Digital oil burners

Weishaupt oil burners, WL10 to WL40 (30–570 kW)
A burning passion for quality

Technological progress is our motivation. It has been driving us for more than 60 years to keep setting new standards for the combustion equipment industry.

Our own Research and Development Centre is constantly working both on the development of new products and on the optimisation of existing ones.

We consider it not only our goal but our responsibility to go above and beyond current legislative requirements to develop combustion systems which emit ever fewer pollutants, save ever more energy, and combine ecology and economy in a practical manner.

Therefore, not only do we invest in research and technology, but we also only ever work with the best materials, using the latest tools, and we carry out meticulous quality control checks.

Millions of times over, heating specialists and customers have proven Weishaupt burners to be reliable, durable, environmentally friendly, and technologically advanced; a fact also borne out by our numerous prizes for design and innovation.

Every day, more than 600 burners are manufactured at our ultra-modern facilities in Schwendi, Germany. Each and every single burner undergoes a mechanical and electrical function test. It is this combination of technology and effective quality control that helps to safeguard Weishaupt’s renowned reputation for quality.

A new burner is always an investment in the future. Costs always need to be well-balanced against use but, ultimately, long-term overall success depends on quality, technology and safety. Deciding on a Weishaupt burner is always a safe investment in the future.

The very latest research and production methods and rigorous quality control ensure the quality for which Weishaupt is renowned
A hallmark of practical combustion technology

A safe investment in the future
Reliable and economical: The million-fold success of Weishaupt’s compact burners is the result of an unrelenting orientation towards quality and customer satisfaction. The equipment has been continually developed and improved over decades.

The latest production methods and very stringent quality checks of all products ensure Weishaupt’s reputation for quality. In choosing Weishaupt you are making a safe investment in the future.

Large capacity range
The large capacity range of 30 to 550 kW makes the burners suitable for a wide range of heat generators.

Electronic ignition
The W-ZG 01 ignition unit used on all Weishaupt W-series burners is very energy efficient and extremely reliable.

Digital combustion management for reliability and ease of use
Weishaupt is a pioneer in this field. Digital combustion management offers greater ease of use, simple servicing, even greater reliability in operation, and, last but not least, an extremely attractive price to capacity ratio. Furthermore, this intelligent technology enables the burner to be integrated with complex building management systems.

Outstanding service
Weishaupt has an extensive worldwide sales and service network. Customer service is available around the clock. Weishaupt’s optimal in-house training ensures service technicians are of the highest calibre.

Service case
The Weishaupt service case for burner sizes up to WL20 facilitates the sensible storage of spare parts and optimal service readiness. All the parts needed for repairs and service work are clearly arranged in this handy and robust plastic case.

Proven quality
The burners are tested by an independent body and fulfil the applicable requirements of the following European Union directives and applied standards:

EMC
EMC Directive 2014/30/EU
- EN 61000-6-1 : 2007
- EN 61000-6-3 : 2007

LVD
Low Voltage Directive 2014/35/EU
- EN 60335-1 : 2010
- EN 60335-2-102 : 2010

MD
Machinery Directive 2006/42/EC
- EN 267 Annex J,
- PED 1) Pressure Equipment Directive 2014/68/EU
- EN 267 Annex K,
- Conformity assessment procedure: Module B

The burners are labelled with
- CE Mark
- DIN CERTCO

1) WL30 and WL40 with the appropriate choice of equipment.
Digital combustion management: reliable and easy to use

All Weishaupt W-series burners are fitted as standard with digital combustion managers, whose microprocessors control and monitor all burner functions. As a result, Weishaupt burners are easy to use, precise, and reliable.

The digital combustion managers also offer the possibility of communicating with other systems via an integrated bus connection. This allows a technician to monitor the operation of the burner and remotely diagnose any errors.

The key points:

- The utilisation of identical units for gas and oil-fired burners helps simplify commissioning and reduces the number of spares required.
- Non-interchangeable plugs ensure the correct electrical connection of all components
- Electrical remote reset is possible
- Safety is ensured by the reciprocal monitoring of two microprocessors
- Vari-Coloured LED lamp to indicate burner operational stage and fault conditions (WL10 and WL20)
- LCD screen with interrogation, service, and parameterisation functions. The burner can be set directly via the operating keys (WL30 and WL40)
- Suitable for the continuous operation of LTHW plant – no controlled restart every 24 hours
- Suitable for air heaters and Group II and III steam boilers, as well as for Group IV steam boilers (with optional W-FM 25 PO)
- The integrated bus interface offers the following functions:
  - Connection to a PC for display of the operational sequence and the setting of functional parameters
  - Remote monitoring and diagnosis via a self-dialling modem
  - Connection to the latest building management systems
  - Prepurge time can be set via a PC

<table>
<thead>
<tr>
<th>Digital combustion management Features</th>
<th>W-FM 05</th>
<th>W-FM 10</th>
<th>W-FM 25</th>
<th>W-FM 25 PO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermittent firing</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Continuous firing &gt;24 h</td>
<td></td>
<td></td>
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<tr>
<td>Flame sensor for intermittent firing</td>
<td>ORB</td>
<td>ORB</td>
<td>ORB</td>
<td>ORB</td>
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<tr>
<td>Flame sensor for continuous firing</td>
<td></td>
<td></td>
<td></td>
<td>ORB</td>
</tr>
<tr>
<td>Actuators with stepping motors</td>
<td></td>
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<tr>
<td>Single-fuel operation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Removable control unit (max. length of connecting line)</td>
<td>3 m</td>
<td>3 m</td>
<td></td>
<td></td>
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<tr>
<td>Fuel consumption meter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus interface</td>
<td>eBUS</td>
<td>eBUS</td>
<td>Modbus/Probus</td>
<td>Modbus/Probus</td>
</tr>
<tr>
<td>Available on burner models</td>
<td>WL10</td>
<td>WL10</td>
<td>WL30</td>
<td>WL30</td>
</tr>
<tr>
<td></td>
<td>WL20</td>
<td>WL20</td>
<td>WL40</td>
<td>WL40</td>
</tr>
<tr>
<td></td>
<td>single-stage</td>
<td>two-stage</td>
<td>two-stage</td>
<td>two-stage</td>
</tr>
</tbody>
</table>

1) In conjunction with a VZ04 oil meter with pulsed output
Trustworthy technology

Remove the burner’s cover and you are immediately struck by how clearly its components are arranged, and how the electrical connections are obvious and non-interchangeable. The equipment makes a very good impression, just as Weishaupt always does.

Compact construction
The WL burners’ compact construction means they can be easily installed by one person, reducing installation costs to a minimum.

Weishaupt nozzle shutoff system
All Low-NOx burners are equipped with Weishaupt’s nozzle shutoff system. This ensures a tight oil shutoff at the nozzle assembly, preventing any drips after the burner has been switched off.

Low-NOx version
There are Low-NOx versions available for all WL burner sizes. A specially designed mixing head generates an intensive internal flue gas recirculation that results in exemplary emission levels.

Sound-attenuated air inlet
The burners have a transverse fan with a sound-attenuated air inlet and, as a consequence, are particularly quiet in operation.

Electronically controlled air damper
The electronically controlled air damper fully closes at burner shutdown to hinder the cooling down of the combustion chamber.

Servicing position
A special bracket allows the burner to be put into a servicing position, providing easy access to the burner and its mixing assembly.

Common platform
The common platform principle used with W-series burners greatly simplifies the provision and storage of spare parts.

Diagnosis via laptop
A laptop computer can be connected to the combustion manager, offering easy combustion optimisation and fault analysis. A package comprising interrogation software and connection cables is available for this.
Oil line
Valve piston
Filter
Nozzle

Spill oil line
Fast-closing valve

Weishaupt nozzle shutoff system

Sound-absorbing air inlet housing

Electronically controlled air damper

Housing with components in the servicing position: easy access to the fan wheel
Example: WL30/WL40

Combustion manager with connection plugs
Diffuser display bolt
Display bolt and diffuser setting screw

Hinged flange (WL30 and WL40)
Ignition electrodes
Diffuser
Flame tube

Air inlet housing
Oil hoses
Air damper actuator
Control and display unit (WL30 and WL40)
Light sensor for flame monitoring

Oil pump with solenoid valve
## Model overview

<table>
<thead>
<tr>
<th>Burner type</th>
<th>Version</th>
<th>Mode of operation</th>
<th>Rating</th>
<th>Power input</th>
<th>Mass</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>WL10/2-D</td>
<td></td>
<td>Single-stage</td>
<td>35–70 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 111 22</td>
</tr>
<tr>
<td>WL10/2-D</td>
<td></td>
<td>Single-stage with actuator</td>
<td>35–70 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 111 20</td>
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<tr>
<td>WL10/2-Z</td>
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<td>Two-stage with actuator</td>
<td>35–70 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 111 23</td>
</tr>
<tr>
<td>WL10/3-D</td>
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<td>Single-stage</td>
<td>50–90 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 110 31</td>
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<tr>
<td>WL10/3-D</td>
<td></td>
<td>Single-stage with actuator</td>
<td>50–90 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 110 30</td>
</tr>
<tr>
<td>WL10/3-Z</td>
<td></td>
<td>Two-stage with actuator</td>
<td>50–100 kW</td>
<td>0.13 kW</td>
<td>14.0 kg</td>
<td>241 110 32</td>
</tr>
<tr>
<td>WL20/1-C</td>
<td></td>
<td>Single-stage</td>
<td>50–120 kW</td>
<td>0.25 kW</td>
<td>20.0 kg</td>
<td>241 210 21</td>
</tr>
<tr>
<td>WL20/1-C</td>
<td></td>
<td>Single-stage with actuator</td>
<td>50–120 kW</td>
<td>0.25 kW</td>
<td>20.0 kg</td>
<td>241 210 11</td>
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<tr>
<td>WL20/2-C</td>
<td></td>
<td>Single-stage</td>
<td>70–180 kW</td>
<td>0.25 kW</td>
<td>20.0 kg</td>
<td>241 210 22</td>
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<tr>
<td>WL20/2-Z</td>
<td></td>
<td>Single-stage with actuator</td>
<td>70–180 kW</td>
<td>0.25 kW</td>
<td>20.0 kg</td>
<td>241 210 12</td>
</tr>
<tr>
<td>WL20/2-Z</td>
<td></td>
<td>Two-stage with actuator</td>
<td>70–200 kW</td>
<td>0.25 kW</td>
<td>20.5 kg</td>
<td>241 213 22</td>
</tr>
<tr>
<td>WL30</td>
<td>Z-C</td>
<td>Two-stage</td>
<td>72–330 kW</td>
<td>0.42 kW</td>
<td>28.0 kg</td>
<td>241 313 21</td>
</tr>
<tr>
<td>WL40</td>
<td>Z-A</td>
<td>Two-stage</td>
<td>145–570 kW</td>
<td>0.62 kW</td>
<td>37.0 kg</td>
<td>241 403 21</td>
</tr>
</tbody>
</table>

| Low-NOx     |         |                            |            |             |        |           |
| WL10/1-D    | 1LN     | Single-stage               | 30–55 kW   | 0.13 kW     | 14.0 kg| 241 110 15|
| WL10/2-D    | 1LN     | Single-stage               | 50–75 kW   | 0.13 kW     | 14.0 kg| 241 110 25|
| WL20/1-Z    | 1LN     | Two-stage                  | 55–130 kW  | 0.25 kW     | 20.5 kg| 241 213 25|
| WL30        | Z-C 4LN | Two-stage                  | 72–215 kW  | 0.42 kW     | 28.0 kg| 241 313 26|
| WL40        | Z-A 1LN | Two-stage                  | 120–355 kW | 0.62 kW     | 37.0 kg| 241 403 25|

Please refer to price list for special equipment.
Burner selection
WL10 to WL40, standard version
Burner selection
WL10 to WL40, Low-NO\textsubscript{x} version

Capacity graphs for oil burners certified in accordance with EN 267.

Stated ratings are based on an air temperature of 20°C and an installation of 500 m above sea level.

Stated oil throughputs are based on a nett calorific value (LHV) of 11.9 kWh/kg for light oil.

Model designation

\begin{align*}
\text{WL10/...-D 1LN} & \quad \text{WL10/1-D 1LN} \quad \text{WL10/2-D 1LN} \\
\text{Combustion head} & \quad \text{W 10/1-1LN} \quad \text{W 10/2-1LN} \\
\text{Capacity range} & \quad 30–55 kW \quad 50–75 kW
\end{align*}

\begin{align*}
\text{W} & \quad \text{L} \quad \text{20} \quad / \quad \text{1} \quad - \quad \text{C} \quad \text{Z} \quad - \quad \text{1LN} \\
\text{Mark} & \quad \text{Size} \quad \text{Capacity} \quad \text{Two-stage} \\
\text{L} & \quad \text{= Light oil} \\
\text{Weishaupt W-series burner}
\end{align*}

\text{① Limitation for Switzerland:} 
\text{For use on three-pass heat generators only.}
Dimensions

WL10 1LN combustion head
<table>
<thead>
<tr>
<th>Burner type</th>
<th>Dimensions in mm</th>
<th>( \alpha^\circ )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WL20/1-C</td>
<td>140 393 32 525 434 73 – – 358 179 – 376 285 182 183 108 M8 170 130 123 150 – – –</td>
<td></td>
</tr>
<tr>
<td>WL20/2-C</td>
<td>174 393 32 558 434 73 – – 358 179 – 376 285 182 183 120 M8 170 130 123 150 – – –</td>
<td></td>
</tr>
<tr>
<td>WL30Z-C</td>
<td>172 480 62 640 600 62 460 600 420 226 100 460 342 – – 127 M8 170–186 130 – – 158 490 45</td>
<td></td>
</tr>
<tr>
<td>WL40Z-A</td>
<td>242 577 72 805 615 72 480 615 450 245 108 480 360 – – 151 M10 186–200 160 – – 185 570 45</td>
<td></td>
</tr>
<tr>
<td><strong>Low-NO(_x)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WL10/1-D 1LN</td>
<td>344 31.5 476 398 51 – – 330 165 – 353 270 165 – 100 M8 150–170 110 – – – –</td>
<td></td>
</tr>
<tr>
<td>WL20/1-C 1LN</td>
<td>141 393 32 532 434 73 – – 358 179 – 376 285 182 183 108 M8 170 130 123 150 – – –</td>
<td></td>
</tr>
<tr>
<td>WL30Z-C 4LN</td>
<td>170 480 62 639 600 62 460 600 420 226 100 460 342 – – 127 M8 170–186 130 – – 158 490 45</td>
<td></td>
</tr>
</tbody>
</table>