

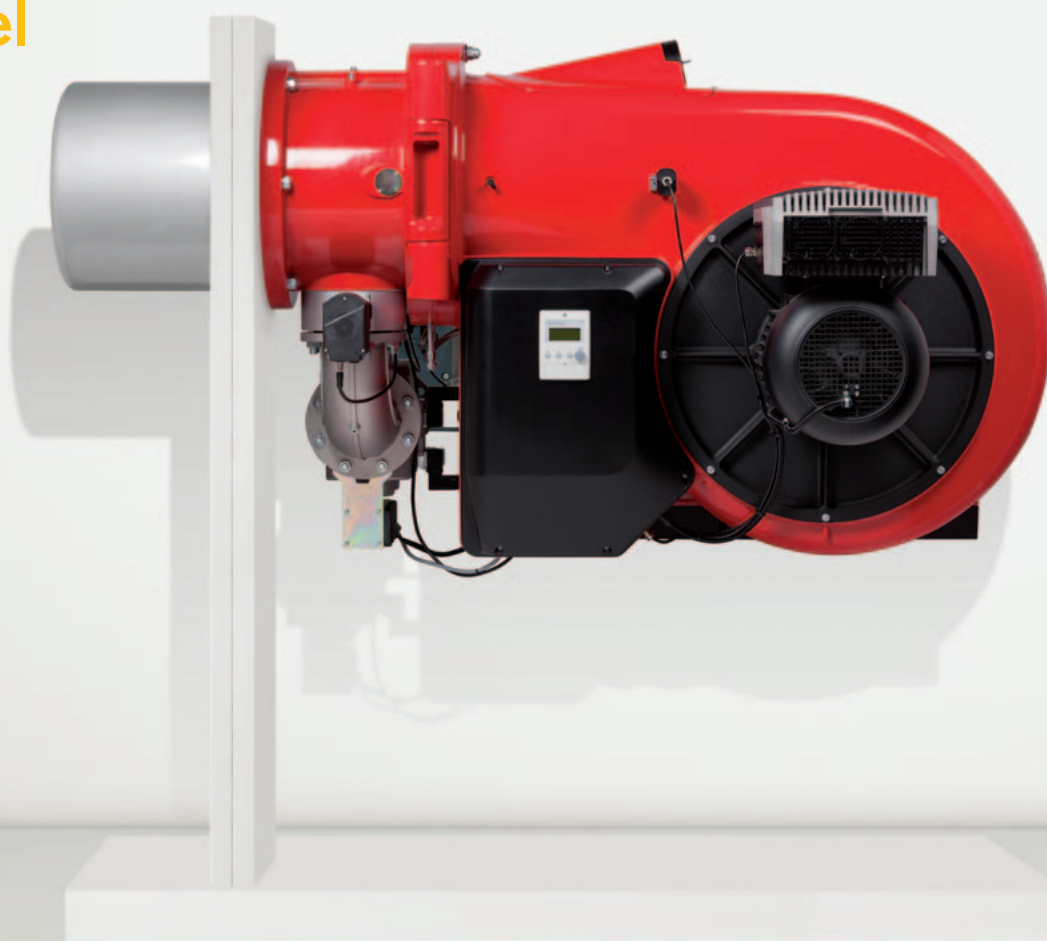
Weishaupt monarch<sup>®</sup> burners  
WM50 750–12000 kW

**WM 50**

**Gas**

**Oil**

**Dual-fuel**



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# Progress and tradition.



*For decades, the monarch® trademark has stood for burner power and quality.*

Weishaupt's monarch®-series burners have been used on a wide variety of heat generators and industrial plant for more than seven decades and their success has helped underpin Weishaupt's outstanding reputation.

The latest monarch® series is writing the next chapter in this success story. State-of-the-art technology and a compact design combine to make these powerful burners suitable for a wide range of applications.

## Use.

### Fuels

- Natural gas
- LPG
- Class D gas oil per BS 2869/IS 251
- Class A2 gas oil per BS 2869/IS 251
- Green fuels

Further details on green fuel specifications can be found on page 21.

The suitability of fuels of differing quality must be confirmed in advance with Weishaupt.

### Applications

Weishaupt WM50 burners are suitable for intermittent firing and continuous firing on:

- EN 303-compliant heat generators
- LTHW boilers
- HTHW boilers
- Steam boilers
- Air heaters
- Certain process applications



### EU directives and regulations

The burners are independently tested and certified by a Notified Body. They fulfil the applicable requirements of the following EU directives and regulations:

- EMC** EMC Directive 2014/30/EU
- LVD** Low-Voltage Directive 2014/35/EU
- MD** Machinery Directive 2006/42/EC
- GAR** Gas Appliance Regulations (EU) 2016/426
- PED<sup>1)</sup>** Pressure Equipment Directive 2014/68/EU
- RoHS** Restriction of Hazardous Substances Directive 2011/65/EU

<sup>1)</sup> With the appropriate choice of equipment.

The relevant applied standards are detailed in the declaration of conformity.

All burners are labelled with:

- CE mark

Type-tested gas burners are labelled with:

- CE-PIN per Regulation (EU) 2016/426
- Identification number of the Notified Body

Type-tested oil burners are labelled with:

- DIN CERTCO label and Reg. No.

Type-tested dual-fuel (gas/oil) burners are labelled with:

- CE-PIN per Regulation (EU) 2016/426
- Identification number of the Notified Body
- DIN CERTCO label and Reg. No.

### United Kingdom regulations <sup>2)</sup>

Burners supplied for use in the UK are certified by an Approved Body and fulfil the applicable requirements of equivalent British legislation.

All burners are labelled with:

- UKCA mark

Type-tested gas and dual-fuel burners are labelled with:

- UKCA GAR certificate No.
- Identification No. of the Approved Body

<sup>2)</sup> From 1 January 2025

### Permissible ambient conditions

- Ambient temperature
  - 15 °C to +40 °C for gas firing
  - 10 °C to +40 °C for oil firing
- Maximum 80 % relative humidity, no condensation
- Combustion air must be free of aggressive substances (halogens, chlorides, fluorides, etc.) and impurities (dust, debris, vapours, etc.)
- Adequate ventilation must be ensured for operation in enclosed spaces
- For plant in unheated areas, certain further measures may be required

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

### Protection class

IP 54

# The right version for every application.

**The latest WM-series burners are compact, powerful, and quiet. They are writing the next chapter in the decades-long success story of Weishaupt's legendary monarch® burners.**

## **Groundbreaking fan technology**

Right from the very earliest stages of burner development, particular emphasis was placed on a compact, aerodynamic design and low operational noise levels.

To realise this goal a completely new air inlet and air damper control were developed. This special housing design with its self-opening air inlet and the new air-damper technology result in increased fan pressure and thus in greater capacity despite the burner's more compact form.

Air damper control provides a high degree of linearity even at the lower end of the burner's operating range and, combined with the sound-attenuated air inlet which is included as standard, ensures quieter operation.

## **Fast commissioning, simple servicing**

All WM50 burners are delivered with their mixing assembly preset for the required output, provided all relevant appliance details are known. Final adjustments are made using the menu-controlled commissioning program.

All of the burner's components, such as its mixing assembly, air damper, and combustion manager, are readily accessible despite its

compact form. This enables maintenance and servicing work to be carried out quickly and easily, aided by the standard hinged flange which provides a perfect servicing position.

Adjustment to suit different combustion chamber conditions can easily be made with the burner in its installed position. The integral sightglass enables ignition behaviour and the flame to be observed.

## **Burner versions**

Various burner versions are available to meet differing emission limits and operational requirements:

### **ZM-NR version**

Gas, oil, and dual-fuel burners tested for Class 2 emissions.

### **3LN version**

Gas, oil, and dual-fuel burners with multiflam® mixing assemblies. The burners, which are tested for Class 3 emissions, are for use on three-pass and through-pass boilers only and are suitable for the combustion of natural gas, LPG, and gas oil.

### **4LN version**

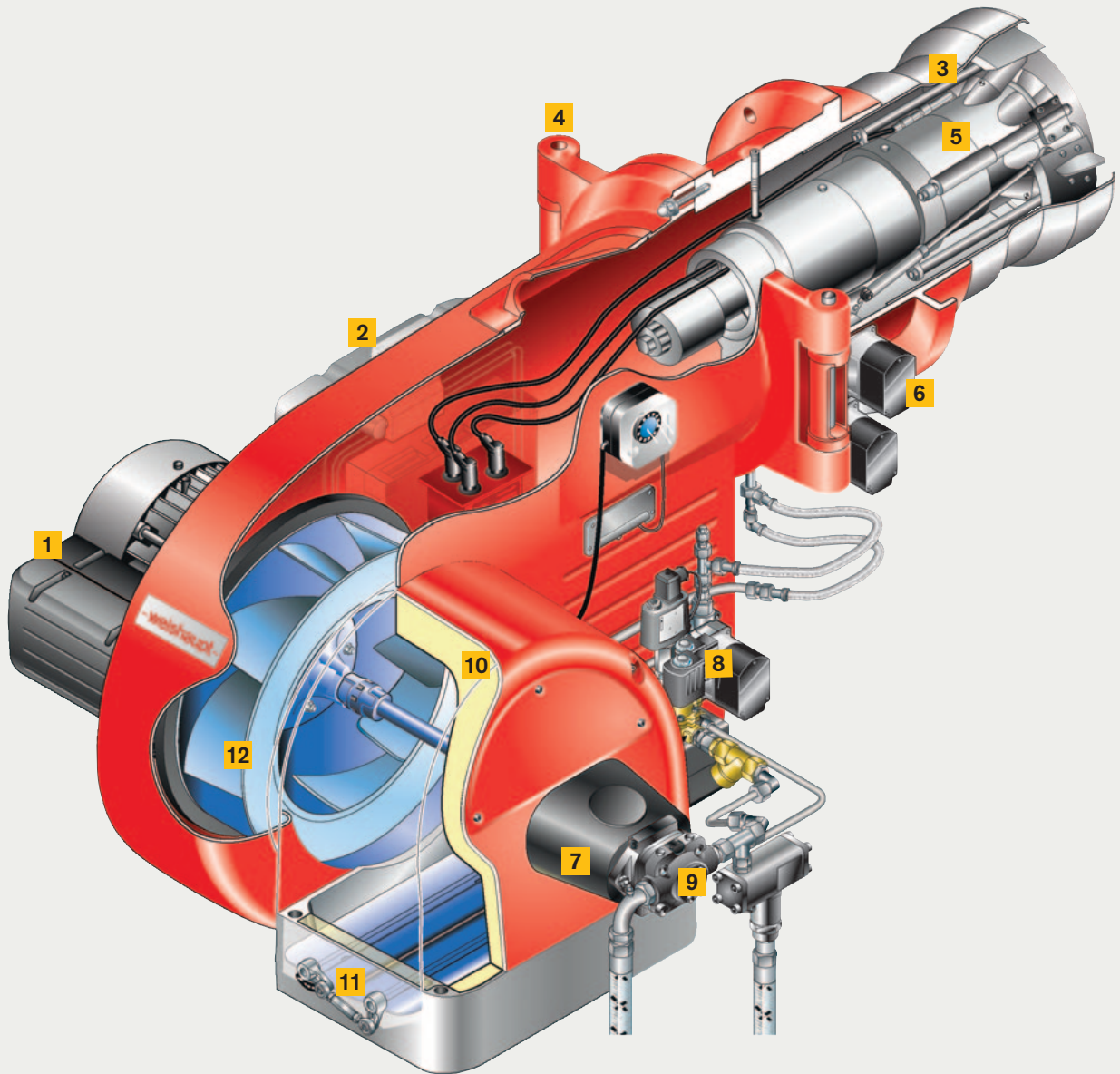
Gas and dual-fuel burners with FGR (flue gas recirculation) that can meet the world's most stringent emissions limits. Good emission values depend on the specific combustion chamber geometry, the thermal loading of the combustion chamber, and its configuration (three-pass or reverse-flame).

## **The key benefits:**

- Digital combustion management with electronic compound regulation
- Compact design
- Easy access to all components
- Sound-attenuated air inlet as standard for quieter operation
- IP 54 protection
- Can be used with a wide variety of gases, such as natural gas, LPG, town gas, coke-oven gas\*, biogas\*, sewage gas\*, or coal-mine methane\* (\*gas analysis required)
- Various mixing assemblies to suit different emission limit requirements
- Suitable for intermittent and continuous firing
- Load control can be effected via thermostat, pressure transducer, or current/voltage signals
- Sliding-two-stage or modulating operation
- When the necessary data are provided, all WM burners are supplied with the mixing assembly preset for the required output of the burner.
- Electromagnetic clutch for decoupling of the oil pump (optional in lieu of standard on some models)
- Computer-controlled function test of each individual burner at the factory
- Well-established, global service network

## **Additional optional features**

- VSD (variable-speed drive)
- Integral load controller for W-FM100
- Air inlet for ducted air supply

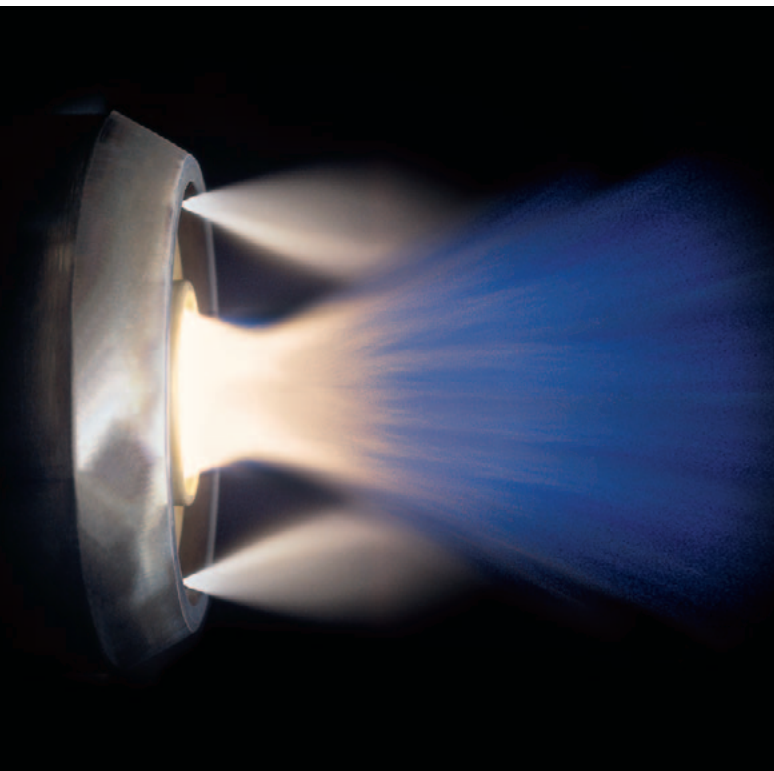


WM-GL50 version ZM-R-NR

- |   |                                       |  |
|---|---------------------------------------|--|
| <b>1</b> Burner motor with optional frequency convertor                   | <b>5</b> Mixing assembly              | <b>9</b> Oil pump                            |
| <b>2</b> Digital combustion manager and inbuilt control and display unit  | <b>6</b> Gas butterfly valve actuator | <b>10</b> Sound-attenuated air inlet housing |
| <b>3</b> Flame monitoring   | <b>7</b> Electromagnetic clutch       | <b>11</b> Air damper                         |
| <b>4</b> Burner housing can be hinged open to the left or right-hand side | <b>8</b> Double gas valve assembly    | <b>12</b> Fan wheel                          |

# Reduced emissions with 3LN burners.

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*Typical flame pattern of a multiflam® burner*

**The multiflam® principle, that was developed and patented by Weishaupt, is an innovative way of greatly reducing the emission of nitrogen oxides from combustion plant.**

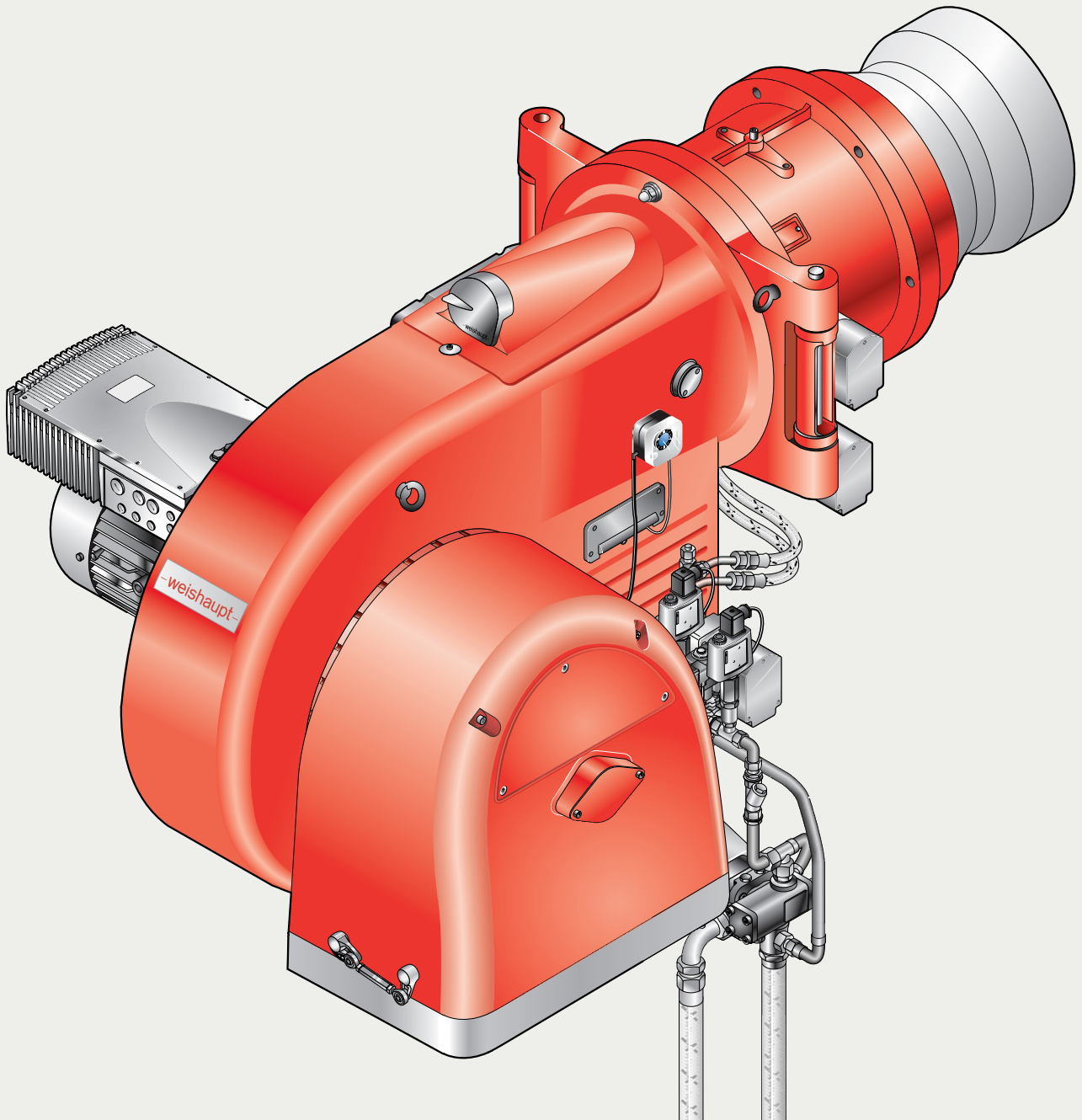
Right at the core of Weishaupt's multiflam® technology lies its special mixing assembly design. Fuel is distributed among several nozzles and then combusted in a primary and a secondary flame. Temperature in the flame's core is considerably reduced, which results in an effective reduction of nitrogen oxides.

The wide range of ratings across which multiflam® burners are now available is equally outstanding. All the way from the WM10 monarch®-series burner right up to the WK80 industrial-series burner, there is now a multiflam® burner for outputs ranging from 100 up to 23 000 kW.

Weishaupt multiflam® burners have been proving themselves in the field for many years. As fully fledged gas, oil, and dual-fuel burners, they are always the first choice for achieving low NO<sub>x</sub> emission limit values without resorting to external measures.

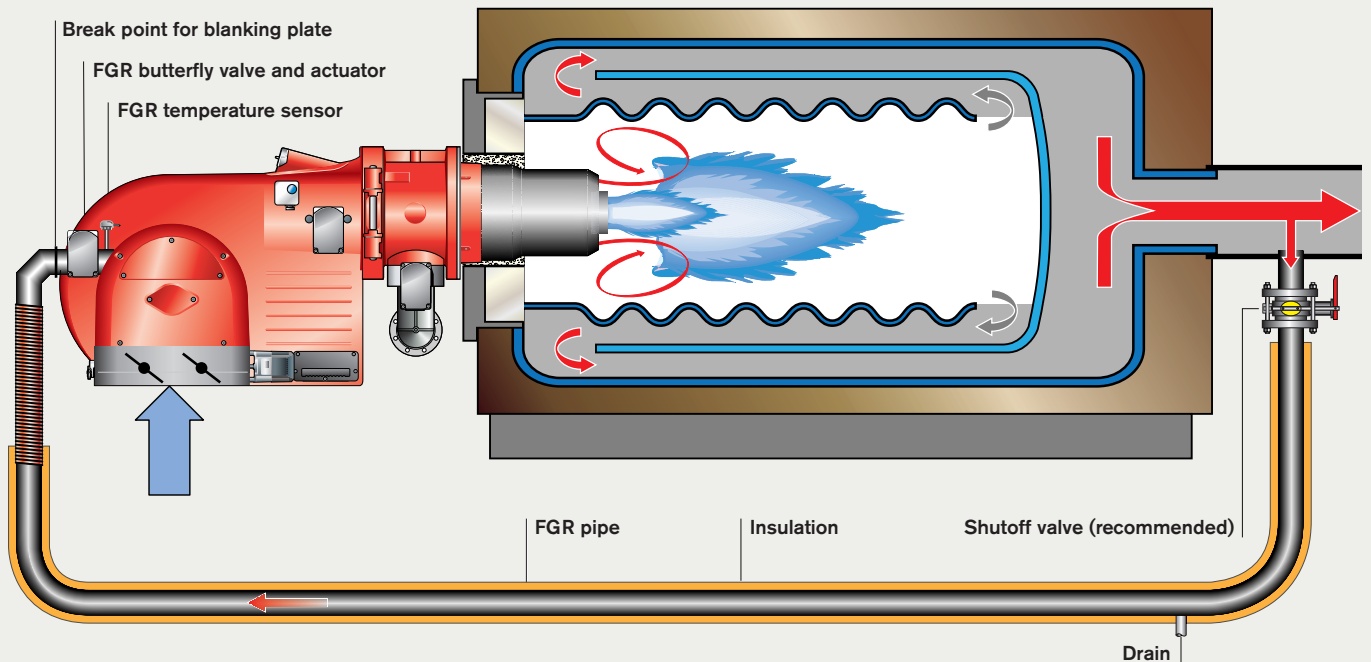
Good combustion figures are dependent on more than just the burner. They also depend on the combustion chamber geometry and its thermal loading, and the design of the heat generator (three-pass / through-pass type).

When Weishaupt guarantees the NO<sub>x</sub> emissions for a particular application, the guarantee can only be made with reference to certain predefined constraints, including thermal loading, the combustion air temperature and humidity, medium temperature, measurement tolerances, etc.



WM-GL50 version ZM-R-3LN

# Reduced emissions with 4LN burners.



General arrangement of an FGR system with a WM-series burner

**Weishaupt 4LN-version burners are an innovative further development of patented multiflam® technology combined with flue gas recirculation (FGR).**

At the heart of this further development of larger multiflam® burners lies a swirl body in the secondary air area and a longer flame on the primary diffuser.

In combination with external FGR, the swirl body generates an intensive mixing of the fuel, air, and recirculated flue gas. The primary flame, which is adapted for high flue gas recirculation rates, ensures the flame remains stable at all stages of operation.

## How does FGR work?

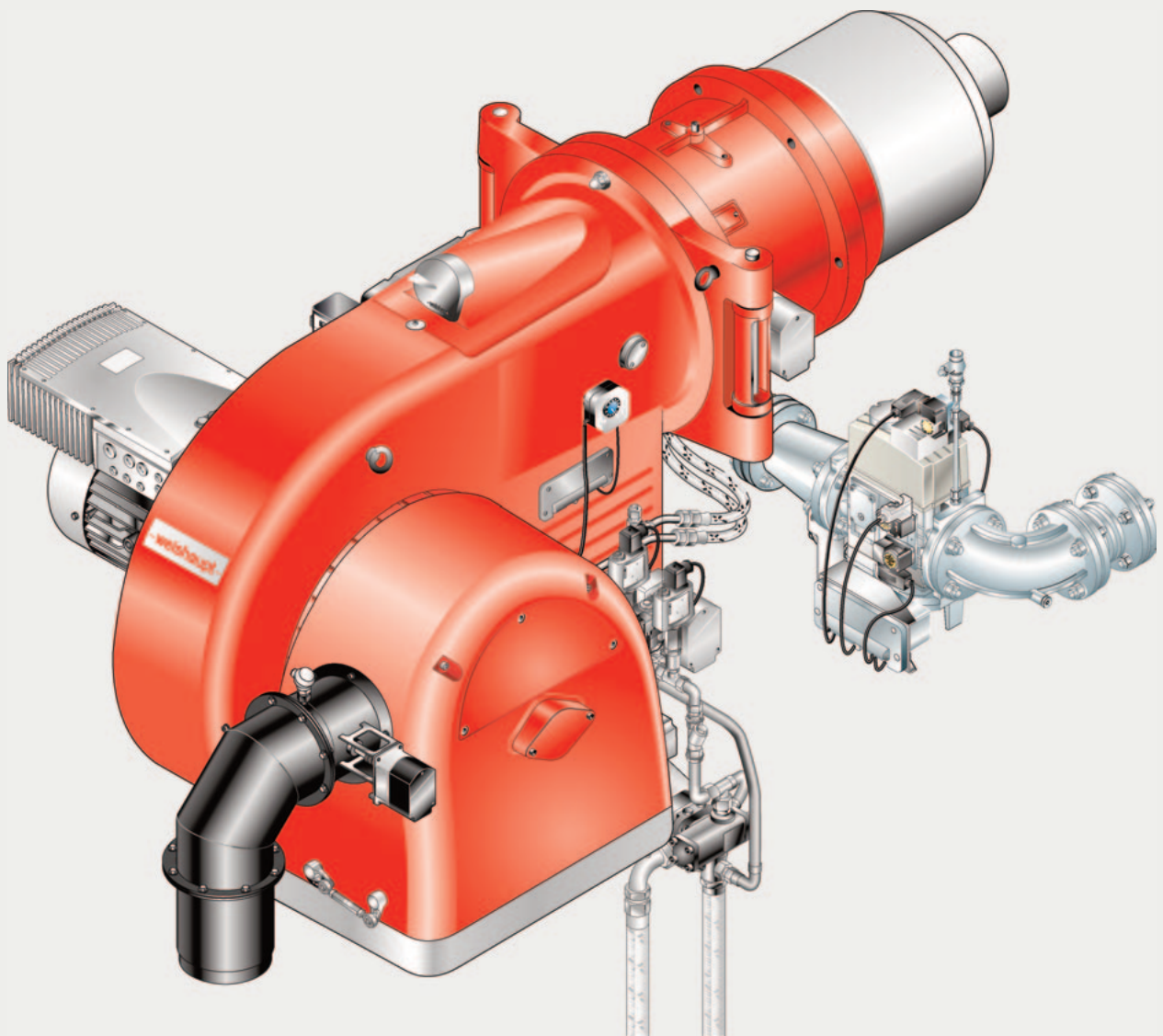
Flue gas recirculation affects the formation of thermal  $\text{NO}_x$  by reducing the concentration of oxygen in the combustion air. This results in increased air flow speed, which reduces the dwell time of the combustion gases in the hot reaction zone and thereby lowers the flame temperature.

## Note for oil firing

When a dual-fuel burner is firing on oil, the FGR system should normally be closed off by means of a separate shutoff assembly that is installed at the takeoff point and monitored by a limit switch.

Operating the FGR system while the burner is firing on oil is only possible if the fuel meets specific prerequisites and must be approved in advance by Weishaupt.





*WM-GL50 version ZM-R-4LN*

# Options for more flexibility.

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**The best products can be made even better if they are equipped with the right options.**

The **7-pin and 4-pin plugs** so familiar on the W-series burners can also be supplied on WM50 burners. Many boilers are equipped with the appropriate mating connectors for these. The optional plugs make connecting the burner to the electrical power supply straightforward, and also enable the burner to be electrically isolated with ease for servicing.

Sliding-two-stage burners can be equipped with a **load controller** in order to benefit from the advantages of modulating operation. It is integrated into the burner's combustion manager.

In addition to a star-delta combination, the burner motor's **large electrical junction box** can also be equipped, if required, with electronic over-current protection.

All industrial burners have options available to improve their efficiency, emissions, and safety. Equipping a burner with **VSD** (variable speed drive) will considerably reduce both its electrical consumption and noise emissions at partial load.

**O<sub>2</sub> trim and CO control** increase a system's safety and efficiency. A temperature sensor in the flue gas system will indicate that a limit value has been exceeded, which points to a fouling of the heat generator.

The **length of combustion head** required is determined by criteria such as the mounting depth of the burner, the boiler design, or the technical application. The burner's standard-length combustion head can be extended by 150 or 300 mm, covering the majority of requirements. Of course, longer extensions are possible upon request.

If high combustion chamber temperatures would otherwise radiate back through the burner while the plant is not operating, the burner fan will be set up to run continuously. During this time, an **electromagnetic clutch** is used to decouple the oil pump, which is driven by the fan axle. This has the advantage of keeping the pump cool and reducing wear. Additionally, the electrical power consumption of the burner motor is reduced during this continuously running fan phase.

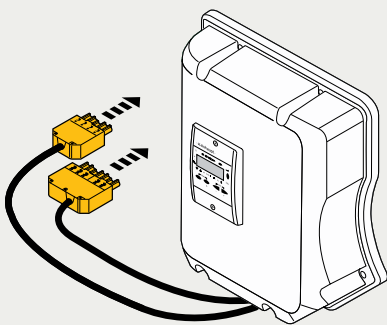
In many applications, it is not always possible to guarantee that the combustion air being supplied to the burner will be clean and free of pollutants. For situations such as these, Weishaupt can equip the WM50 burner with an **air inlet flange**. By connecting a ducted extraneous air supply to this inlet flange, it is possible to draw combustion air from a "clean" and temperature-controlled zone.

The air inlet flange comes as standard with an additional air pressure switch that protects against low inlet pressure and ensures the burner is supplied with a sufficient volume of air at all times.

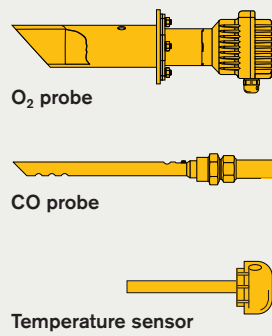
The W-FM 100 and W-FM200 combustion manager's **CAN bus system** enables them to be installed either onboard the burner or, optionally, inside a separate control panel. This allows for an optimal adaptation to the operating conditions of the plant.

Depending on execution, a Weishaupt **sound absorber** could reduce noise emissions by up to 25 dB(A). Consider, for example, the WM-G50/2-A ZM-NR with a sound pressure level of 85 dB(A). With a sound-absorbing shroud, this can be reduced to 60 dB(A).

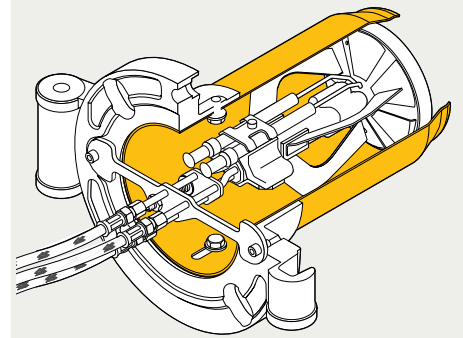
7-pin and 4-pin plug connections



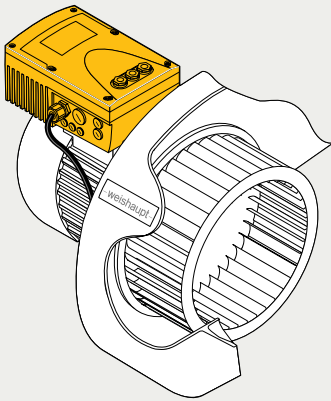
Monitoring and control of flue gases for O<sub>2</sub>, CO and temperature



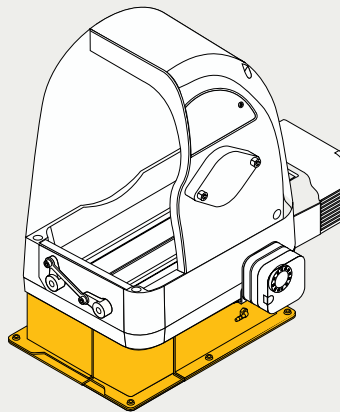
Combustion head extension for matching to the boiler door / insulation



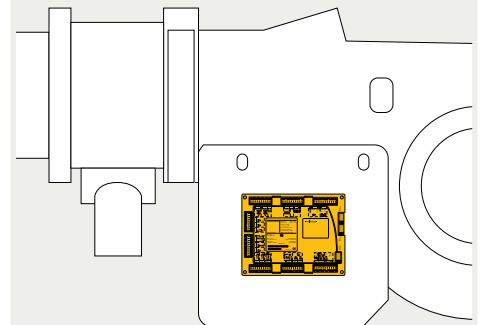
Motor-mounted frequency converter for VSD



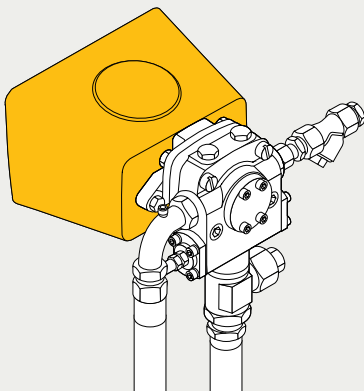
Combustion air ducted from clean areas



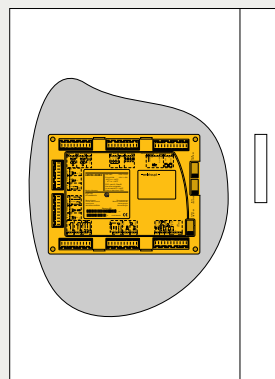
Burner-mounted W-FM 100 or W-FM 200 combustion manager



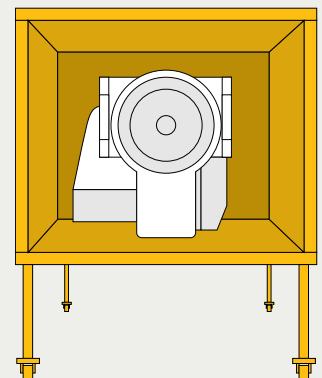
Electromagnetic clutch for oil-firing burners with continuously running fan



Panel-mounted W-FM 100 or W-FM 200 combustion manager



Sound-absorbing shroud



# Reliable and safe.

**Digital combustion management means optimal combustion figures, continuously reproducible setpoints, and ease of use.**

Weishaupt WM50-series gas, oil, and dual-fuel burners are equipped as standard with electronic compound regulation and digital combustion management. Today's modern combustion technologies demand a precise and continually reproducible dosing of fuel and combustion air. This is the only way to ensure optimal combustion figures over a long period of time.

## Simple operation

Setting and control of the burner is achieved using a control and display unit. This is linked to the combustion manager via a bus system, enabling the user-friendly setting of the burner. The control and display unit has a clear text display with a choice of languages.

An English/Chinese dual-screen version is available as an option if a Chinese-character display is desired.

## Features to save energy and increase safety and reliability

VSD provides several benefits. It facilitates a soft start of the burner fan, keeping the start current to a minimum, and matches the speed of the fan to combustion air volume during operation, which saves electrical energy and reduces noise emissions.

O<sub>2</sub> trim saves fuel by means of a continual and extremely efficient optimisation of the combustion air. The system is controlled by a Lambda probe, which continually measures the oxygen content of the flue gas.

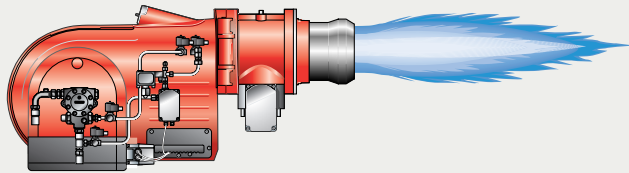
CO monitoring executes a safety shutdown of the burner should a predefined CO limit be exceeded, thereby ensuring the very highest degree of safety.

Combined CO control/O<sub>2</sub> trim ensures an ultimate degree of safety. CO emissions are continually monitored and, if the defined limit is exceeded, the burner is operated with an increased amount of excess air for a short period of time before the O<sub>2</sub> trim returns the burner to its preset O<sub>2</sub> setpoint. However, should external influences be preventing a non-critical condition from being reached, then the burner will undergo a controlled shutdown.

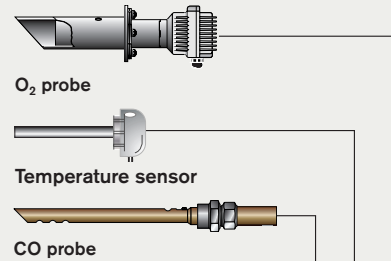
General system overview Digital combustion management	W-FM 100	W-FM 200	W-FM 1000 CMS
Single-fuel operation	●	●	●
Dual-fuel operation	●	●	●
Combustion manager for intermittent firing	●	●	●
Combustion manager for continuous firing > 24 h	●	●	●
Flame sensor for intermittent firing	ION/QRI/QRB/QRA	ION/QRI/QRB/QRA	ION/FFS08/FFS07
Flame sensor for continuous firing > 24 h	ION/QRI/QRA 73	ION/QRI/QRA 73	ION/FFS08/FFS07
Max. number of actuators in electronic compound	4	6	8
VSD available	–	●	●
O <sub>2</sub> trim available	–	●	●
Gas valve proving	●	●	●
4-20 mA input signal	○	●	●
Self-regulating PID controller for temperature or pressure	○	●	○
Language-neutral control and display unit	–	–	–
Clear text control and display unit	●	●	–
Control and display unit with colour graphical display	–	–	●
Removable control unit (max. distance)	100 m	100 m	100 m
Fuel consumption meter (switchable)	–	●	●
Combustion efficiency display	–	●	●
eBUS/Modbus interface	●	●	○/●
PC-supported commissioning	●	●	●

Please enquire regarding connections available for additional functions, e.g. flue gas dampers, oil shutoff assemblies, etc.

- Standard
- Optional



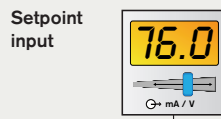
Burner with digital combustion management



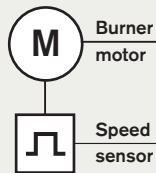
O<sub>2</sub> probe

Temperature sensor

CO probe



Setpoint input



Burner motor

Speed sensor

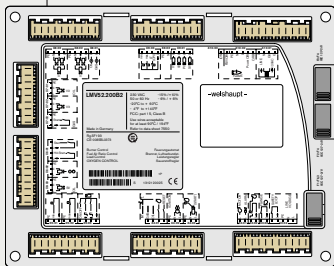


Frequency converter for VSD

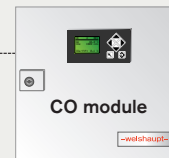
Integral load controller

Pulse input for fuel metering

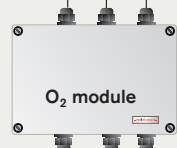
- Up to six actuators for
  - Gas feed
  - Air feed
  - Oil feed
  - Regulating sleeve (air)
  - FGR air damper
  - FGR butterfly valve



W-FM 200 combustion manager



CO module



O<sub>2</sub> module

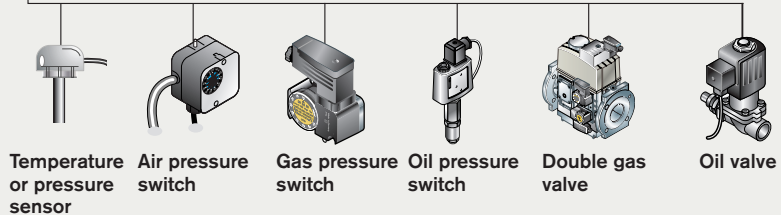
Autonomous CO monitoring (without O<sub>2</sub> module)

CAN bus

Control and display unit on burner or in control panel



ACS 450 servicing software



Temperature or pressure sensor

Air pressure switch

Gas pressure switch

Oil pressure switch

Double gas valve

Oil valve

# Integration with building management.

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*Remote monitoring made easy via tablet or laptop*

**Digital combustion managers provide the basis for burner communications with other, higher-level systems. The eBus and Modbus protocols are available through coupling components.**

All of the usual burner and, optionally, boiler functions can be monitored and controlled through a direct, digital connection to a building management system.

A graphical HMI is available to provide a user-friendly overview of the system with its setpoints and measured values. The touch-screen display allows specific functions to be adjusted and monitored, such as the system parameters and the setpoints of individual and multi-boiler plant and other ancillary equipment.

Controls specialists, Neuberger, are a part of the Weishaupt Group and they are able to design and implement complex control solutions.

Additional optional components enable connections to be made to systems using commonplace industrial standards, such as:

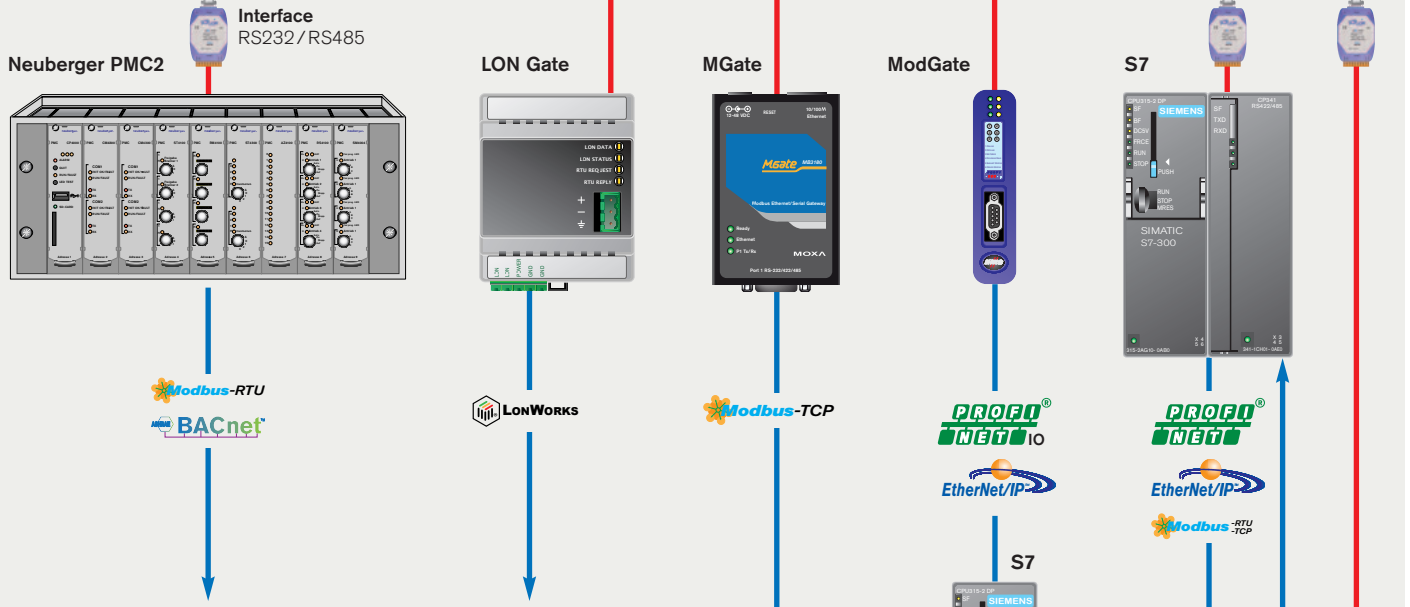
- Modbus TCP/IP
- Profinet I/O
- Modbus RTU
- BacNet
- etc.

Also available in Weishaupt's product range is the W-FM COM communications module. This transmits data securely over the internet so that it can be called up and displayed in a browser window on a PC, tablet, or smartphone, which facilitates accurate service planning for example. Even away from the internet you can be kept up to date with the operation of the burner: In the event of a safety shutdown or some other predefined trigger, an SMS text message will be sent automatically.

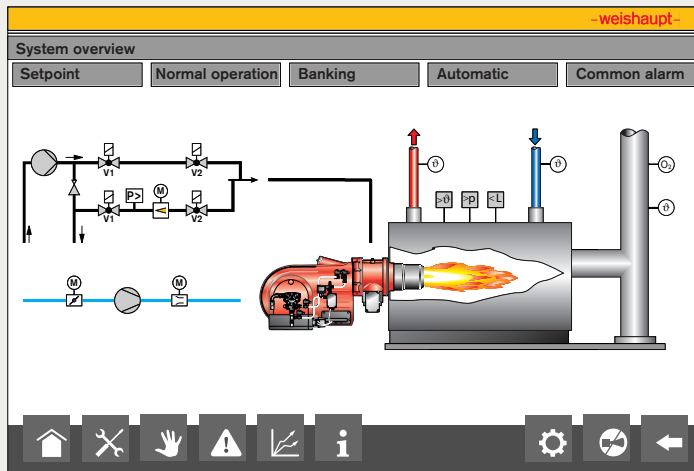


W-FM 100 / W-FM 200  
control and display unit  
with integrated interface

**Modbus-RTU**



Visualisation and BMS connection options



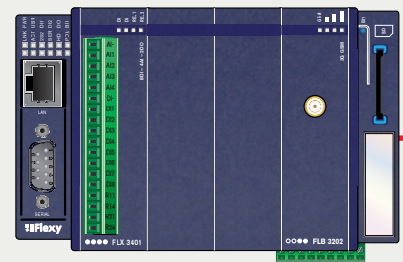
PC, smartphone, tablet



Communication  
via the internet



W-FM COM



# Load control

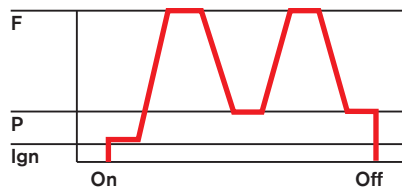
## Model designation

### WM 50

#### Sliding-two-stage (ZM)

- The burner is driven, via a two-point signal (e.g. thermostat or pressure control) to full or partial load in response to heat demand. Combustion remains CO and soot-free between load points.

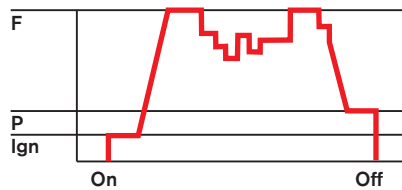
Sliding-two-stage



#### Modulating (ZM)

- An electronic controller makes infinitely variable load adjustments in response to heat demand.
- Available modulating executions:
  - W-FM 100 with optional load controller
  - W-FM 200 with standard load controller
- Alternatively, a controller can be mounted in the cover over the burner's integral electronic controls or in a separate control panel.

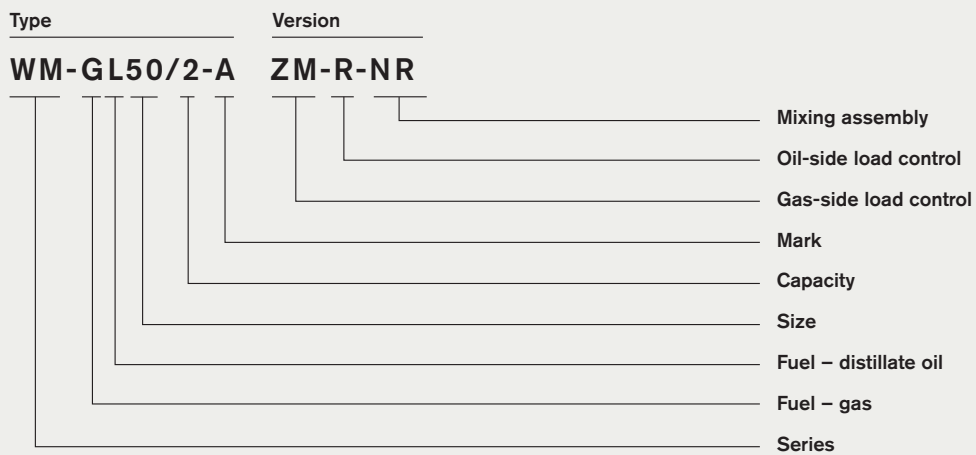
Modulating



*F* = Full load (nominal load)  
*P* = Partial load (min. load)  
*Ign* = Ignition load



## Model designation

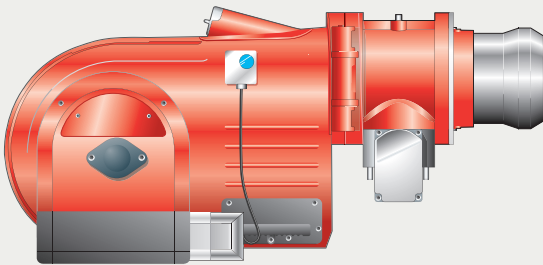


Details	Code	Meaning	Associated fuel
Series	<b>WM</b>	<b>Weishaupt monarch® burner</b>	
Fuel *	<b>G</b> <b>L</b>	<b>Gas</b> <b>Class D / Class A2 oil</b>	
Load control *	<b>ZM</b> <b>R</b>	<b>Sliding-two-stage / modulating</b> <b>Sliding-two-stage / modulating</b>	<b>Gas</b> <b>Oil</b>
Mixing assembly	<b>-</b> <b>NR</b> <b>3LN</b> <b>4LN</b>	<b>Standard</b> <b>NO<sub>x</sub> reduced</b> <b>multiflam®</b> <b>multiflam® for FGR</b>	<b>Oil</b> <b>Gas</b> <b>Gas / oil</b> <b>Gas / oil</b>

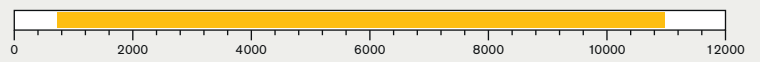
\*) Dual-fuel burners use a combination of codes (GL, ZM-R-NR).

# Operating ranges

## WM 50



Model	Rating (kW)	
<b>Standard and NR versions</b>	<b>800 - 12000</b>	
<b>Oil burners, version R</b>		
WM-L50/1-A R	1200 - 8000	
WM-L50/2-A R	1750 - 11000	
WM-L50/3-A R	1750 - 12000	
<b>Gas burners, version ZM-NR</b>		
WM-G50/1-A ZM-NR	800 - 8000	
WM-G50/2-A ZM-NR	1000 - 11000	
WM-G50/3-A ZM-NR	1000 - 12000	
<b>Dual-fuel burners, version ZM-R-NR</b>		
WM-GL50/1-A ZM-R-NR	800 - 8000	
WM-GL50/2-A ZM-R-NR	1000 - 11000	
WM-GL50/3-A ZM-R-NR	1000 - 12000	

**Model****Rating (kW)****3LN version****750 - 11000****Oil burners, version R-3LN**

WM-L50/0-A R-3LN

1200 - 7000



WM-L50/1-A R-3LN

1200 - 7700



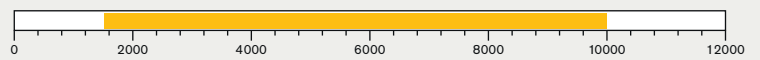
WM-L50/2-A R-3LN

1500 - 9100



WM-L50/3-A R-3LN

1500 - 10000

**Gas burners, version ZM-3LN**

WM-G50/0-A ZM-3LN

750 - 7000



WM-G50/1-A ZM-3LN

750 - 7700



WM-G50/2-A ZM-3LN

900 - 9100



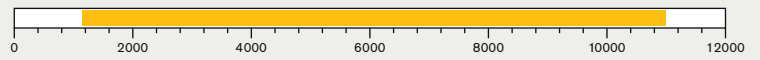
WM-G50/3-A ZM-3LN

900 - 10000



WM-G50/4-A ZM-3LN

1100 - 11000

**Dual-fuel burners, version ZM-R-3LN**

WM-GL50/0-A ZM-R-3LN

750 - 7000



WM-GL50/1-A ZM-R-3LN

750 - 7700



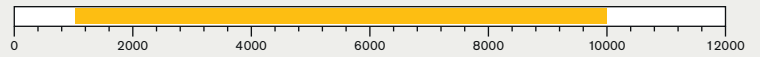
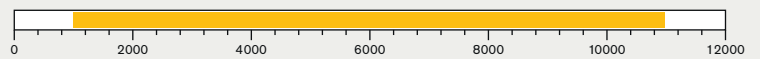
WM-GL50/2-A ZM-R-3LN

900 - 9100



WM-GL50/3-A ZM-R-3LN

900 - 10000

**Model****Rating (kW)****4LN version****1000 - 11000****Gas burners, version ZM-4LN**

WM-G50/0-A ZM-4LN

1000 - 7500



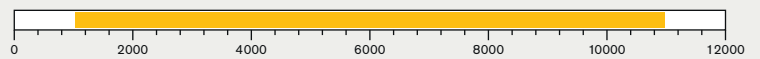
WM-G50/1-A ZM-4LN

1000 - 8300



WM-G50/2-A ZM-4LN

1000 - 11000

**Dual-fuel burners, version ZM-R-4LN**

WM-GL50/0-A ZM-R-4LN

1000 - 7500



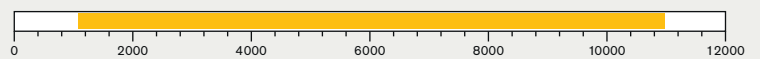
WM-GL50/1-A ZM-R-4LN

1000 - 8300



WM-GL50/2-A ZM-R-4LN

1100 - 11000



# Scope of delivery

## WM 50

### Standard and NR versions

Fuel	Oil	Gas	Dual-fuel
Burner housing, hinged flange, housing cover, Weishaupt burner motor, air inlet housing, fan wheel, combustion head, ignition unit, ignition cable, ignition electrodes, combustion manager with control unit, flame sensor, actuators, flange gasket, limit switch on hinged flange, fixing screws	●	●	●
Digital combustion management W-FM 100	●	●	●
Class-A double gas valve assembly with valve proving effected via W-FM and pressure switch	–	●	●
Gas butterfly valve	–	●	●
Air pressure switch (required for PED compliance)	○	●	●
Low gas pressure switch	–	●	●
Moveable mixing assembly	●	●	●
Actuators for compound regulation of fuel and air via W-FM:			
Air damper actuator	●	●	●
Gas butterfly valve actuator	–	●	●
Oil regulator actuator	●	–	●
Mixing assembly actuator	●	●	●
DSB158 low oil pressure switch in supply	● <sup>1)</sup>	–	● <sup>1)</sup>
Oil pressure switch in return	●	–	●
Burner-mounted oil pump	●	–	●
Oil hoses (1 000 mm)	●	–	●
2 oil solenoid valves, oil regulator, nozzle head with solenoid valve, pre-installed regulating nozzle, and safety shutoff	●	–	●
Electromagnetic clutch	○	–	●
Motor-mounted star-delta combination	●	●	●
IP 54 protection	●	●	●

**EN 676 stipulates that ball valves, gas filters, and gas pressure regulators form part of the burner supply (see Weishaupt accessories list). Please enquire or see the extra-equipment section of this brochure for further burner executions.**

- Standard
- Optional
- Not available

<sup>1)</sup> 50/3 only

### 3LN version

Fuel Version	Oil R-3LN	Gas ZM-3LN	Dual-fuel ZM-R-3LN
Digital combustion management W-FM 100 W-FM 200	● ● <sup>2)</sup>	● ● <sup>2)</sup>	● ● <sup>2)</sup>
VSD with motor-mounted frequency convertor	● <sup>2)</sup>	● <sup>2)</sup>	● <sup>2)</sup>

### 4LN version

Fuel Version	Gas ZM-4LN	Dual-fuel ZM-R-4LN
Digital combustion management W-FM 100 W-FM 200	● ● <sup>3)</sup>	● ● <sup>3)</sup>
VSD with motor-mounted frequency convertor	● <sup>3)</sup>	● <sup>3)</sup>

### Green Fuels (GF)

Fuel Version	Oil Std./ 3LN	Dual-fuel Std./ 3LN / 4LN
<b>GF-M Blended bio-oil (3.0–20.9%)</b> Blend of mineral and esterified oils in accordance with fuel standard DIN SPEC 51603-6	●	●
<b>GF-P Paraffinic oil</b> in accordance with fuel standard DIN/TS 51603-8	●	●
<b>GF-B30 Blended bio-oil (21.0–30.9%)</b> Blend of mineral and esterified oils in accordance with fuel standard DIN SPEC 51603-6	○	○
<b>GF-B100 Blended bio-oil (31.0–99.9%)</b> Blend of mineral and esterified oils in accordance with fuel standard DIN SPEC 51603-6	○ / -	○ / - / -
<b>GF-B100 Bio-oil (FAME)</b> Fatty Acid Methyl Ester in accordance with fuel standard EN 14214	○ / -	○ / - / -

- Standard
- Optional
- Not available

<sup>2)</sup> 50/1, 50/3, and 50/4 only

<sup>3)</sup> 50/1 and 50/2 only

# Extra equipment

## WM 50

Fuel		Oil	Gas	Dual-fuel
<b>Combustion head extension</b>	by 150 mm	○	○	○
	by 300 mm	○	○	○
<b>W-FM 100</b> loose in lieu of inbuilt		○	○	○
<b>Analogue signal convertor</b> with load controller for W-FM 100		○	○	○
<b>W-FM 200 in lieu of W-FM 100</b> with load controller, analogue signal convertor, VSD module, and optional connection of fuel meter	inbuilt	○	○	○
	loose	○	○	○
<b>Extended functionality</b> W-FM200 for CO control / FGR		○	○	○
<b>W-FM 1000 CMS in lieu of W-FM 100</b> with colour graphical display (multi-lingual), and optional integration of customer-specific open and closed-loop control processes		○	○	○
<b>ABE</b> with Chinese and English-language display, supplied loose W-FM 100 / W-FM 200		○	○	○
<b>Plug connection</b> ST18/7 - W-FM100 / 200		○	○	○
<b>VSD</b> with motor-mounted frequency convertor with separate frequency convertor, FC as accessory equipment	W-FM.200 / 1000 CMS	○	○	○
	W-FM.200 / 1000 CMS	○	○	○
<b>Oil pressure gauge</b> with ball valve, pump-mounted with ball valve, in return		○	-	○
		○	-	○
<b>Vacuum pressure gauge</b> -1 to+9 bar with ball valve, in supply		○	-	○
<b>SMG pump assembly</b> (hardened version)		○	-	○

○ Optional  
- Not available

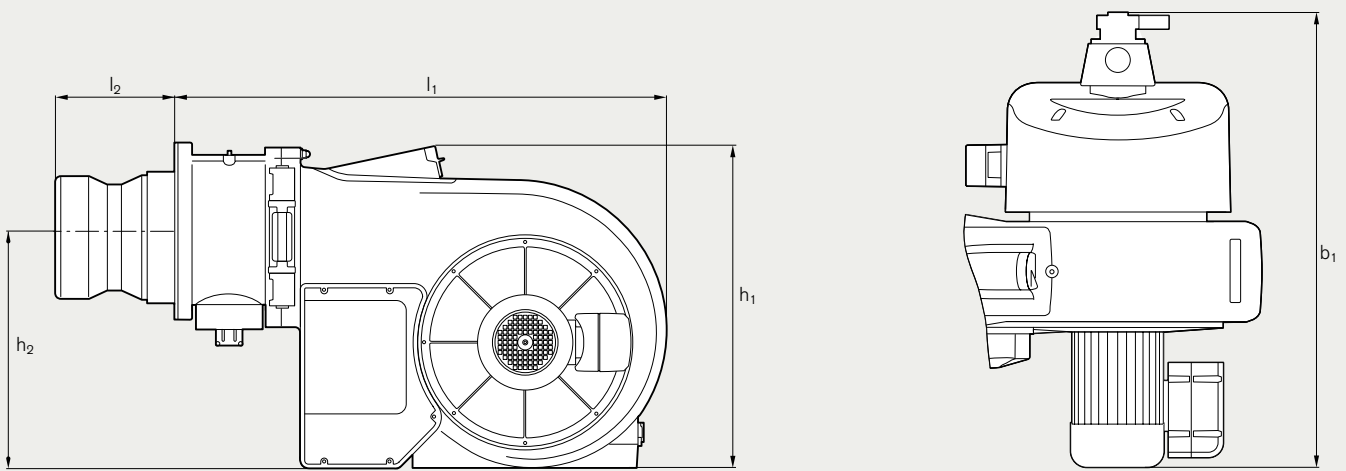
Fuel	Oil	Gas	Dual-fuel
<b>Air inlet flange</b> for ducted-air connection with LGW air pressure switch (additional LGW50 required)	○	○	○
<b>Special voltages</b> (please enquire)	○	○	○
<b>Control voltage</b> 110 V	○	○	○
<b>Control voltage</b> 24 V with W-FM 1000 CMS	○	○	○
<b>Solenoid valve</b> for air pressure switch test with continuously running fan or post-purge	○	○	○
<b>High gas pressure switch</b> for screwed W-MF / DMV with low-pressure supplies	-	○	○
for flanged DMV / VGD with low-pressure supplies	-	○	○
for fitting to regulator with high-pressure supplies	-	○	○
<b>Offset gas butterfly valve and DMV</b> for vertical-firing execution	-	○	○
<b>External temperature-compensated flue gas recirculation</b> with FGR butterfly valve (4LN)	-	○	○

○ Optional  
- Not available

# Dimensions

## WM 50

### Standard, NR, 3LN, and 4LN versions

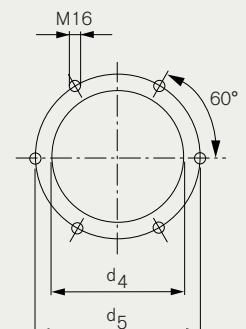


#### Dimensions – Standard and NR versions

Dimension	Oil R	Gas ZM-NR	Dual-fuel ZM-R-NR
<b>l1</b> - Burner length excluding combustion head	1616–1636	1616–1635	1616–1636
<b>l2</b> - Combustion head length	442–457	442–457	442–457
<b>h1</b> - Overall burner height (excluding optional air inlet flange, excluding underslung oil pump)	1058–1071	1058–1071	1058–1071
<b>h2</b> - Height to centreline of combustion head	758–1050	758	758–1050
<b>b1</b> - Overall burner width	1335–1385	1283–1335	1335–1516

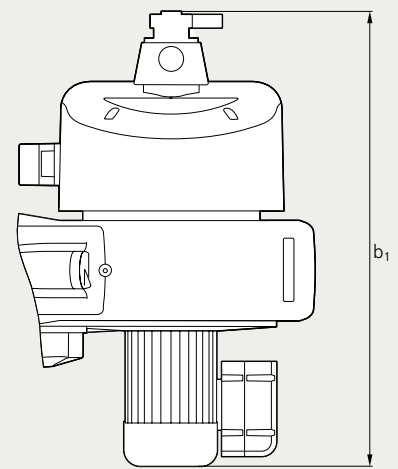
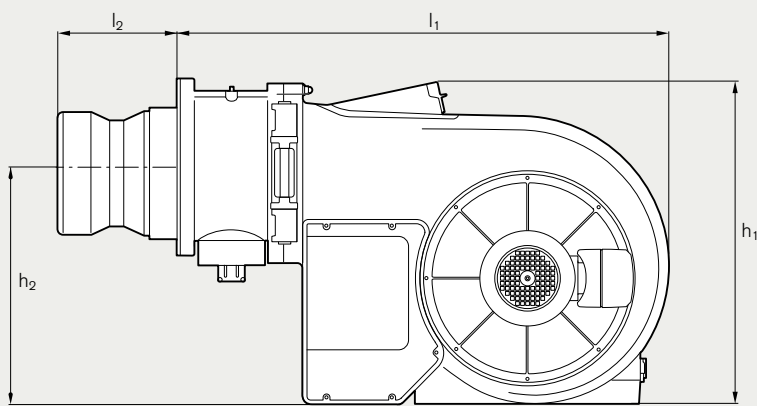
#### Mounting plate drilling dimensions

Dimension	Version Standard / NR
<b>d4</b> - Inner diameter	430–530
<b>d5</b> - Outer diameter	470–580



Dimensions in mm



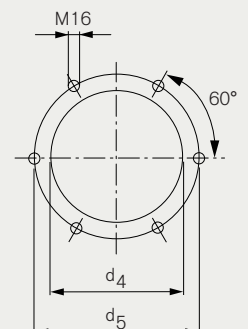


### Dimensions – 3LN and 4LN versions

Dimension	Oil 3LN	Gas 3LN / 4LN	Dual-fuel 3LN / 4LN
<b>l1</b> - Burner length excluding combustion head	1616–1636	1616–1636	1616–1636
<b>l2</b> - Combustion head length	484–512	477–496	477–496
<b>h1</b> - Overall burner height (excluding optional air inlet flange, excluding underslung oil pump)	1058–1078	1058–1078	1058–1078
<b>h2</b> - Height to centreline of combustion head	758–1050	758	758–1050
<b>b1</b> - Overall burner width	1335–1385	1283–1335	1335–1516

### Mounting plate drilling dimensions

Dimension	Version 3LN / 4LN
<b>d4</b> - Inner diameter	435–530
<b>d5</b> - Outer diameter	470–580

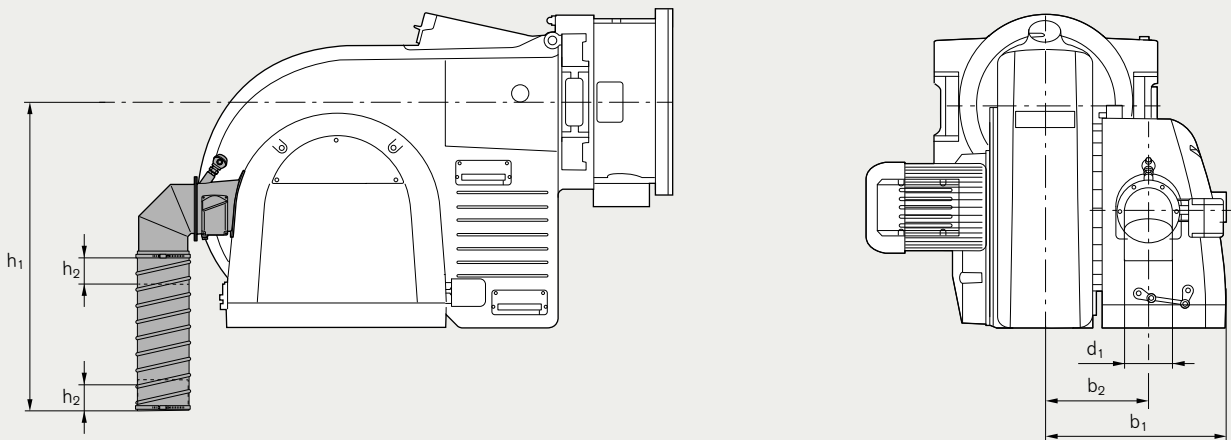


Dimensions in mm

# Dimensions

## WM 50

### FGR



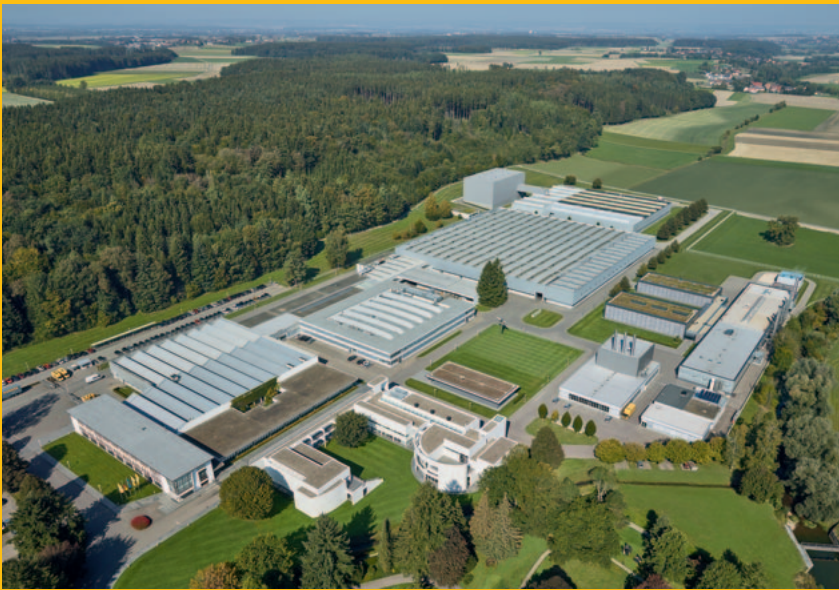
Dimensions – FGR (flue gas recirculation)

Dimension	Version 4LN
<b>h1</b> - Centreline of burner mounting flange to bottom edge of hose	1050 ± 10
<b>h2</b> - Flanged elbow insertion depth	60 ± 10
<b>b2</b> - Centreline of burner mounting flange to centreline of flanged elbow	349
<b>d1</b> - Flanged elbow diameter	216

Dimensions in mm

# That's reliability.

---



*The company's headquarters and main plant in Schwendi*



*Weishaupt has manufacturing facilities  
in Germany and Switzerland*

Reliability is the future. It is what the Weishaupt name stands for. Committed to the best quality, precision made in Germany and Switzerland, to innovation and technology, developed to meet people's needs, and to partnership and service, globally accessible and always there for you. That is what we work for every day, because we understand that reliability has never been more important than it is today.

In times when everything is becoming more complicated, we are making things simpler, be that with the intuitive usability of our devices, our highly efficient energy technology, or our dense, customer-focused service network. Weishaupt is a promise. Both today and in the future, heat, hot water, and reliability make people feel comfortable and secure.

Since the company was founded by Max Weishaupt in 1932, and thanks also to the strong traditions of a family-run business, there has only been one direction: forwards. Today, with the highest of standards, extensive know-how, and absolute reliability, father and son, Siegfried and Thomas Weishaupt, lead the long-established company on into the future.

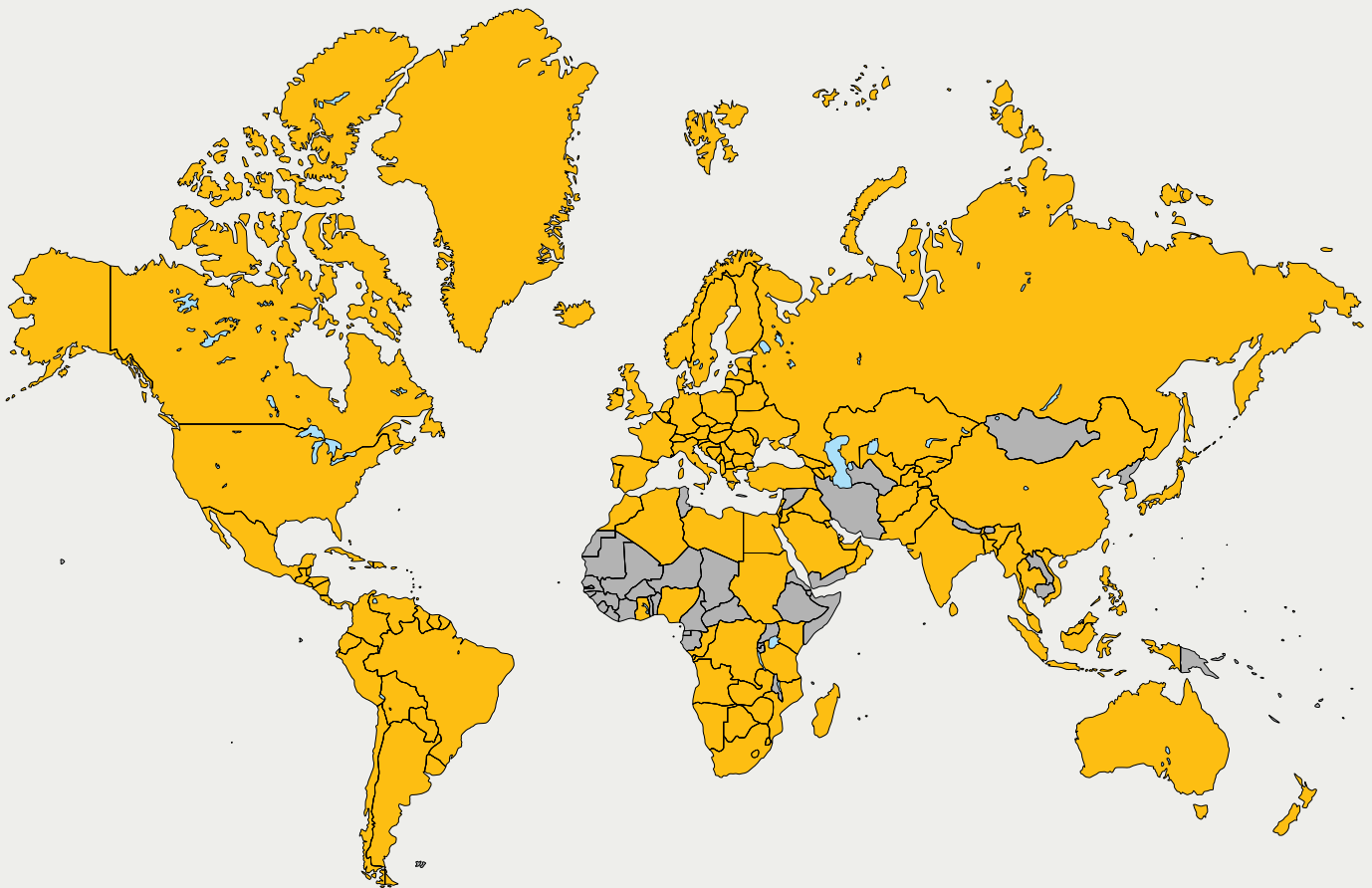
If you  
need  
us,  
we're  
there.

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