–weishaupt–

# product

Information on gas burners

## Precision as standard

**Weishaupt monarch® gas burner, WM-G10 (65 – 1250 kW)**

# Progress and tradition: The new monarch® gas burner


*For more than 50 years the monarch® trademark has stood for power and quality*

For more than five decades Weishaupt's monarch® series burners have been used on a wide variety of heat exchangers and industrial plant, forming the basis of Weishaupt's outstanding reputation.

This successful series is now continued by the new WM-G10 gas burner. Ultra-modern technology in conjunction with a compact construction make this powerful burner universally employable.

## Digital.

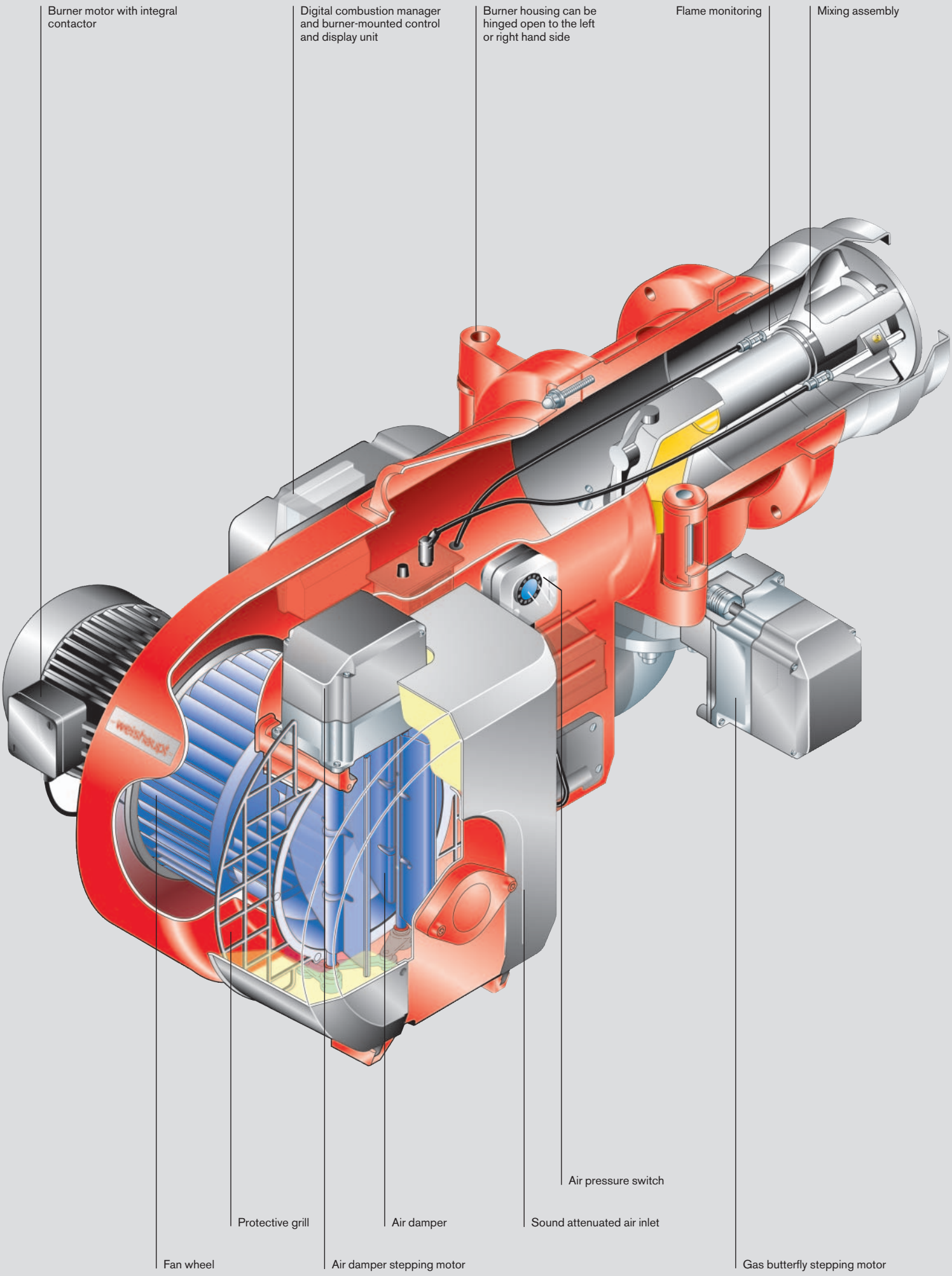
Digital combustion management for economical and safe burner operation. The controls are easy to use.

## Compact.

The aerodynamic housing and special air feed enable a higher capacity within smaller dimensions.

## Quiet.

The new monarch burners operate with considerably reduced noise levels, thanks to the newly developed fan unit.


Burner motor with integral contactor
Digital combustion manager and burner-mounted control and display unit
Burner housing can be hinged open to the left or right hand side
Flame monitoring
Mixing assembly
Air pressure switch
Protective grill
Air damper
Sound attenuated air inlet
Fan wheel
Air damper stepping motor
Gas butterfly stepping motor

# WM-G10 Weishaupt monarch® burner: Top design, technology and quality

**The new WM-G10 Weishaupt monarch® burner is the logically consistent further development of the legendary monarch® series. This completely newly developed burner generation is considerably more compact, powerful and quiet and reaffirms Weishaupt's burner construction expertise.**

**Futuristic fan technology**
Right from the earliest developmental stages of this new burner generation, particular emphasis was placed on a compact, aerodynamic construction and low operational noise levels. To realise this goal, a completely new air inlet and air damper control were developed. The special housing design with the self opening air inlet, together with the new air damper technology, results in increased fan pressure and thus more capacity from a more compact form. The air damper control provides a high degree of linearity even at the lower end of the operating range and combined with the sound attenuated air inlet, which is included as standard, ensures quieter operation.

**Fast commissioning, simple servicing**
All WM-G10 burners are delivered with the mixing assembly preset for the required output of the burner. A final adjustment is made using the combustion manager's menu controlled commissioning program. All the burner's components, such as the mixing assembly, air damper and combustion manager, are readily accessible despite its compact construction, enabling maintenance and servicing work to be carried out quickly and easily. This is further helped by the standard hinged flange, which provides a perfect servicing position for the burner. Adjustment to suit different combustion chamber conditions can be easily carried out on the burner in its installed position. The integral sightglass enables ignition and the flame to be observed.

**Low $NO_X$ operation**
Low $NO_x$ figures are dependent on combustion chamber geometry and volumetric loading. $NO_x$ figures and the necessary combustion chamber dimensions can be found in the publication "Conditions for attaining the $NO_x$ emission values for burners."

**Fuels**
Natural Gas E
Natural Gas LL
Liquid Petroleum Gas B/P

**Applications**
The Weishaupt WM-G10 gas burner is suitable for:
- installation on heat exchangers to EN 676 and EN 303-2
- hot water plant
- steam boilers and high pressure hot water plant
- intermittent and continuous operation
- installation on air heaters

The combustion air must be free of aggressive substances (halogens, chlorides, fluorides etc.) and impurities (dust, debris, vapours etc.). For some applications the use of an extraneous air supply is recommended (additional cost).

**Permissible ambient conditions**
- Ambient temperature: -15 to +40°C (in operation)
- Humidity: max. 80% relative humidity, no dew point
- Suitable for operation indoors only
- For plant in unheated areas certain further measures may be required (please enquire)

Use of the burner for applications or in ambient conditions not detailed above is not permitted without the prior written agreement of Max Weishaupt GmbH. The service intervals will be reduced in accordance with the more extreme operational conditions.

**Certification**
The burners are tested by an independent body and conform to the following standards and EU directives:
- EN 676 (LN version has best, Class 3 emission levels for natural gas)
- Machinery Directive 98/37/EC
- Electromagnetic compatability EMV 89/336/EEC
- Low Voltage Directive73/23/EEC
- Gas Appliance Directive 90/396/EEC
- Pressure Vessel Directive 97/23/EC
- The burners carry the CE and CE-PIN marks

**The most important advantages at a glance**
- Digitial combustion management at all ratings
- More compact than previous burners of a similar rating
- Sound attenuated air inlet as standard for quieter operation
- Powerful fan due to the specially developed fan geometry and air damper control
- All WM-G10 burners are delivered with the mixing assembly preset for the required output of the burner
- IP 54 protection as standard
- Easy access to all components, such as: mixing assembly, air damper and combustion manager
- Safe operation with sliding two stage or modulating operation as standard
- Computer controlled function test at the factory of each individual burner
- Burner can be supplied pre-wired with plug connections
- Excellent price/capacity ratio
- Well established, global service network

# Digital combustion management: Precise, simple and safe


*Input and control via the control and display unit (e.g. W-FM 50)*

**Digital combustion management means optimal combustion figures, continually reproducible setting figures and ease of use.**

Weishaupt WM-G10 gas burners are equipped as standard with electronic compound regulation and digital combustion management. Modern combustion technologies demand a precise, continually reproducible dosing of fuel and combustion air. Only in this way can optimal combustion figures be ensured over extended periods.

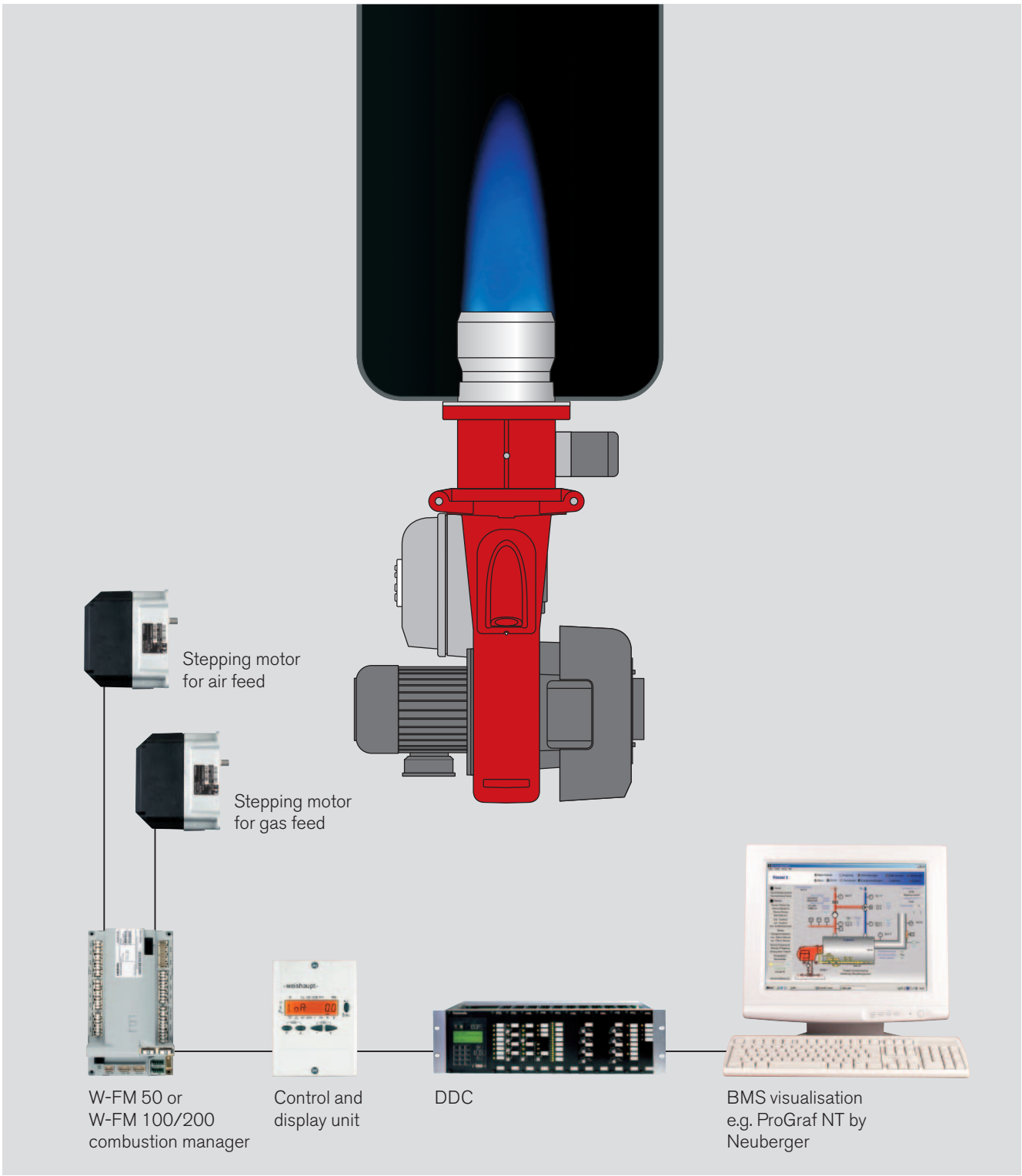
**Simple operation**
Setting and control of the burner is achieved using a control and display unit. The CDU is linked to the combustion manager via a bus system, enabling the user friendly setting of the burner.

**Flexible communication possibilities**
The integral interface enables all necessary information and functions to be relayed to a superordinate control system. If required, a modem enables a telephone connection to be installed for remote operation, monitoring and diagnosis.

**Communication with external systems via bus**
Several bus systems are availabe via the E-Gate if data from the burners are to be exchanged with a PLC unit, or if the burners are to be integrated into a building management system. For the control and management levels Weishaupt offers ProGraf NT, a real time software product to meet any and all requirements.

**New technology advantages**
Digitial combustion management makes burner operation simple and safe. The most important advantages:

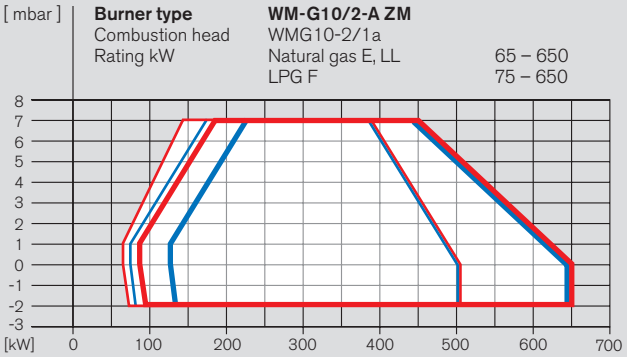
- No additional burner controls are necessary as control is effected by the combustion manager. The only additional requirements are control and motor fuses (by others).
- Reduced installation expense: Each burner is tested and supplied by the factory as a complete unit.
- Commissioning and service work takes less time. The burner's basic parameters are set at the factory. Adjustment to site conditions and combustion emission checks are effected via the combustion manager's menu controlled commissioning program.

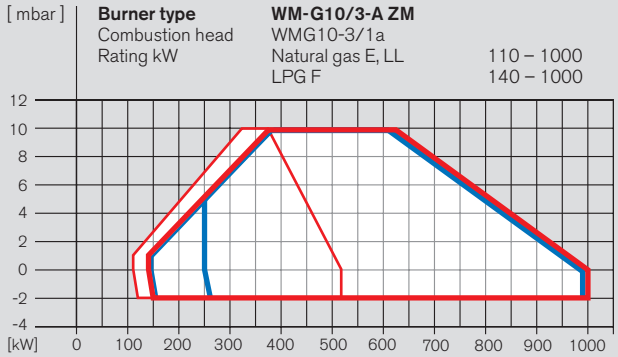


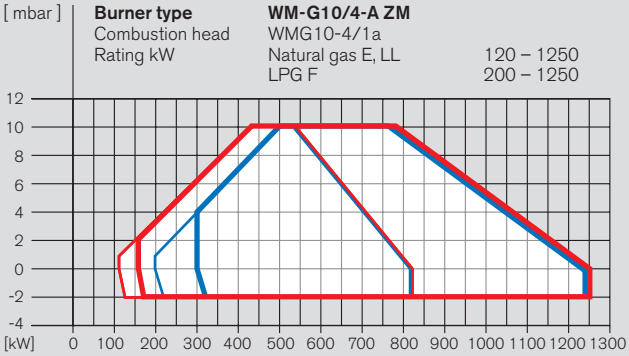

*Example with W-FM 50 (standard from 2006)*

# Gas burner selection
# WM-G10, versions ZM and ZM-LN

## Version ZM



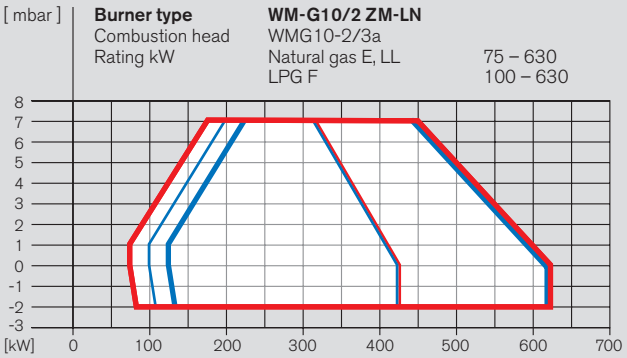



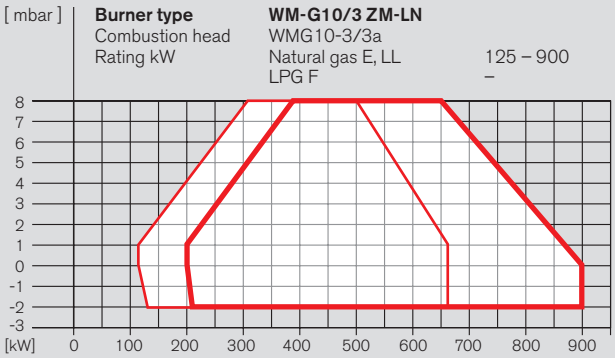

**Capacity graphs in accordance with EN 676. The ratings given are based on installation altitude of 0 m. Depending on the altitude of the installation, a reduction in capacity of 1% for every 100 m above sea level should be taken into account.**

**ZM version gas burner operation with town's or sewage gas**

When selecting burners, the stated capacities must be reduced by 10% in the range of the resistance curves for town's gas or sewage gas.

## Version ZM-LN




**Nat gas capacity with comb. head**
Closed
Open

**LPG capacity with comb. head**
Closed
Open

### Designation

**WM – G 10 /3 –A / ZM – LN** (Low $No_x$)

- WM: Weishaupt burner, monarch® series
- G: G = Gas
- 10: Size
- /3: Capacity
- –A: Mark
- ZM – LN: Two stage modulating

# Technical data
# Scope of delivery

## Technical data

| Burner | | WM - G10/2-A / ZM | WM - G10/3-A / ZM | WM - G10/4-A / ZM |
|---|---|---|---|---|
| Burner motor | Weishaupt type | D90/50-2 | D90/90-2 | D90/90-2 |
| Nominal capacity | kW | 0.76 | 1.5 | 1.5 |
| Nominal load | A | 2.1 | 3.5 | 3.5 |
| Motor prefuse (ϒΔ start) | A minimal | 10 A slow (external) | 10 A slow (external) | 10 A slow (external) |
| Speed (50 Hz) | rpm | 2850 | 2800 | 2800 |
| Combustion manager | Type | W-FM 100 (W-FM 50)[1)] | W-FM 100 (W-FM 50)[1)] | W-FM 100 (W-FM 50)[1)] |
| Air stepping motor | Type | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] |
| Gas stepping motor | Type | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] |
| $NO_x$ class in accordance with EN 676 | | 1 | 1 | 1 |
| Weight | kg | approx. 54 | approx. 56 | approx. 56 |

| Burner | | WM - G10/2-A / ZM-LN | WM - G10/3-A / ZM-LN |
|---|---|---|---|
| Burner motor | Weishaupt type | D90/50-2 | D90/90-2 |
| Nominal capacity | kW | 0.76 | 1.5 |
| Nominal load | A | 2.1 | 3.5 |
| Motor prefuse (ϒΔ start) | A minimal | 10 A slow (external) | 10 A slow (external) |
| Speed (50 Hz) | rpm | 2800 | 2800 |
| Combustion manager | Type | W-FM 100 (W-FM 50)[1)] | W-FM 100 (W-FM 50)[1)] |
| Air stepping motor | Type | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] |
| Gas stepping motor | Type | SQM 45 (STE 50)[1)] | SQM 45 (STE 50)[1)] |
| $NO_x$ class in accordance with EN 676 | | 3 | 3 |
| Weight | kg | ca. 54 | ca. 56 |

**Voltages and frequencies:**
The burners are equipped as standard for three phase alternating current 400 V, 3~, N, 50 Hz. Other voltages and frequencies available on request.

**Standard burner motor:**
Isolation class F, IP 54 protection.

## Scope of delivery

| Description | WM-G10/2-A / ZM | WM-G10/3-A / ZM | WM-G10/4-A / ZM | WM-G10/2-A / ZM-LN | WM-G10/3-A / ZM-LN |
|---|---|---|---|---|---|
| Burner housing, hinged flange, housing cover, Weishaupt burner motor, air inlet, cover, fan wheel, combustion head, ignition unit, ignition cable, ignition electrodes, combustion manager with control and display unit, flame sensor, stepping motors, flange gasket, hinged flange with limit switch, fixing screws. | ● | ● | ● | ● | ● |
| Combustion manager W-FM 100 (W-FM 50[1)]) | ● | ● | ● | ● | ● |
| Double gas solenoid valves (DMV), Class A | ● | ● | ● | ● | ● |
| Gas butterfly valve | ● | ● | ● | ● | ● |
| Valve connection piece | ● | ● | ● | ● | ● |
| Air pressure switch | ● | ● | ● | ● | ● |
| Low gas pressure switch | ● | ● | ● | ● | ● |
| Adjustable regulating sleeve in the mixing assembly | ● | ● | ● | ● | ● |
| Stepping motor for gas butterfly and air damper | ● | ● | ● | ● | ● |

**Note:** **In accordance with EN 676 gas filters and governors form part of the burner supply (see Weishaupt accessories list). Burner execution complies with TRD 604, 24 h / 72 h (see technical brochure, print No. 863).**

[1)] Standard from 2006

# Valve train sizing
# WM-G10, version ZM

## WM-G10/2, version ZM

| Burner rating kW | Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV | | | | | High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 3/4" | 1" | 1 1/2" | 2" | 65 | 3/4" | 1" | 1 1/2" | 2" | 65 |
| | Nom. diameter of gas butterfly | | | | | Nom. diameter of gas butterfly | | | | |
| | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| **Natural Gas E** $H_i$ = 37.,26 MJ/m³ (10.35 kWh/m³), d = 0.606 | | | | | | | | | | |
| 300 | 40 | 15 | - | - | - | 21 | 6 | - | - | - |
| 350 | 53 | 19 | - | - | - | 28 | 7 | - | - | - |
| 400 | 68 | 24 | 11 | 9 | - | 36 | 9 | 6 | 6 | - |
| 450 | 85 | 29 | 13 | 10 | 9 | 45 | 11 | 7 | 7 | 6 |
| 500 | 104 | 34 | 15 | 12 | 9 | 55 | 13 | 8 | 8 | 6 |
| 550 | 125 | 40 | 17 | 13 | 10 | 66 | 15 | 9 | 9 | 7 |
| 600 | 148 | 47 | 19 | 15 | 11 | 78 | 17 | 10 | 10 | 8 |
| 650 | 172 | 54 | 21 | 16 | 12 | 91 | 20 | 11 | 11 | 9 |
| **Natural Gas LL** $H_i$ = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641 | | | | | | | | | | |
| 300 | 56 | 20 | - | - | - | 30 | 8 | - | - | - |
| 350 | 75 | 25 | 11 | 9 | - | 39 | 10 | 6 | 6 | - |
| 400 | 97 | 32 | 13 | 11 | 9 | 51 | 12 | 7 | 7 | 6 |
| 450 | 121 | 39 | 16 | 12 | 10 | 64 | 14 | 8 | 8 | 6 |
| 500 | 148 | 47 | 18 | 14 | 11 | 78 | 17 | 9 | 9 | 7 |
| 550 | 178 | 56 | 21 | 16 | 12 | 94 | 20 | 11 | 11 | 8 |
| 600 | 211 | 65 | 24 | 18 | 13 | 111 | 23 | 12 | 12 | 9 |
| 650 | 247 | 75 | 27 | 20 | 14 | 130 | 26 | 14 | 13 | 10 |
| **LPG B/P** $H_i$ = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555 | | | | | | | | | | |
| 300 | 19 | - | - | - | - | 10 | - | - | - | - |
| 350 | 25 | - | - | - | - | 13 | - | - | - | - |
| 400 | 31 | 13 | - | - | - | 17 | 6 | - | - | - |
| 450 | 39 | 15 | - | - | - | 21 | 7 | - | - | - |
| 500 | 47 | 18 | 10 | 9 | - | 25 | 8 | 6 | 6 | - |
| 550 | 55 | 21 | 11 | 10 | 8 | 30 | 9 | 6 | 6 | 6 |
| 600 | 65 | 24 | 12 | 11 | 9 | 35 | 10 | 7 | 7 | 6 |
| 650 | 76 | 27 | 13 | 11 | 10 | 41 | 12 | 8 | 8 | 7 |

## WM-G10/4, Ausf. ZM

| Burner rating kW | Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV | | | | | | High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1" | 1 1/2" | 2" | 65 | 80 | 100 | 1" | 1 1/2" | 2" | 65 | 80 | 100 |
| | Nom. diameter of gas butterfly | | | | | | Nom. diameter of gas butterfly | | | | | |
| | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **Natural Gas E** $H_i$ = 37.,26 MJ/m³ (10.35 kWh/m³), d = 0.606 | | | | | | | | | | | | |
| 600 | 45 | 17 | 12 | 9 | - | - | 15 | 8 | 8 | 6 | - | - |
| 700 | 60 | 21 | 16 | 11 | 10 | 9 | 21 | 11 | 10 | 8 | 7 | 6 |
| 800 | 78 | 27 | 19 | 14 | 11 | 10 | 27 | 14 | 13 | 10 | 8 | 8 |
| 900 | 96 | 32 | 22 | 15 | 12 | 11 | 32 | 16 | 15 | 11 | 9 | 8 |
| 1000 | 117 | 37 | 25 | 16 | 13 | 11 | 38 | 18 | 17 | 12 | 10 | 9 |
| 1100 | 139 | 44 | 29 | 19 | 14 | 12 | 45 | 20 | 19 | 13 | 10 | 9 |
| 1200 | 164 | 50 | 33 | 21 | 15 | 13 | 53 | 23 | 21 | 14 | 11 | 10 |
| 1250 | 177 | 54 | 35 | 22 | 16 | 13 | 57 | 25 | 23 | 15 | 11 | 10 |
| **Natural Gas LL** $H_i$ = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641 | | | | | | | | | | | | |
| 600 | 63 | 22 | 16 | 11 | 9 | 8 | 21 | 10 | 10 | 7 | 6 | 5 |
| 700 | 85 | 28 | 20 | 14 | 11 | 10 | 28 | 14 | 13 | 9 | 8 | 7 |
| 800 | 109 | 36 | 25 | 17 | 13 | 12 | 36 | 17 | 16 | 12 | 10 | 9 |
| 900 | 136 | 43 | 30 | 19 | 15 | 13 | 45 | 20 | 19 | 13 | 11 | 10 |
| 1000 | 166 | 51 | 35 | 21 | 16 | 14 | 54 | 24 | 22 | 15 | 12 | 10 |
| 1100 | 199 | 60 | 40 | 24 | 17 | 15 | 63 | 28 | 26 | 17 | 13 | 11 |
| 1200 | 235 | 70 | 46 | 27 | 19 | 16 | 74 | 32 | 29 | 19 | 14 | 12 |
| 1250 | 254 | 75 | 49 | 28 | 20 | 16 | 80 | 34 | 31 | 20 | 15 | 13 |
| **LPG B/P** $H_i$ = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555 | | | | | | | | | | | | |
| 600 | 22 | - | - | - | - | - | 8 | - | - | - | - | - |
| 700 | 28 | 13 | 10 | 8 | - | - | 11 | 7 | 6 | 5 | - | - |
| 800 | 36 | 16 | 12 | 10 | 9 | 9 | 14 | 9 | 8 | 7 | 6 | 6 |
| 900 | 44 | 18 | 14 | 11 | 10 | 9 | 17 | 10 | 9 | 8 | 7 | 7 |
| 1000 | 52 | 20 | 15 | 12 | 10 | 9 | 19 | 11 | 10 | 8 | 7 | 7 |
| 1100 | 62 | 22 | 17 | 12 | 10 | 10 | 22 | 11 | 11 | 8 | 7 | 7 |
| 1200 | 72 | 25 | 18 | 13 | 11 | 10 | 25 | 12 | 12 | 9 | 8 | 7 |
| 1250 | 77 | 26 | 19 | 13 | 11 | 10 | 26 | 13 | 12 | 9 | 8 | 7 |

## WM-G10/3, version ZM

| Burner rating kW | Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV | | | | | | | High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3/4" | 1" | 1 1/2" | 2" | 65 | 80 | 100 | 3/4" | 1" | 1 1/2" | 2" | 65 | 80 | 100 |
| | Nom. diameter of gas butterfly | | | | | | | Nom. diameter of gas butterfly | | | | | | |
| | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **Natural Gas E** $H_i$ = 37.,26 MJ/m³ (10.35 kWh/m³), d = 0.606 | | | | | | | | | | | | | | |
| 500 | 104 | 34 | 14 | 11 | 9 | - | - | 54 | 12 | 7 | 7 | 6 | - | - |
| 550 | 124 | 40 | 16 | 12 | 10 | 8 | 8 | 65 | 14 | 8 | 8 | 6 | 6 | 5 |
| 600 | 147 | 46 | 18 | 14 | 10 | 9 | 9 | 77 | 17 | 9 | 9 | 7 | 6 | 6 |
| 650 | 171 | 53 | 20 | 15 | 11 | 10 | 9 | 90 | 19 | 10 | 10 | 8 | 7 | 6 |
| 700 | 198 | 61 | 22 | 17 | 12 | 10 | 10 | 104 | 22 | 11 | 11 | 8 | 7 | 7 |
| 750 | 226 | 69 | 25 | 18 | 13 | 11 | 10 | 119 | 24 | 13 | 12 | 9 | 8 | 8 |
| 800 | 257 | 78 | 27 | 20 | 14 | 12 | 11 | 135 | 27 | 14 | 14 | 10 | 9 | 8 |
| 850 | - | 87 | 30 | 22 | 15 | 13 | 12 | - | 30 | 15 | 15 | 11 | 9 | 9 |
| 900 | - | 97 | 33 | 24 | 16 | 13 | 12 | - | 33 | 17 | 16 | 12 | 10 | 9 |
| 950 | - | 107 | 36 | 26 | 17 | 14 | 13 | - | 37 | 18 | 18 | 13 | 11 | 10 |
| 1000 | - | 118 | 39 | 28 | 19 | 15 | 13 | - | 40 | 20 | 19 | 13 | 11 | 10 |
| **Natural Gas LL** $H_i$ = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641 | | | | | | | | | | | | | | |
| 500 | 148 | 46 | 17 | 13 | 10 | 9 | 8 | 77 | 16 | 9 | 9 | 7 | 6 | 5 |
| 550 | 178 | 55 | 20 | 15 | 11 | 9 | 9 | 93 | 19 | 10 | 10 | 7 | 6 | 6 |
| 600 | 210 | 64 | 23 | 17 | 12 | 10 | 9 | 110 | 22 | 11 | 11 | 8 | 7 | 7 |
| 650 | 246 | 74 | 26 | 19 | 13 | 11 | 10 | 129 | 25 | 13 | 13 | 9 | 8 | 7 |
| 700 | - | 85 | 29 | 21 | 15 | 12 | 11 | - | 29 | 14 | 14 | 10 | 8 | 8 |
| 750 | - | 97 | 33 | 23 | 16 | 13 | 11 | - | 33 | 16 | 16 | 11 | 9 | 9 |
| 800 | - | 110 | 36 | 26 | 17 | 14 | 12 | - | 37 | 18 | 17 | 12 | 10 | 9 |
| 850 | - | 123 | 40 | 28 | 18 | 15 | 13 | - | 41 | 20 | 19 | 13 | 11 | 10 |
| 900 | - | 137 | 44 | 31 | 20 | 15 | 14 | - | 45 | 21 | 21 | 14 | 11 | 11 |
| 950 | - | 152 | 48 | 33 | 21 | 16 | 14 | - | 50 | 23 | 23 | 15 | 12 | 11 |
| 1000 | - | 167 | 53 | 36 | 23 | 17 | 15 | - | 55 | 25 | 25 | 16 | 13 | 12 |
| **LPG B/P** $H_i$ = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555 | | | | | | | | | | | | | | |
| 500 | 46 | 17 | - | - | - | - | - | 24 | 7 | - | - | - | - | - |
| 550 | 54 | 20 | 10 | 8 | - | - | - | 29 | 8 | 5 | 5 | - | - | - |
| 600 | 64 | 23 | 11 | 9 | - | - | - | 34 | 9 | 6 | 6 | - | - | - |
| 650 | 74 | 26 | 12 | 10 | 8 | - | - | 39 | 10 | 7 | 6 | 5 | - | - |
| 700 | 85 | 29 | 13 | 11 | 9 | 8 | - | 45 | 11 | 7 | 7 | 6 | 5 | - |
| 750 | 97 | 33 | 14 | 12 | 10 | 9 | 8 | 51 | 13 | 8 | 8 | 6 | 6 | 6 |
| 800 | 110 | 36 | 16 | 13 | 10 | 9 | 9 | 58 | 14 | 9 | 8 | 7 | 6 | 6 |
| 850 | 123 | 40 | 17 | 13 | 11 | 10 | 9 | 65 | 15 | 9 | 9 | 7 | 7 | 7 |
| 900 | 137 | 44 | 18 | 14 | 11 | 10 | 10 | 73 | 17 | 10 | 10 | 8 | 7 | 7 |
| 950 | 152 | 49 | 20 | 15 | 12 | 11 | 10 | 81 | 18 | 11 | 11 | 8 | 8 | 7 |
| 1000 | 168 | 53 | 21 | 16 | 13 | 11 | 10 | 89 | 20 | 12 | 11 | 9 | 8 | 8 |

**For valve train sizing with town's gas and sewage gas see separate worksheet, print No. 900.**

**The CE-PIN No. is not valid for ZM version gas burners operating on town's gas or sewage gas.**
**Applicable additional and accessory prices, as well as conditions which must be adhered to, are available on request.**

# Valve train sizing
# WM-G10, version ZM-LN

## WM-G10/2, version ZM-LN

| Burner rating kW | Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV | | | | | High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 3/4" | 1" | 1 1/2" | 2" | 65 | 3/4" | 1" | 1 1/2" | 2" | 65 |
| | Nom. diameter of gas butterfly | | | | | Nom. diameter of gas butterfly | | | | |
| | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| **Natural Gas E** $H_i$ = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606 | | | | | | | | | | |
| 300 | 42 | 17 | 10 | 9 | - | 23 | 8 | 6 | 6 | - |
| 340 | 53 | 21 | 12 | 10 | 9 | 29 | 10 | 7 | 7 | 7 |
| 380 | 66 | 25 | 14 | 12 | 11 | 36 | 12 | 9 | 9 | 8 |
| 420 | 79 | 30 | 16 | 14 | 12 | 44 | 14 | 10 | 10 | 9 |
| 460 | 93 | 34 | 17 | 15 | 13 | 51 | 16 | 11 | 11 | 10 |
| 500 | 109 | 39 | 19 | 16 | 14 | 59 | 17 | 12 | 12 | 11 |
| 540 | 125 | 44 | 21 | 17 | 15 | 68 | 19 | 13 | 13 | 11 |
| 580 | 143 | 49 | 23 | 19 | 16 | 78 | 21 | 14 | 14 | 12 |
| 630 | 167 | 56 | 25 | 21 | 17 | 91 | 24 | 16 | 16 | 13 |
| **Natural Gas LL** $H_i$ = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641 | | | | | | | | | | |
| 300 | 59 | 22 | 12 | 11 | 9 | 32 | 10 | 7 | 7 | 6 |
| 340 | 75 | 28 | 14 | 13 | 11 | 41 | 12 | 9 | 9 | 8 |
| 380 | 92 | 34 | 17 | 15 | 13 | 50 | 15 | 11 | 11 | 10 |
| 420 | 111 | 40 | 19 | 17 | 14 | 61 | 18 | 13 | 12 | 11 |
| 460 | 132 | 46 | 22 | 18 | 15 | 72 | 20 | 14 | 14 | 12 |
| 500 | 154 | 53 | 24 | 20 | 17 | 84 | 23 | 15 | 15 | 13 |
| 540 | 178 | 60 | 26 | 22 | 18 | 97 | 25 | 17 | 17 | 14 |
| 580 | 204 | 68 | 29 | 24 | 19 | 110 | 28 | 18 | 18 | 15 |
| 630 | 239 | 78 | 32 | 26 | 21 | 129 | 32 | 20 | 20 | 17 |
| **LPG B/P** $H_i$ = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555 | | | | | | | | | | |
| 300 | 20 | - | - | - | - | 11 | - | - | - | - |
| 340 | 25 | 12 | - | - | - | 14 | 6 | - | - | - |
| 380 | 31 | 14 | 9 | 9 | 8 | 17 | 7 | 6 | 6 | 5 |
| 420 | 37 | 17 | 11 | 10 | 9 | 21 | 9 | 7 | 7 | 7 |
| 460 | 42 | 18 | 11 | 10 | 10 | 24 | 9 | 7 | 7 | 7 |
| 500 | 49 | 20 | 12 | 11 | 10 | 27 | 10 | 8 | 7 | 7 |
| 540 | 55 | 22 | 12 | 11 | 10 | 30 | 10 | 8 | 8 | 7 |
| 580 | 62 | 24 | 13 | 11 | 10 | 34 | 11 | 8 | 8 | 7 |
| 630 | 72 | 26 | 14 | 12 | 10 | 39 | 12 | 8 | 8 | 7 |

## WM-G10/3, version`ZM-LN

| Burner rating kW | Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV | | | | | | | High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3/4" | 1" | 1 1/2" | 2" | 65 | 80 | 100 | 3/4" | 1" | 1 1/2" | 2" | 65 | 80 | 100 |
| | Nom. diameter of gas butterfly | | | | | | | Nom. diameter of gas butterfly | | | | | | |
| | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **Natural Gas E** $H_i$ = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606 | | | | | | | | | | | | | | |
| 450 | 87 | 30 | 14 | 12 | 10 | 9 | 9 | 46 | 12 | 8 | 8 | 7 | 6 | 6 |
| 500 | 106 | 37 | 17 | 14 | 12 | 11 | 10 | 57 | 15 | 10 | 10 | 8 | 8 | 8 |
| 550 | 128 | 44 | 20 | 16 | 13 | 12 | 12 | 69 | 18 | 12 | 12 | 10 | 9 | 9 |
| 600 | 152 | 51 | 23 | 19 | 15 | 14 | 13 | 82 | 21 | 14 | 14 | 12 | 11 | 11 |
| 650 | 177 | 59 | 26 | 21 | 17 | 15 | 15 | 96 | 25 | 16 | 16 | 13 | 12 | 12 |
| 700 | 204 | 67 | 28 | 23 | 18 | 16 | 15 | 110 | 27 | 17 | 17 | 14 | 13 | 13 |
| 750 | 232 | 75 | 31 | 24 | 19 | 17 | 16 | 125 | 30 | 19 | 18 | 15 | 14 | 13 |
| 800 | 263 | 84 | 34 | 26 | 20 | 18 | 17 | - | 33 | 20 | 20 | 16 | 15 | 14 |
| 850 | 295 | 94 | 36 | 28 | 22 | 19 | 18 | - | 36 | 22 | 21 | 17 | 16 | 15 |
| 900 | - | 103 | 39 | 30 | 23 | 20 | 19 | - | 40 | 23 | 23 | 18 | 16 | 16 |
| **Natural Gas LL** $H_i$ = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641 | | | | | | | | | | | | | | |
| 450 | 123 | 41 | 17 | 14 | 11 | 10 | 10 | 65 | 16 | 10 | 10 | 8 | 7 | 7 |
| 500 | 151 | 49 | 21 | 17 | 13 | 12 | 11 | 81 | 20 | 12 | 12 | 10 | 9 | 9 |
| 550 | 182 | 59 | 24 | 19 | 15 | 14 | 13 | 97 | 23 | 14 | 14 | 12 | 11 | 10 |
| 600 | 216 | 70 | 28 | 22 | 18 | 16 | 15 | 116 | 28 | 17 | 17 | 14 | 12 | 12 |
| 650 | 252 | 81 | 32 | 25 | 20 | 17 | 16 | 135 | 32 | 19 | 19 | 15 | 14 | 14 |
| 700 | 291 | 92 | 36 | 28 | 21 | 18 | 17 | - | 36 | 21 | 21 | 17 | 15 | 14 |
| 750 | - | 104 | 39 | 30 | 23 | 20 | 18 | - | 40 | 23 | 23 | 18 | 16 | 15 |
| 800 | - | 117 | 43 | 33 | 24 | 21 | 19 | - | 44 | 25 | 25 | 19 | 17 | 16 |
| 850 | - | 130 | 47 | 35 | 26 | 22 | 20 | - | 48 | 27 | 27 | 20 | 18 | 17 |
| 900 | - | 145 | 52 | 38 | 28 | 23 | 21 | - | 53 | 29 | 29 | 22 | 19 | 18 |

**The combustion chamber pressure in mbar must be added to the minimum gas pressure required.**

For low pressure supplies, pressure regulating devices with safety membrane in accordance with EN 88 are used. The maximum permissible supply pressure before the shut off valve is 300 mbar.

For high pressure supplies, high pressure regulating devices in accordance with EN 3380 can be selected from the brochure "Pressure regulating units with safety devices for Weishaupt gas and dual fuel burners." This details high gas pressure sets for supply pressures of up to 4 bar.

See burner plate for maximum connection pressure.

**CE-PIN No.:**
CE 0085BQ0027

### Burner order number

| Burner type | Version | Order No. |
|---|---|---|
| WM-G10/2 | ZM | 217 110 20 |
| WM-G10/3 | ZM | 217 110 30 |
| WM-G10/4 | ZM | 217 110 40 |
| WM-G10/2 | ZM-LN | 217 110 21 |
| WM-G10/3 | ZM-LN | 217 110 31 |

### DMV order number (with valve connection piece)

| Order No. | 10/2 | 10/3 | 10/4 |
|---|---|---|---|
| R 3/4 | 100 010 00 | | – |
| R 1 | 100 010 01 | | |
| R 1 1/2 | 100 010 02 | | |
| R 2 | 100 010 03 | | |
| DN 65 | 100 010 06 | | |
| DN 80 | – | 100 010 07 | |
| DN 100 | – | 100 010 08 | |

Further gas accessories, e.g. filters and governors can be found in the accessories list (Print no.: 830**212**01)

# Special equipment
# Combustion manager overview

## Special equipment

| Special equipment | | WM - G10/2-A / ZM | WM - G10/3-A / ZM | WM - G10/4-A / ZM | WM - G10/2-A / ZM-LN | WM - G10/3-A / ZM-LN |
|---|---|---|---|---|---|---|
| Comb. head extension | by 100 mm | 250 030 03 | 250 030 06 | 250 030 09 | 250 030 15 | 250 030 18 |
| | by 200 mm | 250 030 04 | 250 030 07 | 250 030 10 | 250 030 16 | 250 030 19 |
| | by 300 mm | 250 030 05 | 250 030 08 | 250 030 11 | 250 030 17 | 250 030 20 |
| Capacity controller for W-FM 100 | | 110 017 18 | 110 017 18 | 110 017 18 | 110 017 18 | 110 017 18 |
| Extraneous air inlet | | 210 030 09 | 210 030 09 | 210 030 09 | 210 030 09 | 210 030 09 |
| Solenoid valve for air pressure switch test - continuous fan or post purge | | 250 030 21 | 250 030 21 | 250 030 21 | 250 030 21 | 250 030 21 |

**Note: Additional price for fitted and wired DMV with plug connections available on request.**
**Burners to TRD, burners with plug connections and other executions available on request.**

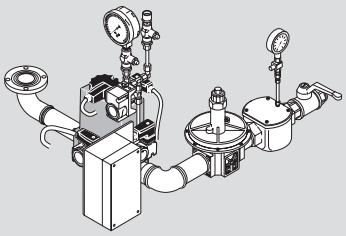
## Combustion manager overview

| System overview<br>Digital combustion management | W-FM 50 [1] | W-FM 100 | W-FM 200 |
|---|---|---|---|
| Combustion manager for intermittent operation | ● | ● | ● |
| Combustion manager for continuous operation | | ● | ● |
| Flame sensor for intermittent operation | QRC, Ion | QRI, Ion | QRI, Ion |
| Flame sensor for continuous operation | | QRI, Ion | QRI, Ion |
| Servomotors in electronic compound (max.) | 2 off | 4 off | 6 off |
| Servomotors with stepping motors | ● | ● | ● |
| Speed control available | ● | | ● |
| $O_2$ trim available | | | ● |
| Dual fuel operation | | ● | ● |
| Gas valve proving | ● | ● | ● |
| Integrated self checking PID controller temperature or pressure | | Optional | ● |
| Removable control unit (max. distance) | 20 m | 100 m | 100 m |
| Fuel consumption meter | ●[2] | | ● |
| Display of combustion efficiency | | | ● |
| eBUS / MOD BUS interface | ●[3] | ● | ● |
| PC supported commissioning | | ● | ● |

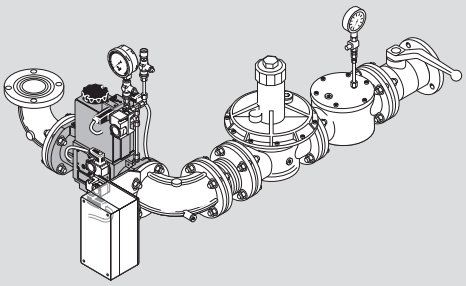
[1] Standard from 2006 [2] not with speed control [3] eBUS only

# Installation examples
# Valve train layout

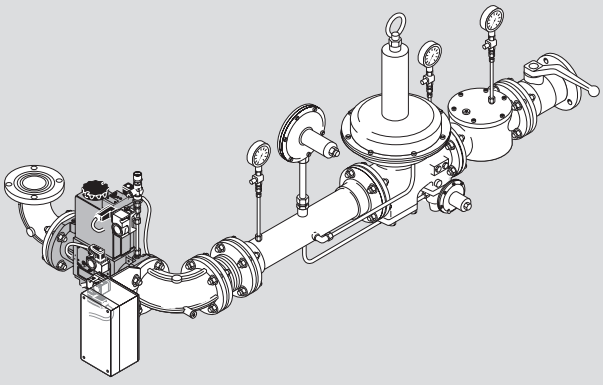
**Low pressure supply**
**Screwed valve train with DMV valves**



**Low pressure supply**
**Flanged valve train with DMV valves**



**High pressure supply**
**Flanged valve train with DMV valves**



The installation examples show basic valve trains, i.e. DMV solenoid valves and additional gas valve train components.

**Layout of the valve train**
On boilers with hinged doors, the valve train must be mounted on the opposite side to the boiler door hinges.

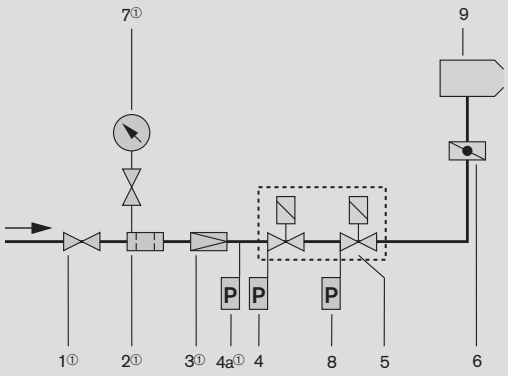
**Compensator**
To enable a tension free mounting of the valve train, the fitting of a compensator is recommended.

**Break points in the valve train**
Break points in the valve train should be provided to enable the door of the heat exchanger to be swung open. The main gas line is best separated at the compensator.

**Support of the valve train**
The valve train should be properly supported in accordance with the site conditions. See the Weishaupt accessories list for various valve train support components.

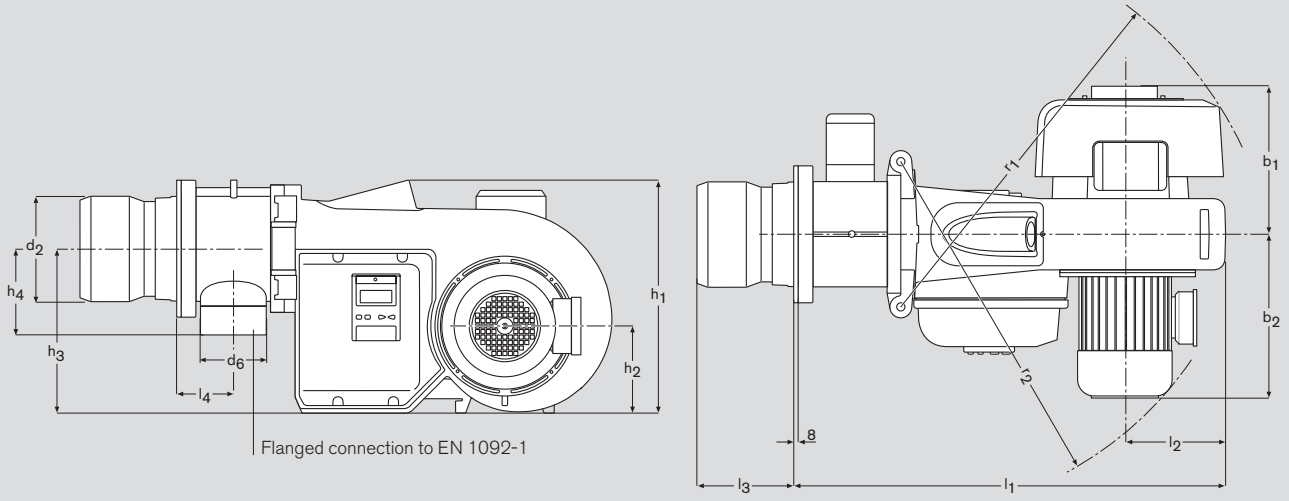
**Gas meter**
A gas meter must be installed to measure gas consumption during commissioning.

**Valve train layout**




| | | | |
|---|---|---|---|
| 1 | Ball valve ① | 7 | Pressure gauge with ball valve ① |
| 2 | Gas filter ① | 8 | Gas pressure switch (valve proving) |
| 3 | Governor (low pressure) ① | 9 | Burner |
| 4 | Low gas pressure switch | | |
| 4a | High gas pressure switch (for TRD) ① | ① | Not included in burner and valve train price |
| 5 | Double solenoid valve(DMV) | | |
| 6 | Gas butterfly valve | | |

# Dimensions

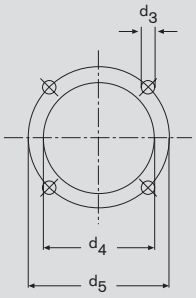


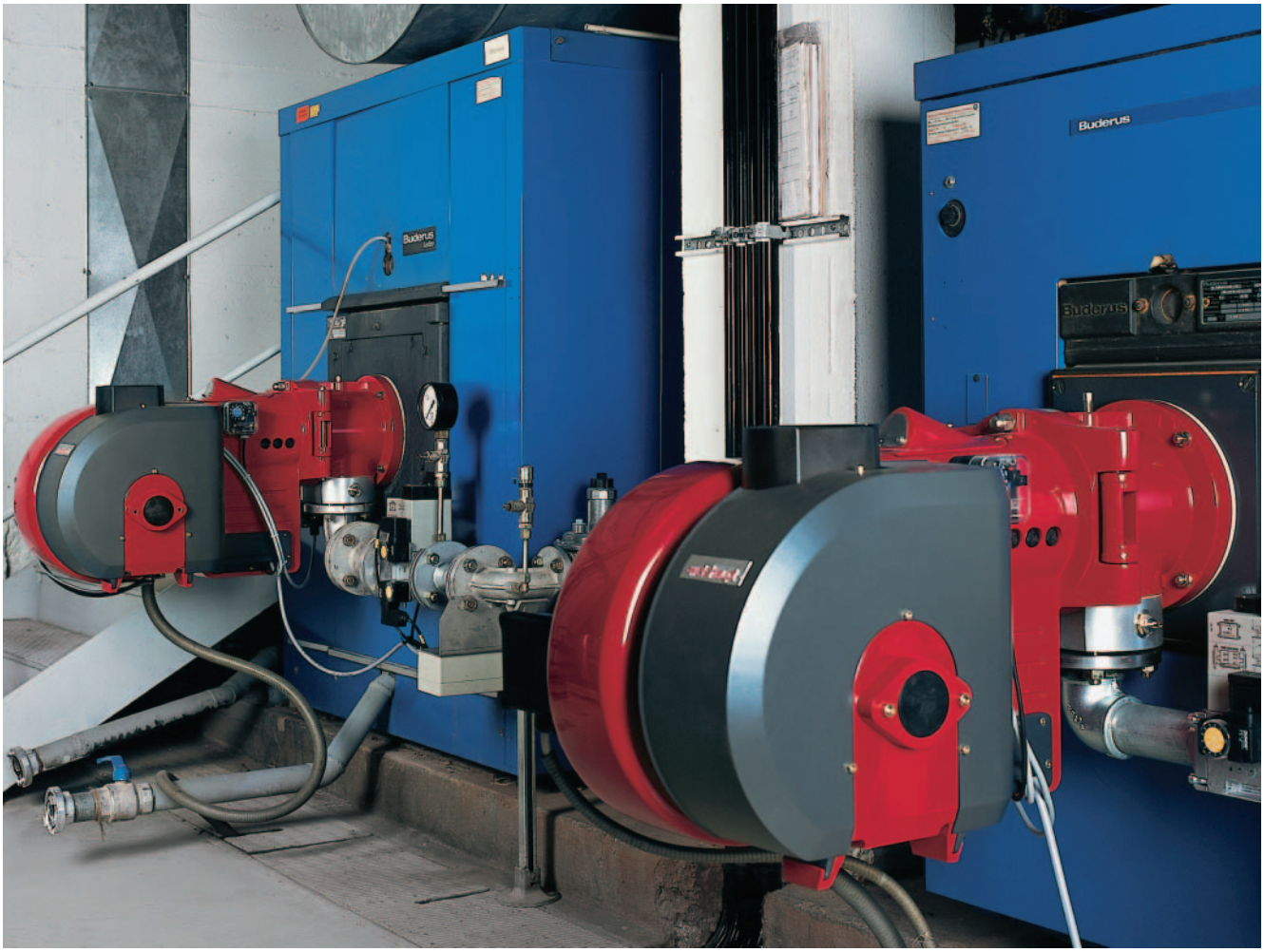

| Burner type | Dimensions in mm l1 | l2 | l3 | l4 | b1 | b2 | h1 | h2 | h3 | h4 | r1 | r2 | d2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WM-G10/2 ZM** | 833 | 205 | 164 – 176 | 98 | 276 | 307 | 445 | 167 | 313 | 140 | 718 | 682 | 160 |
| **WM-G10/3 ZM** | 833 | 205 | 199 – 224 | 108 | 276 | 307 | 445 | 167 | 313 | 162 | 718 | 682 | 200 |
| **WM-G10/4 ZM** | 833 | 205 | 195 – 220 | 108 | 276 | 307 | 445 | 167 | 313 | 162 | 718 | 682 | 215 |
| **WM-G10/2 ZM-LN** | 833 | 205 | 132 – 143 | 98 | 276 | 307 | 445 | 167 | 313 | 140 | 718 | 682 | 160 |
| **WM-G10/3 ZM-LN** | 833 | 205 | 177 – 197 | 108 | 276 | 307 | 445 | 167 | 313 | 162 | 718 | 682 | 200 |

| Burner type | Dimensions in mm d3 | d4 | d5 | d6 |
|---|---|---|---|---|
| **WM-G10/2 ZM** | M10 | 165 | 186 | DN40 |
| **WM-G10/3 ZM** | M10 | 210 | 235 | DN50 |
| **WM-G10/4 ZM** | M10 | 220 | 235 | DN50 |
| **WM-G10/2 ZM-LN** | M10 | 165 | 186 | DN40 |
| **WM-G10/3 ZM-LN** | M10 | 210 | 235 | DN50 |

All dimensions are approximate.
Weishaupt reserve the right to make alterations in light of future developments.

**Boiler plate drilling dimensions**






*Plant at the Special Neurology Clinic in Dietenbronn, Germany*

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