Vertically firing burners

For steam, thermal-fluid and process plant (55–10 700 kW)
An additional solenoid valve enables the W-FM to also test the air pressure switch on burners with a continuous-run fan or post-purge facility, ensuring maximal safety.

The gas valve assembly is ideally positioned and benefits from additional cooling, thanks to its proximity to the air inlet.

The ABE control and display unit should ideally be located in a control station close to the burner.

Vertically firing burners for any application

Vertical heat generators can often place additional demands on burner equipment. Weishaupt offers a special vertical-firing execution for these applications.

**Reliable operation**
Safety-critical components, such as the gas butterfly valve, actuator, gas valve assembly, and gas pressure switches, are securely located away from high-temperature zones to ensure their reliable operation.

This single measure alone results in an considerable increase in operational readiness.

**Simple installation**
The burner's gas valve train is supplied pre-assembled from the gas butterfly valve to the double gas valve assembly, ensuring the various components will be correctly located at the burner’s air inlet. The ready-to-connect cables will likewise be precisely the right length.

A further benefit of the vertical execution is that the burner can be rotated about the heat generator’s vertical axis to any desired angle. Consequently, the burner can be easily aligned to any gas supply handing.

**Burner cooling with post-purge or continuous-run fan**
The vertical arrangement of the heat generator, and the associated backflow of heat, mean that improved cooling is necessary to protect the burner when it is idle. A longer post-purge time, or continuous-run fan, can effectively prevent the mixing assembly from overheating. The required run-on times and air-damper position can be set via the combustion manager.
The control and display unit can be located on the burner or, ideally, in a control station close to the burner. The burners can be equipped with a mains contactor or an integrated star-delta combination.

The combustion manager can be mounted on the burner or in a control panel as required. Gas supply handling is determined by the orientation of the burner.

Optimal placement of the actuators ensures their precise and reliable operation. The assembly is designed to be suitable for both left and right-handed gas connections.

Optimal positioning of the gas valve assembly ensures safe and reliable operation.

The side-mounted air inlet provides ambient air circulation and component cooling. All electrical components and cables are sited in secure, servicing-friendly positions.
Vertically firing WM-series burners: Gas and dual-gas valve train arrangements
Vertically firing Weishaupt burners

Additional equipment to standard burner

<table>
<thead>
<tr>
<th>Burner series</th>
<th>Offset gas butterfly valve and double gas valve assembly</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>monarch® WM-G(L) 10</td>
<td>250 032 96</td>
<td></td>
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<tr>
<td>monarch® WM-G(L) 20</td>
<td>250 032 95</td>
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<td>monarch® WM-G(L) 30</td>
<td>250 032 93</td>
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<tr>
<td>monarch® WM-G(L) 50</td>
<td>250 034 32</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Burner series</th>
<th>Solenoid valve for air pressure switch test with post-purge or continuous-run fan</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>monarch® WM-G(L) 10</td>
<td>250 030 21</td>
<td></td>
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<tr>
<td>monarch® WM-G(L) 20</td>
<td>250 030 21</td>
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<tr>
<td>monarch® WM-G(L) 30</td>
<td>250 030 21</td>
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<tr>
<td>monarch® WM-G(L) 50</td>
<td>250 030 21</td>
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</tbody>
</table>

1) The burners are labelled with a CE Mark, the relevant CE-PIN per 2009/142/EC, DIN-CERTCO, and the identification number of the notified body.

This brochure on vertically firing WM-series burners is a supplement to the product brochures for the WM 10 to WM 50 monarch® burners.

The burner and valve train selection charts and special equipment lists in those brochures apply equally to vertically firing burners.
Flexible communications: Compatible with building management systems
The digital combustion manager is the basis of communications with other superordinate systems. This is generally achieved using the eBus or Modbus protocols.

All the usual burner and boiler functions can be monitored and controlled through a direct connection with a building management system.

A graphical HMI is available as an option to provide a user-friendly overview of the boiler. The touchscreen display allows numerous functions to be adjusted and monitored, such as system parameters and setpoints of individual and multi-boiler plant and ancillary equipment.

The controls specialists, Neuberger, who are a part of the Weishaupt Group, are able to design and implement complex control solutions.

Further optional components enable connections to be made to systems using commonplace industrial standards, such as Profinet-I/O, Modbus TCP, BacNet, etc.

A recent addition to Weishaupt’s portfolio is the W-FM COM communications module. It transmits data securely over the internet so that it can be called up and displayed in a browser window on a computer, tablet, or smartphone, facilitating 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 other predefined trigger, an SMS text message is sent automatically.

### Overview of digital control variants
(Equipment must comply with local regulations)

<table>
<thead>
<tr>
<th>Burner types</th>
<th>Combustion manager</th>
<th>ABE</th>
<th>Features</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Burner-mounted</td>
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<td></td>
<td>In an external control panel</td>
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<td>In an external control station</td>
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<tr>
<td></td>
<td>In an external control station / panel</td>
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<td></td>
<td>Post-purge time adjustable via W-FM</td>
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<td></td>
<td>Direct start set via the W-FM (Factory preset: normal start)</td>
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<tr>
<td></td>
<td>Suitable for intermittent firing</td>
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<td>Suitable for continuous firing</td>
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<td>4-20 mA input signal for load control</td>
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<tr>
<td></td>
<td>Data transfer via Modbus interface</td>
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<td>Gas valve proving</td>
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<td></td>
<td>Variable speed drive with externally located frequency converter</td>
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<td></td>
<td>O₂ trim</td>
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</tbody>
</table>

| WM-G 10–50 | W-FM50 | ● | ● | ● | 0.2 s–108 min | (0.2 s) |
|            | W-FM100 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |
|            | W-FM200 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |
| WM-L 10–50 | W-FM50 | ● | ● | ● | 0.2 s–108 min | (0.2 s) |
|            | W-FM100 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |
|            | W-FM200 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |
| WM-GL 10–50 | W-FM54 | ● | ● | ● | 0.2 s–108 min | (0.2 s) |
|            | W-FM100 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |
|            | W-FM200 | ● | ● | ● | 0.2 s–1092 h | (5.0 s) |

ABE = Control and display unit  ● Standard  ○ Recommended  ○ Optional

In the event of a call for heat during the post-purge time, the burner restarts without a motor shutdown.
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