



GAS BURNERS
BTG 20 - 20 P - 20 ME



CONFORM TO: GAS DIRECTIVE 2009/142/CE | E.M.C. DIRECTIVE 2014/30/UE | L.V. DIRECTIVE 2014/35/UE | MACHINERY DIRECTIVE 2006/42/CE | COMMISSION REGULATION ErP 2013/811/UE AND ErP 2013/813/UE | REFERENCE STANDARD EN676. 0085



BTG 20 - 20 P



BTG 20 ME

Gas burner compliant with European standard EN676.

Operation:

Continuous modulation operation by installing P.I.D. controller in the control panel (to be ordered separately with modulation probe).

Modulation ratio:

Low NOx and CO emissions gas burner according to European standard EN676:

Adjusting the combustion head.

Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler.

Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers.

Combustion air intake with butterfly valve. Air flow adjustment:

Fully closing air damper on shutdown to avoid loss of heat through the chimney.

CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter.

CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter.

Possibility to choose gas train with valve tightness control.

Fail proof connectors for burner/gas train connection.

Gas train outlet:

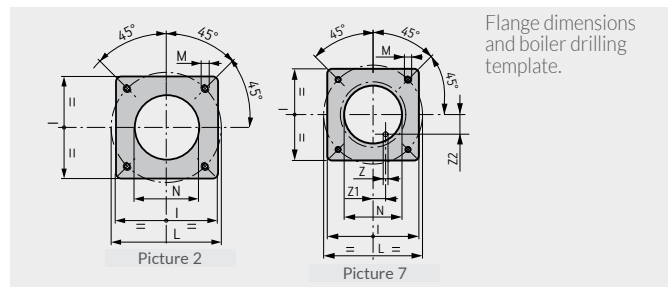
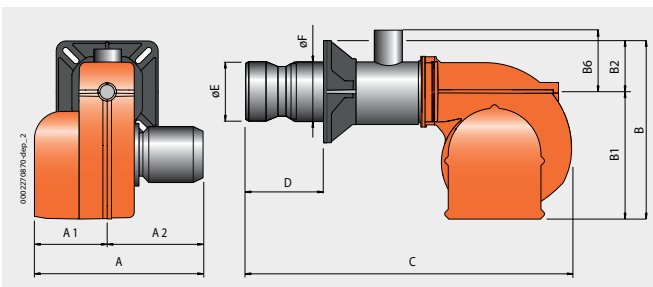
Flame detection by ionisation electrode with connector for microamperometer.

Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment.

Electric protection rating:

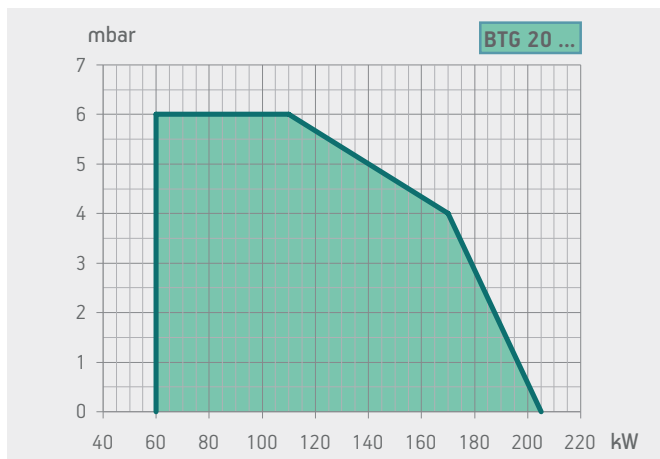
Sound-proof plastic protective cover.

| | BTG 20 | BTG 20 P | BTG 20 ME |
|--|--------------|---------------------|----------------------------------|
| | single-stage | two-stage | electronic two-stage progressive |
| Continuous modulation operation by installing P.I.D. controller in the control panel (to be ordered separately with modulation probe). | | | • |
| Modulation ratio: | | | 1:3 |
| Low NOx and CO emissions gas burner according to European standard EN676: | class 3 | class 3 | class 3 |
| Adjusting the combustion head. | • | • | • |
| Maintenance facilitated by the possibility of removing the mixing unit without having to remove the burner from the boiler. | • | • | • |
| Sliding boiler coupling flange to adapt the blast-pipe to the various types of boilers. | • | • | • |
| Combustion air intake with butterfly valve. Air flow adjustment: | manual | electric servomotor | electric servomotor |
| Fully closing air damper on shutdown to avoid loss of heat through the chimney. | • | • | • |
| CE version gas train is complete with operation and safety valve with electromagnetic drive, minimum pressure switch, pressure regulator and gas filter. | • | • | |
| CE version gas train is complete with butterfly valve, operation and safety valve with electromagnetic drive, valve tightness control, minimum pressure switch, pressure regulator and gas filter. | | | • |
| Possibility to choose gas train with valve tightness control. | • | • | |
| Fail proof connectors for burner/gas train connection. | • | • | • |
| Gas train outlet: | up | up | up |
| Flame detection by ionisation electrode with connector for microamperometer. | • | • | • |
| Control panel equipped either with display showing the working process and with the keyboard for the burner adjustment. | | | • |
| Electric protection rating: | IP40 | IP40 | IP40 |
| Sound-proof plastic protective cover. | • | • | • |



Flange dimensions and boiler drilling template.

| Model | A mm | A1 mm | A2 mm | B mm | B1 mm | B2 mm | B6 mm | C mm | D mm | E mm | F mm | I mm | L mm | M mm | N mm | Z mm | Z1 mm | Z2 mm | Pic. |
|-----------|------|-------|-------|------|-------|-------|-------|------|-----------|------|------|------|-----------|------|------|------|-------|-------|------|
| BTG 20 | 303 | 158 | 145 | 368 | 275 | 93 | 70 | 695 | 150 ÷ 300 | 127 | 114 | 185 | 170 ÷ 210 | M10 | 135 | - | - | - | 2 |
| BTG 20 P | 303 | 158 | 145 | 368 | 275 | 93 | 70 | 695 | 150 ÷ 300 | 127 | 114 | 185 | 170 ÷ 210 | M10 | 135 | - | - | - | 2 |
| BTG 20 ME | 303 | 158 | 145 | 368 | 275 | 93 | 70 | 695 | 150 ÷ 300 | 127 | 114 | 185 | 170 ÷ 210 | M10 | 135 | - | - | - | 2 |



| Model | Size of packaging | | | Weight kg |
|-----------|-------------------|-----|-----|--------------|
| | L | P | H | |
| BTG 20 | 780 | 370 | 410 | 18 |
| BTG 20 P | 780 | 370 | 410 | 18 |
| BTG 20 ME | 780 | 370 | 410 | 18 |

| | Emissions class | Thermal output kW | Model | Part no. | Electrical supply | Motor kW | Notes |
|-----------------|-----------------|-------------------|------------------|-----------------|-------------------|----------|-------|
| Frequency 50 Hz | | | | | | | |
| | class 3 | 60 ÷ 205 | BTG 20 | 17100010 | 1N AC 50Hz 230V | 0,18 | 1) |
| | class 3 | 60 ÷ 205 | BTG 20 P | 17110010 | 1N AC 50Hz 230V | 0,18 | 1) |
| | class 3 | 60 ÷ 205 | BTG 20 ME | 17120020 | 1N AC 50Hz 230V | 0,18 | 4) |
| Frequency 60 Hz | | | | | | | |
| | class 3 | 60 ÷ 205 | BTG 20 | 17100010 | 1N AC 60Hz 220V | 0,18 | 1) |
| | class 3 | 60 ÷ 205 | BTG 20 P | 17110010 | 1N AC 60Hz 220V | 0,18 | 1) |
| | class 3 | 60 ÷ 205 | BTG 20 ME | 17120020 | 1N AC 60Hz 220V | 0,18 | 4) |

The working field of the burner, as expressed in the "Thermal output kW" column, depends on the characteristics of the gas train it works with (see burner/train match diagram).

MODULATING MODE

| DESCRIPTION | PART NO. |
|--|----------|
| BTG 20 ME: modulation kit | 98000059 |
| BTG 20 ME: modulating probe (see page 294 Burners Catalogue) | |

GAS BURNERS ACCESSORIES

Boiler coupling kit, plug for wiring.

NOTES

1 Equipped with air closure device.

4 Equipped with air closure device.

Net calorific value at reference conditions of 0°C, 1013mbar:

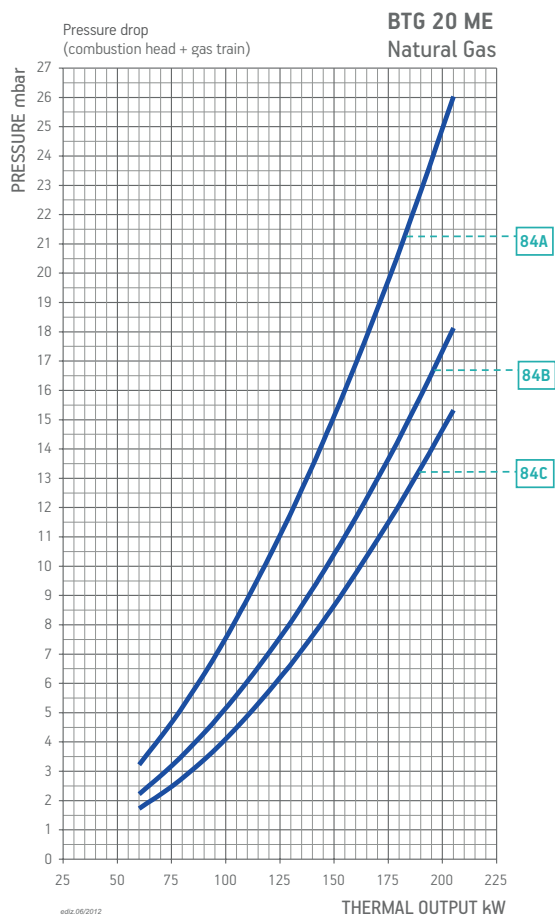
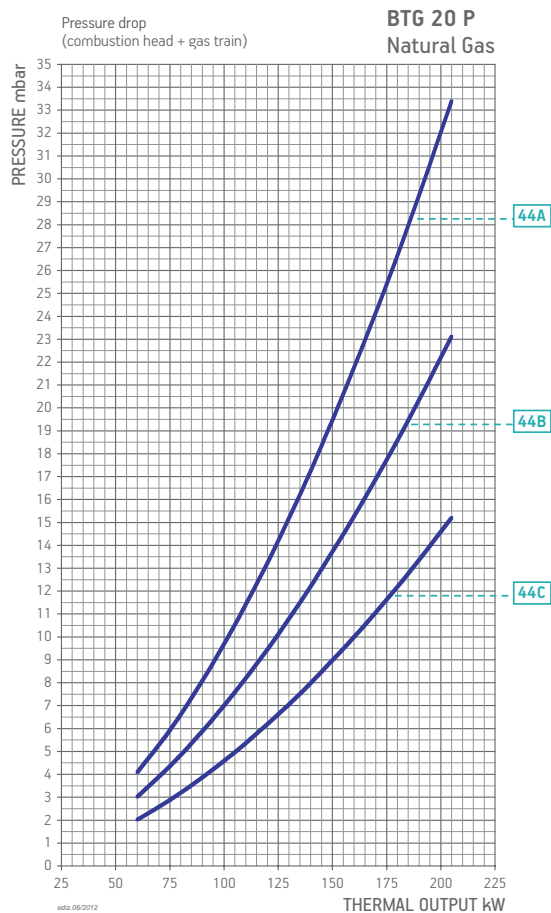
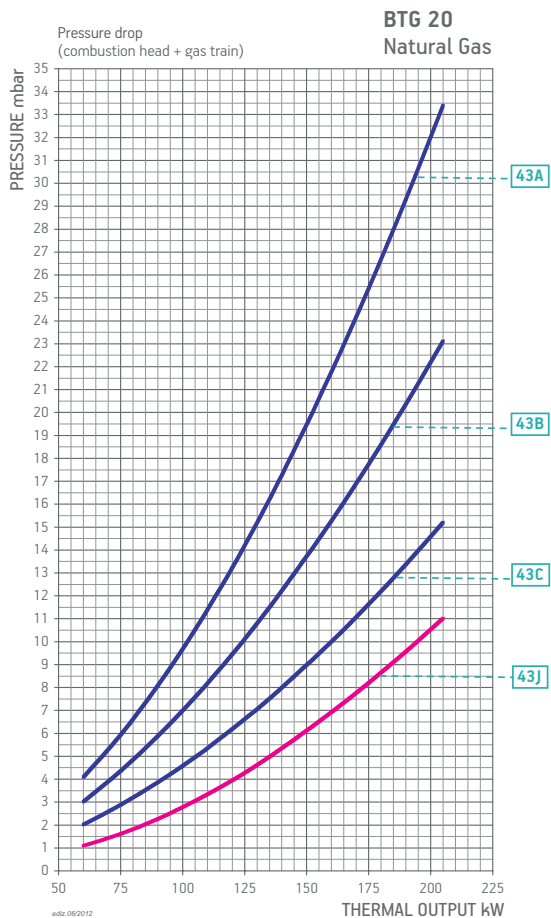
Natural gas: $H_i = 35,80 \text{ MJ/m}^3 = 8550 \text{ kcal/m}^3$,

LPG: $H_i = 92 \text{ MJ/m}^3 = 22000 \text{ kcal/m}^3$.

For different type of gas and pressure values, please get in contact with our commercial department.

BURNER/GAS TRAIN MATCH

GAS



BURNER/GAS TRAIN MATCH

CE gas train version complies with EN676, EXP gas train version is for extra-European markets

| Burner model | Gas type | Curve on graph | Version | P.Max** mbar | Execution | Gas train | Regulator with incorporated filter | Burner/gas train adapter | Valve tightness control kit | Pic. | Notes |
|--------------|-------------|----------------|---------|--------------|-----------|-----------|------------------------------------|--------------------------|-----------------------------|------|-------|
| | | | | | | Part no. | Part no. | Part no. | Part no. | | |
| BTG 20 | Natural gas | 43A | CE/EXP | 360 | CTV | 19990002 | Included | - | - | M2 | |
| | | | | | | 19990002 | Included | - | 98000100 | M2 | 12) |
| | | 43B | CE/EXP | 360 | CTV | 19990005 | Included | - | - | M2 | |
| | | | | | | 19990005 | Included | - | 98000100 | M2 | 12) |
| | | 43C | CE/EXP | 360 | CTV | 19990008 | Included | 96000031 | - | M2 | |
| 19990008 | Included | | | | | 96000031 | 98000100 | M2 | 12) | | |
| 43J | EXP | 40 | | 19990004 | - | - | - | ME1 | | | |
| BTG 20 P | Natural gas | 44A | CE/EXP | 360 | CTV | 19990016 | Included | - | - | B2 | |
| | | | | | | 19990016 | Included | - | 98000100 | B2 | 12) |
| | | 44B | CE/EXP | 360 | CTV | 19990020 | Included | - | - | B2 | |
| | | | | | | 19990020 | Included | - | 98000100 | B2 | 12) |
| 44C | CE/EXP | 360 | CTV | 19990024 | Included | 96000031 | - | B2 | | | |
| | | | | 19990024 | Included | 96000031 | 98000100 | B2 | 12) | | |
| BTG 20 ME | Natural gas | 84A | CE/EXP | 360 | CTV | 19990573 | Included | - | Included | D2 | |
| | | 84B | CE/EXP | 360 | CTV | 19990574 | Included | - | Included | D2 | |
| | | 84C | CE/EXP | 360 | CTV | 19990575 | Included | - | Included | D2 | |

| Burner model | Gas type | Version | P.Max** mbar | Execution | Gas train | Regulator with incorporated filter | Burner/gas train adapter | Valve tightness control kit | Pic. | Notes |
|--------------|----------|---------|--------------|-----------|-----------|------------------------------------|--------------------------|-----------------------------|------|-------|
| | | | | | Part no. | Part no. | Part no. | Part no. | | |
| BTG 20 | LPG | CE/EXP | 360 | CTV | 19990002 | Included | - | - | M2 | |
| | | | | | 19990002 | Included | - | 98000100 | M2 | 12) |
| BTG 20 P | LPG | CE/EXP | 360 | CTV | 19990016 | Included | - | - | B2 | |
| | | | | | 19990016 | Included | - | 98000100 | B2 | 12) |
| BTG 20 ME | LPG | CE/EXP | 360 | CTV | 19990573 | Included | - | Included | D2 | |

To choose the correct gas train please refer to the information on Burners Catalogue.

NOTES

9 The min feeding gas pressure at the inlet of the gas train can not be lower than 100 mbar.

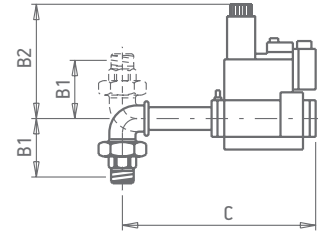
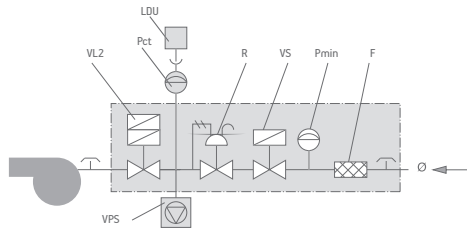
12 Valve tightness control not required by EN676.

CTV Gas train with Valve Tightness Control.

**) Maximum gas inlet pressure at pressure regulator.

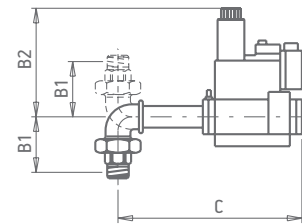
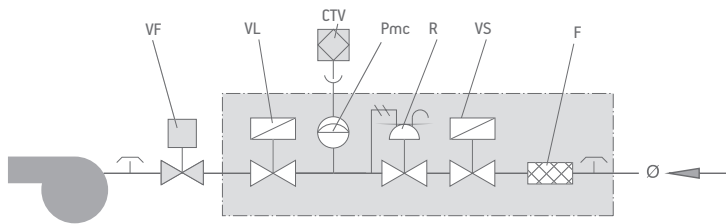
GAS TRAIN STRUCTURE AND COMPOSITION

B2



| Gas train Part no. | Position | | | | | | | | | Gas train dimensions mm | | | Size of packaging mm | Weight kg |
|-----------------------------|----------|-----|-----|------|---|-----|-----|----|-------|-------------------------|-----|-----|----------------------|-----------|
| | F | LDU | Pct | Pmin | R | VL2 | VPS | VS | Ø | B1 | B2 | C | L x P x H | |
| 19990016 (MB... 405 - 1/2") | ● | | | ● | ● | ● | ■ | ● | 3/4" | 72 | 210 | 204 | 300 x 210 x 300 | 5 |
| 19990020 (MB... 407 - 3/4") | ● | | | ● | ● | ● | ■ | ● | 3/4" | 72 | 210 | 204 | 300 x 210 x 300 | 5 |
| 19990024 (MB... 410 - 1") | ● | | | ● | ● | ● | ■ | ● | 1"1/4 | 95 | 260 | 249 | 300 x 210 x 300 | 8 |

D2



| Gas train Part no. | Position | | | | | | | | Gas train dimensions mm | | | Size of packaging mm | Weight kg |
|------------------------------|----------|---|-----|---|------|----|----|-------|-------------------------|-----|-----|----------------------|-----------|
| | CTV | F | Pmc | R | VF | VL | VS | Ø | B1 | B2 | C | L x P x H | |
| 19990573 (MB... 407 - 3/4") | ● | ● | ● | ● | DN20 | ● | ● | 3/4" | 72 | 160 | 305 | 400 x 300 x 280 | 12 |
| 19990574 (MB... 410 - 1") | ● | ● | ● | ● | DN20 | ● | ● | 1"1/4 | 95 | 160 | 355 | 400 x 300 x 280 | 15 |
| 19990575 (MB... 412 - 1"1/4) | ● | ● | ● | ● | DN20 | ● | ● | 1"1/4 | 95 | 160 | 355 | 400 x 300 x 280 | 15 |

CTV Valve tightness control.
F Filter.
LDU LDU valve tightness control.
Pct Pressure switch for gas control.
Pmax Maximum pressure switch.
Pmc Minimum and control pressure switch gas leaks.
Pmin Minimum pressure switch.
R Pressure regulator.
RF Pressure regulator with filter.

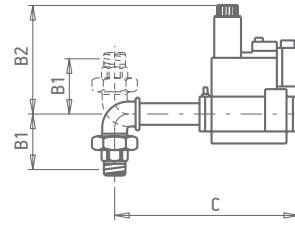
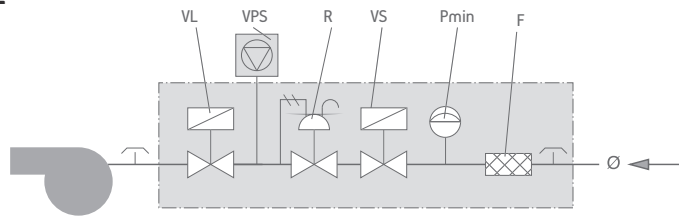
RFP Pressure regulator with filter for pilot gas train.
RM Manual flow rate regulator.
RP Pneumatic regulator.
VF Regulator throttle valve.
VL Operating valve.
VL2 Two-stage operating valve.
VLP Operating pilot valve.
VLR Operating valve with pressure regulator.

VP Pilot valve.
VPS VPS valve tightness control.
VS Safety valve.
VSP Safety pilot valve.
Ø Gas train diameter.
Ø1 Main gas train diameter.
Ø2 Pilot gas train diameter.

● As standard.
 ▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.
 ■ On request.
 ◆ Mounted on burner.

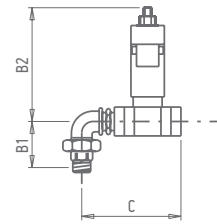
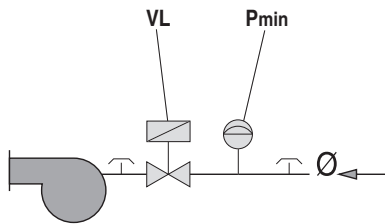
GAS TRAIN STRUCTURE AND COMPOSITION

M2



| Gas train Part no. | Position | | | | | | | Gas train dimensions mm | | | Size of packaging mm | Weight |
|-----------------------------|----------|------|---|----|-----|----|--------|-------------------------|-----|-----|----------------------|--------|
| | F | Pmin | R | VL | VPS | VS | Ø | B1 | B2 | C | L x P x H | kg |
| 19990002 (MB... 405 - 1/2") | ● | ● | ● | ● | ■ | ● | 3/4" | 72 | 140 | 204 | 310 x 210 x 250 | 4 |
| 19990005 (MB... 407 - 3/4") | ● | ● | ● | ● | ■ | ● | 3/4" | 72 | 140 | 204 | 310 x 210 x 250 | 4 |
| 19990008 (MB... 410 - 1") | ● | ● | ● | ● | ■ | ● | 1"1/4" | 95 | 160 | 249 | 310 x 210 x 250 | 7 |

ME1



| Gas train Part no. | Position | | | Gas train dimensions mm | | | Size of packaging mm | Weight |
|--------------------|----------|------|------|-------------------------|-----|-----|----------------------|--------|
| | Pmin | VL | Ø | B1 | B2 | C | L x P x H | kg |
| 19990004 | ● | 3/4" | 3/4" | 72 | 177 | 114 | 240 x 220 x 210 | 3 |

- CTV** Valve tightness control.
- F** Filter.
- LDU** LDU valve tightness control.
- Pct** Pressure switch for gas control.
- Pmax** Maximum pressure switch.
- Pmc** Minimum and control pressure switch gas leaks.
- Pmin** Minimum pressure switch.
- R** Pressure regulator.
- RF** Pressure regulator with filter.

- RFP** Pressure regulator with filter for pilot gas train.
- RM** Manual flow rate regulator.
- RP** Pneumatic regulator.
- VF** Regulator throttle valve.
- VL** Operating valve.
- VL2** Two-stage operating valve.
- VLP** Operating pilot valve.
- VLR** Operating valve with pressure regulator.

- VP** Pilot valve.
- VPS** VPS valve tightness control.
- VS** Safety valve.
- VSP** Safety pilot valve.
- Ø** Gas train diameter.
- Ø1** Main gas train diameter.
- Ø2** Pilot gas train diameter.

- As standard.
- ▲ As standard for burners with an output of more than 1200 kW, on request for burners with an output of less than 1200 kW.
- On request.
- ◆ Mounted on burner.



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