 gas leakage control unit | | 317 € |
| 3 | B-351 steam pressure remote transmitter for modulating control | 0,1-2 bar | 505 € |
| 4 | B-353 steam pressure remote transmitter for modulating control | 1-14 bar | 645 € |
| 5 | B-354 M steam pressure remote transmitter for mod. control | 0-30 bar | 588 € |
| 6 | C-358 temperature remote transmitter for modulating control | 55-120 °C | 624 € |
| 7 | C-359 temperature remote transmitter for modulating control | 95-140 °C | 633 € |
| 8 | RWF-40 output control unit without remote transmitter | | 680 € |
| 9 | QBE-2000-P-10 or P-16 continuous pressure transmitter | | 375 € |
| 10 | QAE-2120.010 continuous temperature transmitter | | 76 € |
| 11 | Omron E5CN-R2MT control unit | | 308 € |
| 12 | PMM-313 universal control unit, with 4 relay output | | 471 € |
| 13 | KD48D2 universal control unit, with 4 relay output | | 250 € |
| 14 | PT-100 continuous temperature transmitter L= 120 mm | | 93 € |
| 15 | PT-100 temperature transmitter L= 400 mm | | 139 € |
| 16 | Danfoss RT 112 pressure switch | 0,1-1,1 bar | 227 € |
| 17 | Danfoss RT 116 pressure switch | 1-10 bar | 227 € |
| 18 | Danfoss RT 117 pressure switch | 10-30 bar | 216 € |
| 19 | Danfoss RT 200 pressure switch | 0,2-6 bar | 190 € |
| 20 | TU-V control thermostat, without cover | 30-90 °C | 14 € |
| 21 | TU-V control thermostat, without cover | 30-110 °C | 14 € |
| 22 | TU-V control thermostat, without cover | 60-400 °C | 21 € |
| 23 | TU-10 B control thermostat with cover | 30-90 °C° | 20 € |
| 24 | TU-10 B control thermostat with cover | 30-110 °C | 20 € |
| 25 | TU-RM B safety thermostat, with manual reset, with cover | 95 °C or 120 °C | 22 € |
| 26 | TU-COMBI A-MR control – safety manual reset twin thermostat with cover | 30-90 °C; 95 °C | 37 € |
| 27 | TU-COMBI A-MR control – safety manual reset twin thermostat with cover | 30-110 °C;120 °C | 37 € |
| 28 | TU-SC control thermostat with cover, applicable on water-pipe | 30-90 °C | 16 € |

11.2 Optional accessories for industrial oil and gas burners

(FOR SPECIAL ORDER)

Product group: IV.

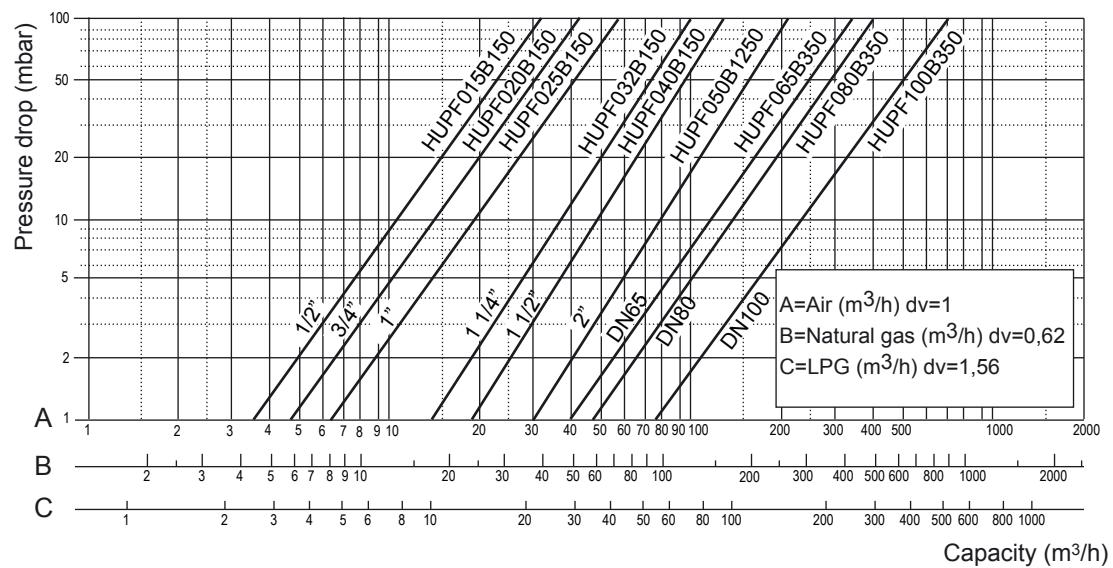


| | Denomination, type | Technical data | Price |
|----|---|------------------|---------|
| 29 | Gas pressure governor with integrated filter | ¾"; 500 mbar | 88 € |
| 30 | Gas pressure governor with integrated filter | 1"; 500 mbar | 144 € |
| 31 | Gas pressure governor with integrated filter | 1½"; 500 mbar | 209 € |
| 32 | Gas pressure governor with integrated filter | 2"; 500 mbar | 516 € |
| 33 | Gas pressure governor with integrated filter | DN 80; 500 mbar | 886 € |
| 34 | Gas pressure governor with integrated filter | DA 100; 500 mbar | 1 360 € |
| 35 | Gas filter | 1" | 37 € |
| 36 | Gas filter | 1½" | 42 € |
| 37 | Gas filter | 2" | 52 € |
| 38 | Gas filter | DN 80 | 262 € |
| 39 | Gas filter | DN 100 | 468 € |
| 40 | Manually operated shut-off valve | 1" | 25 € |
| 41 | Manually operated shut-off valve | 1½" | 56 € |
| 42 | Manually operated shut-off valve | 2" | 84 € |
| 43 | Manually operated shut-off valve | DN 80 | 480 € |
| 44 | Manually operated shut-off valve | DN 100 | 610 € |
| 45 | Antivibrating pipe-line connection (compensator) | 1" | 57 € |
| 46 | Antivibrating pipe-line connection (compensator) | 1½" | 68 € |
| 47 | Antivibrating pipe-line connection (compensator) | 2" | 117 € |
| 48 | Antivibrating pipe-line connection (compensator) | DN 80 | 230 € |
| 49 | Antivibrating pipe-line connection (compensator) | DN 100 | 276 € |
| 50 | Flexible hosing GTM-20-1000 (Outer-Inner) | ¾" | 25 € |
| 51 | Flexible hosing GTM-26-1000 (Outer-Inner) | 1" | 32 € |
| 52 | Fuel-oil preheater (with thermostats) | 0,6 kW | 328 € |
| 53 | Fuel-oil preheater (with thermostats) | 1,5 kW | 460 € |
| 54 | Fuel-oil preheater (with thermostats) | 4 kW | 620 € |
| 55 | Fuel-oil preheater (with thermostats) | 6 kW | 660 € |
| 56 | Fuel-oil preheater (with thermostats) | 10 kW | 1 060 € |
| 57 | Fuel-oil preheater (with modulating temperature control unit) | 10 kW | 1 380 € |
| 58 | Fuel-oil preheater (with thermostats) | 15 kW | 1 080 € |
| 59 | Fuel-oil preheater (with modulating temperature control unit) | 15 kW | 1 400 € |
| 60 | Fuel-oil preheater (with modulating temperature control unit) | 20 kW | 1 480 € |
| 61 | Fuel-oil preheater (with modulating temperature control unit) | 25 kW | 1 520 € |

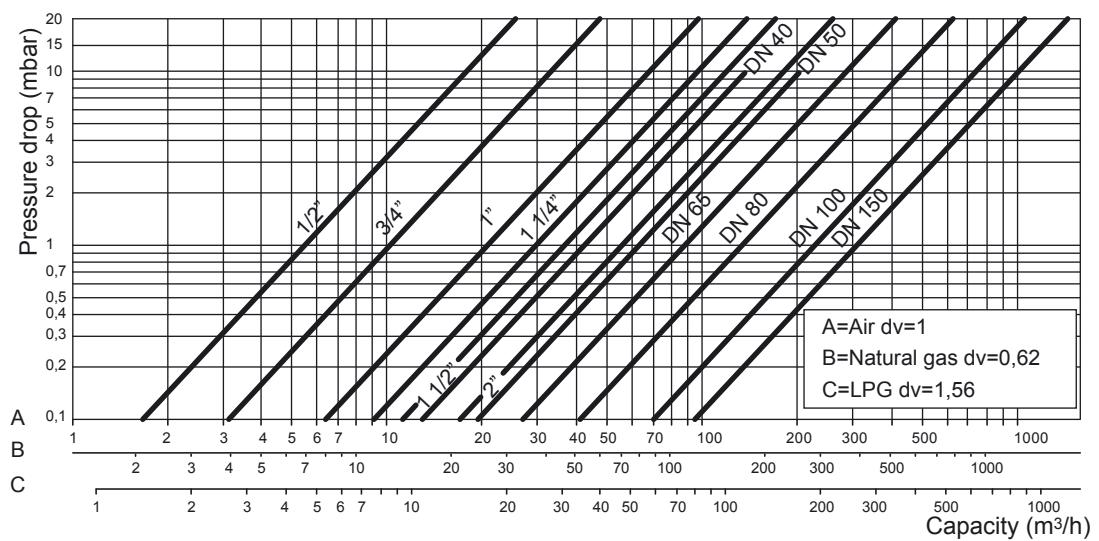
12.0 Gas pressure governors' and gas-filters' characteristics

Product group: IV.

HUPF type gas pressure governors with integrated filter's characteristics:
(at 1013 mbar and 15 C°)



FM type gas-filter characteristics:



Buyer and his address:

Order Nr.:

Heating equipment:

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| <input type="checkbox"/> warm-water boiler | <input type="checkbox"/> hot-water boiler | <input type="checkbox"/> steam boiler | <input type="checkbox"/> hot-air blower | <input type="checkbox"/> other: |
| Type: | Nominal output: | | Efficiency: | Furnace chamber pressure: |
| Furnace chamber: | <input type="checkbox"/> three-pass | | <input type="checkbox"/> reversal-type | <input type="checkbox"/> other: |
| Dimensions: | D= | H= | L= | D1= A= B= |

Burner:

| | | | | | |
|---------------------|--|------------------------------|---|---|--|
| Fuel: | <input type="checkbox"/> natural gas | <input type="checkbox"/> LPG | <input type="checkbox"/> light fuel-oil | <input type="checkbox"/> semi-heavy fuel-oil | <input type="checkbox"/> heavy fuel-oil |
| Output control mode | <input type="checkbox"/> ON/OFF <input type="checkbox"/> Modulating | | | <input type="checkbox"/> HIGH/LOW slow load change | <input type="checkbox"/> HIGH/LOW fast load change |
| Gas connection | Dimension: DN | | | Pressure (mbar): | |
| Gas train | <input type="checkbox"/> equipped with vent to the air solenoid | | | <input type="checkbox"/> equipped with gas leakage control unit | |
| Kind of oil: | | | | Oil pulverization jet, size :* | |
| Air-tube length* | | | | mm | |

Selected burner type:*

Quantity:

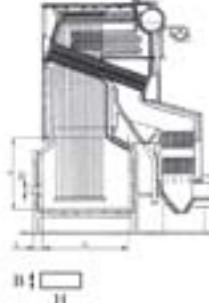
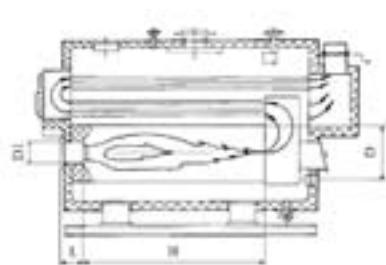
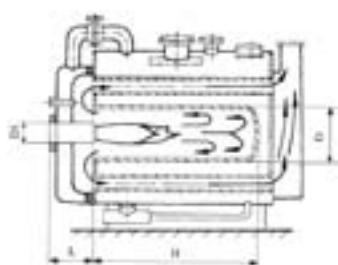
* - has to be filled by the manufacturer

| | | |
|--|-------|-----------------------------------|
| Other optional accessory ordered | Type: | Quantity: |
| Filter | DN | |
| Gas pressure governor with integrated filter | DN | p_{be} (mbar): p_{sz} (mbar): |
| Manually operated shut-off valve | DN | |
| Antivibrating pipe-line connection | DN | |
| Control thermostat | | |
| Safety thermostat with manual reset | | |
| Temperature remote transmitter | | |
| Pressure remote transmitter | | |
| Pressure gauge | | |
| Other: | | |

Three-pass furnace scheme:

Reversal-type furnace scheme:

Prismatic furnace scheme:



B—Furnace width

Date:

Signature:



CONTRACT Nr. concluded between

the firm GB-GANZ Tüzelésttechnikai kft H-1103 Budapest, Szlávy u. 22-30. Hungary represented by Mr Ferenc GOLENÁR general director as Seller and

theLtd,..... represented by Mr(s) general manager as Buyer

1. OBJECT of the CONTRACT. On the basis of the Seller's quotation the.....Ltd purchases the following product(s):

2. TOTAL VALUE of the CONTRACT is EUR, that is Euro.

The above mentioned value is non-revisable and is considered to be under delivery terms ---.....(2) including packaging, without putting it in operation.

3. DELIVERY TIME: on (3)

4. TECHNICAL DOCUMENTATION: The Seller will furnish to the Buyer together with the goods, complete technical documentation in language (4) over the (5), documentation which shall contain description, instructions of erection, operation, maintenance and repairs for the..... (6) of the contract.

5. DOCUMENTS: The Seller will send to the Buyer together with the goods, the following documents:

- original invoice at the delivery of the products, made by the GB-GANZ
- collie's specification in (7), made by the GB-GANZ
- burner quality certificate, declared by the GB-GANZ
- custom declaration , made by the spedition (8)
- CMR, made by the spedition or the GB-GANZ
- Maintenance and Instruction Book and electrical circuit drawing in language (9)

6. MARKING AND PACKING: Each parcel shall be packed and marked such as to withstand weather, shocks, handling, with indication of :

- contract Nr
- commercial Invoice Nr
- package Nr
- denomination of the goods
- brutto/netto weights and dimensions of the collie
- full name and address of the Seller and the the Buyer
- product(s)' fabrication number

7. WARRANTY PERIOD: The Seller warranties normal and continuing functioning of the goods for a period of 24 months from commissionning, but not more than 30 months from the date of delivery.

For the case in which some parts become faulty during the stipulated warranty term, the Seller shall replace these parts at the Buyer's. The warranty period of the parts will extend with the time from the date of notification regarding the failure, till the remedy of the fault. The broken down and to be replaced accessory will be returned to the Seller. The Seller shall settle the matters relating to the defects within max.10 days from the date of notification.

8. TAKEOVER: Within 5 days from receipt of the goods by the Buyer, he shall perform the take-over. In the situation of ascertaining quantitative or qualitative shortages, the Buyer shall prepare a takeover report opposing the Seller and shall send a copy of the report to the latter.

The Seller takes upon himself the obligation to dispatch within 5 days the goods ascertained as missing, or to replace the faulty goods.



9. PAYMENT TERMS: (10) to the Bank, (11) to the bank account of the Seller

EUR Account nr.:

IBAN:

S.W.I.F.T.code:

All banking costs related to the present contract to be paid in the Seller's country shall be on Seller's charge, and all banking costs in the Buyer's country shall be on Buyer's charge.

10. TRANSPORT NOTIFICATION: On dispatching date the Seller shall send a notification to the Buyer, informing him on the details of the shipments.

11. PENALTIES: For delay in delivery of the goods, the Seller shall pay to the Buyer penalties as follows:

- 0,03% of the value per day for delays of up to 10 days.
- 0,05% of the value per day for delays between 11-30 days, but not more than 15% of the value.

In case of exceeding the delivery time by more than 4 weeks, the Buyer can decide to cease the validity of the contract with charging to the Seller's of all provisioned penalties.

12. FORCE MAJEURE: In every case of force majeure, such as natural disasters, wars, strikes, revolutions, both contracting parties are released of their liabilities. Under such circumstances, the part pleading the force majeure shall notify the other part within max.5 days from the occurrence of the event.

13. ARBITRATION: All disputes and divergencies of any kind that arise relating to the present contract, which cannot be solved amably by the contracting parts, shall be submitted to arbitration.

Arbitration will take place in the country of the accused, and shall be judged in accordance with the jurisdiction from the respective country.

Every modification to the present contract can be made only by written acceptance of both partners.

14. This contract becomes valid at signing and stamping by the Seller and the Buyer. 1-1 pcs signed and stamped copies are the property of the Seller and the Buyer.

Dated.....,2008.

SELLER:

BUYER :

.....
general director

.....
general director

Notes:

exact denomination of the product
could be EXW, CPT, DDU, CIP, etc, see Incoterms
date of delivery and stipulations of delivery
respective language
denomination of the product
object
respective language
in case of non European Community country
respective language
terms of payment, for example:
advance transfer by our Proforma Invoice
in.....days after the date of the Commercial Invoice
in.....days after receiving the goods
in.....days after receiving the goods, but confirmed by bank guarantee
etc..... as the Seller and Buyses agree
11. full name, address etc....of the Seller's Bank

15. Useful guide for the handbook

Fuel characteristics:

| Fuel-oil | Density kg/dm ³ | Heating value | | Viscosity cSt (mm ² /sec) |
|---------------------|-------------------------------|---------------|-------------|---|
| | | MJ/kg | kWh/kg | |
| Light fuel-oil | 0,86 | 42 | 11,8 | 5-10 (20 C°-on) |
| Semi-heavy fuel-oil | 0,92-0,94 | 40-41 | 11,12-11,39 | max. 60 (20 C°-on) |
| Heavy fuel-oil | 0,94-0,96 | 39-40 | 10,84-11,12 | max. 40 (100 C°-on) |

| Gas | Density kg/m ³ | Heating value | |
|---------------------------|------------------------------|-------------------|--------------------|
| | | MJ/m ³ | kWh/m ³ |
| Natural gas ¹⁾ | 0,79-0,83 | 34-35,6 | 9,44-9,88 |

¹⁾ supplied natural gas in Hungary at 15 C° 1013 mbar pressure

| LPG | Density kg/m ³ | Heating value | |
|---------------------------|------------------------------|-------------------|--------------------|
| | | MJ/m ³ | kWh/m ³ |
| Gas fase ²⁾ | 2,38 | 110 | 30,6 |
| | kg/dm ³ | MJ/kg | kWh/kg |
| Liquid fase ²⁾ | 0,53-0,55 | 45,6-46,1 | 12,6-12,8 |

²⁾ at 15 C° and 1013 mbar pressure

Note: 2,4 kg 40/60 % proportional liquid LPG is equivalent of 1 Nm³ normal gas fase

Measuring units:

Power units, change keys:

| Unit | kW | kcal/h | MJ/h |
|----------|-----------------------|--------|------------------------|
| 1 kW | 1 | 860 | 3,6 |
| 1 kcal/h | 1,16x10 ⁻³ | 1 | 4,187x10 ⁻³ |
| 1 MJ/h | 0,278 | 238,8 | 1 |

Energy measuring units, change keys:

| Unit | J | KWh | kcal |
|---------------|-----------------------|------------------------|-----------------------|
| 1 J=1 Nm=1 Ws | 1 | 2,78x10 ⁻⁷ | 2,39x10 ⁻⁴ |
| 1 kWh | 3,6x10 ⁶ | 1 | 860 |
| 1 kcal | 4,187x10 ³ | 1,163x10 ⁻³ | 1 |

Pressure measuring units, change keys:

| Unit | Pa | kPa | bar | mbar | mm vo. | atm |
|--------------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 N/m ² =1 Pa | 1 | 10 ⁻³ | 10 ⁻⁵ | 10 ⁻² | 0,102 | 9,87x10 ⁻⁶ |
| 1 kPa | 10 ³ | 1 | 10 ⁻² | 10 | 102 | 9,87x10 ⁻³ |
| 1 bar | 10 ⁵ | 10 ² | 1 | 10 ³ | 1,02x10 ⁴ | 9,87x10 ⁻¹ |
| 1 mbar | 10 ² | 10 ⁻¹ | 10 ⁻³ | 1 | 10,2 | 9,87x10 ⁻⁴ |
| 1 mm vo. | 9,81 | 9,81x10 ⁻³ | 9,81x10 ⁻⁵ | 9,81x10 ⁻² | 1 | 9,87x10 ⁻⁵ |
| 1 atm | 1,01x10 ⁵ | 101 | 1,01 | 1013 | 1,013x10 ⁴ | 1 |

Your dealer:

