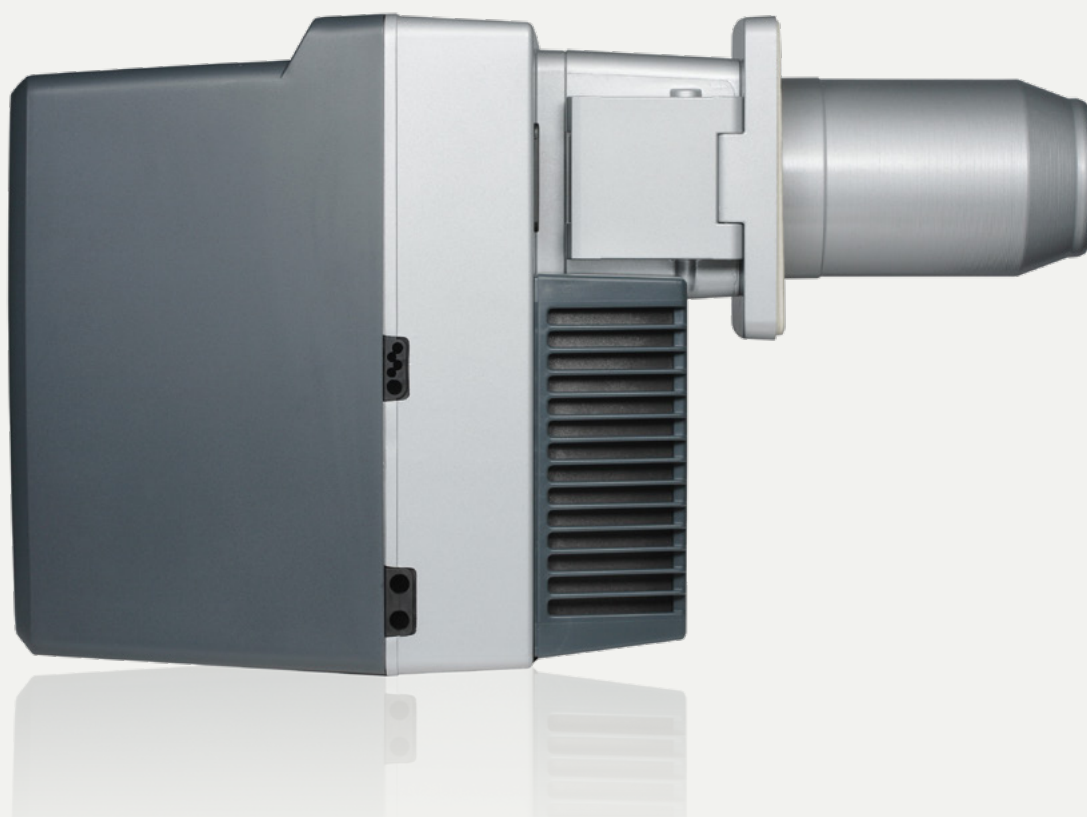


**Technical information
for W-series
oil burners**

– **weishaupt** –

WL5	14–55 kW
WL10	25–100 kW
WL20	45–180 kW
WL30	80–300 kW
WL40	100–400 kW

Compact
Digital
Efficient





Practical and proven

Reliable, digital, and efficient: the million-fold success of Weishaupt compact burners is the result of an uncompromising focus on quality and customer satisfaction. The burners' technology has been continuously developed and improved over decades.

State-of-the-art production methods and a meticulous final inspection of all products ensure Weishaupt's renowned quality, and thereby operational reliability and a long service life.

The large capacity range – from 14 to 400 kW overall – makes the burners suitable for a wide range of heat generators.

Weishaupt's digital combustion management offers greater ease of use and convenient maintenance, together with a high degree of reliability in operation. In addition, it enables integration of the burners into complex automation systems.

The electronic ignition unit used in all Weishaupt compact burners is characterised by high reliability and low power consumption. The burners' standard flame monitoring system ensures high operational availability and maximum safety.

The standard flame monitoring system ensures a high level of operational availability and maximum safety.

Innovative technology enables efficiency-optimising measures such as VSD (from WL30) and O₂ trim (from WL20) to be implemented cost-effectively. This allows investments in modulating burners to pay for themselves quickly.

For industrial applications in particular, the W-FM25 combustion manager is suitable for continuous operation. Its safety concept permits burner firing for more than 24 hours without shutdown.

H-version oil burners are equipped with an oil preheater. This ensures optimum flame stability even at low firing rates.

All WL5 burners with oil preheating are equipped with the Weishaupt nozzle shutoff system. It provides a tight oil seal during the nozzle head warm-up phase and prevents fuel oil from dripping after the burner has shut down.

Special software packages with adapter plugs are available for diagnosis and data evaluation of the combustion manager. Optimisation and fault analysis can be carried out conveniently using a laptop.

The Weishaupt service organisation is also available with every Weishaupt burner: Weishaupt maintains a dense sales and service network worldwide. Customer service is available around the clock.

Optimum training conditions ensure the high level of expertise of both Weishaupt service engineers and specialist tradespeople.

The key benefits:

- Large capacity range
- Digital combustion management for safety and convenience
- Electronic ignition
- Flame monitoring
- VSD and O₂ trim
- Continuous firing
- Laptop-based diagnostics
- Outstanding service

Attention to detail

The positive impression begins as soon as the burner cover is removed. All of the components are clearly arranged and the electrical plug connections are keyed to prevent incorrect connection. Good accessibility makes maintenance and service work straightforward.

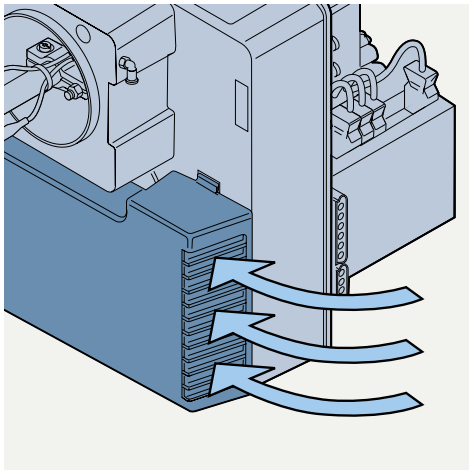
The common platform strategy used throughout the range simplifies procurement and inventory management.

Whichever model, each W-series burner's compact construction means it can be easily installed by one person. Commissioning effort is reduced to a minimum.

Adapters and the appropriate software are available for data evaluation and diagnostics. These allow burner operation to be optimised conveniently using a laptop.

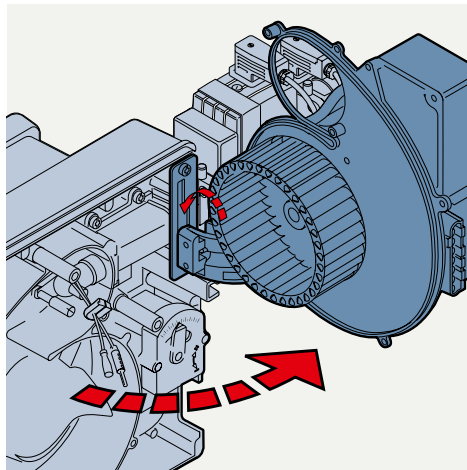
All WL burners with oil preheating are equipped with the Weishaupt nozzle shutoff system. It provides a tight oil seal during the nozzle head warm-up phase and prevents fuel oil from dripping after the burner has shut down.

The PO version of the W-FM25 combustion manager facilitates continuous firing for periods in excess of 24 hours.



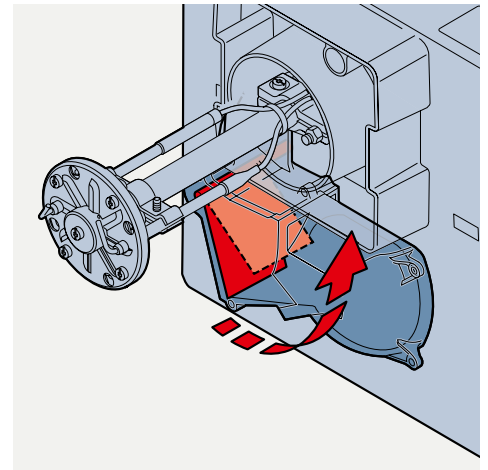
Sound-attenuated air inlet

The transversely mounted combustion-air fan has a specially sound-attenuated air inlet. As a consequence, burner operation is particularly quiet.



Servicing position

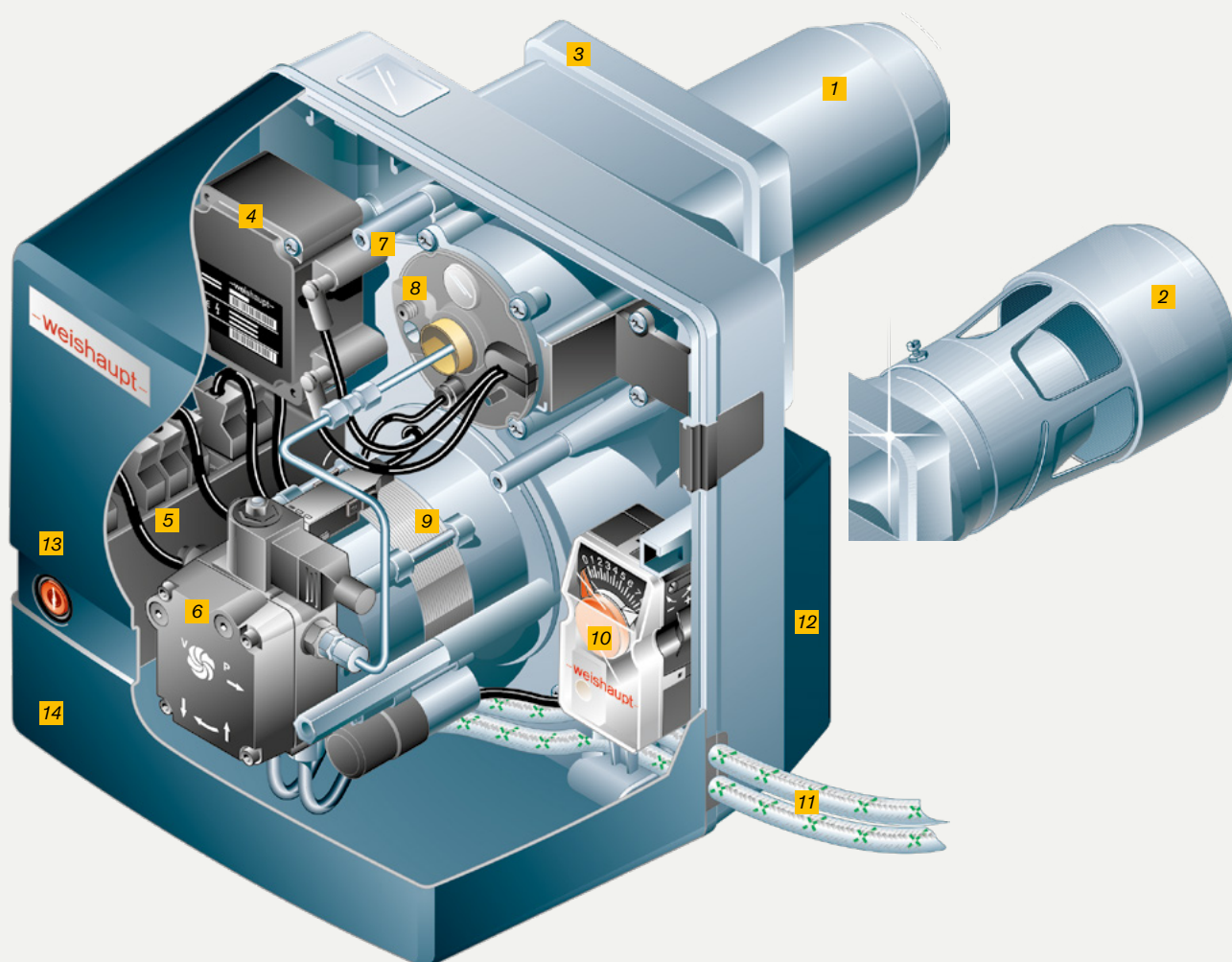
A special bracket allows the burner to be put into a servicing position, providing easy maintenance access to the burner and its mixing assembly.



Electronically controlled air damper

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

- 1 Standard-version combustion head
- 2 2LN-version combustion head
- 3 Burner flange
- 4 Electronic ignition unit
- 5 W-FM05 combustion manager
- 6 Oil pump with solenoid valve
- 7 Indicator bolt
- 8 Diffuser setting screw
- 9 Burner motor
- 10 Air damper actuator (optional)
- 11 Oil hoses
- 12 Sound-attenuated air inlet
- 13 Reset button with signal lamp
- 14 Cover



Example: Standard/Low-NO_x WL5

Reliable and user-friendly

All Weishaupt W-series burners are equipped as standard with a digital combustion manager.

All burner functions are controlled and monitored by highly capable microprocessors. The result is a burner that combines ease of use, precision and safety.

The digital combustion management system also enables communication with other systems via a bus connection. This allows a technician to monitor the operation of the burner and remotely diagnose any faults.

The key benefits:

- Precise combustion settings with reproducible values
- Safety is ensured by the reciprocal monitoring of two microprocessors
- Identical platform for gas and oil burners
- Remote electrical reset
- LCD screen with information, service, and parameterisation functions (WG30/40), or vari-coloured LED lamp to indicate burner operating status (WG5/10/20)
- PC interface for comprehensive setting and diagnostic capabilities
- Optional VSD and O₂ trim
- Fieldbus expansion module for Modbus or Profibus

Combustion manager	W-FM05	W-FM10	W-FM25
Fuels			
Gaseous	●	●	●
Liquid (distillate)	●	●	●
Gaseous / liquid (distillate)	–	–	●
Features			
Combustion manager for intermittent firing	●	●	●
Combustion manager for continuous firing	–	–	○ ¹⁾
Maximum number of actuators	1	1	2
Actuators with stepping motor	–	–	2
Maximum number of compound settings	–	–	2
Flame monitoring	QRB	QRB	QRB/KLC
Fuel metering via pulsed input	–	–	●
Service software	ACS 401	ACS 401	Vision Box
Efficiency optimisations			
Variable speed drive (VSD)	–	–	○
O ₂ trim	–	–	○
Control			
Stage switching inputs (thermostat/pressure control)	●	●	●
Three-term switching input	–	–	●
0/4–20 mA or 0/2–10 V analogue input / output	–	–	○ ²⁾
Bus systems			
eBus	●	●	–
Modbus-RTU	–	–	○ ³⁾
Profibus	–	–	○ ³⁾
Controls positioning			
Burner-mounted combustion manager	●	●	●
Removable control unit	–	–	10 m
Power supply			
120 V, 50 Hz / 60 Hz	●	●	●
230 V, 50 Hz / 60 Hz	●	●	●
Approvals			
Europe CE (230 V, 50 Hz)	●	●	●
Australia AGA (240 V, 50 Hz)	–	–	●
Canada / USA CSA (120 V, 60 Hz)	–	–	●

● Standard ○ Optional

¹⁾ PO version ²⁾ With EM3/3 expansion module ³⁾ With EM3/2 expansion module

-
- This diagram shows the internal components of a Weishaupt gas burner assembly in an exploded view. The components are numbered as follows:
- 1: Main burner tube
 - 2: Top cover plate
 - 3: Gas valve solenoid
 - 4: Igniter assembly
 - 5: Gas control valve
 - 6: Gas pressure regulator
 - 7: Gas inlet pipe
 - 8: Gas filter
 - 9: Gas burner head
 - 10: Gas control valve solenoid
 - 11: Gas supply pipe
 - 12: Vent pipe
 - 13: Air intake pipe
 - 14: Air filter

7

Economic and quiet

Unlike conventional burner technology, where the burner motor operates at a constant speed, a burner equipped with VSD (variable speed drive) reduces its motor speed in line with burner output. The VSD is electronically controlled by the digital combustion manager.

VSD offers the twin advantages of a reduction in electrical consumption and considerably reduced noise levels when firing at partial load.

The reduced noise levels are of particular practical benefit. A 10 dB(A) reduction in the sound pressure level can be achieved at 50 % burner load, which equates to a halving of perceived noise emissions.

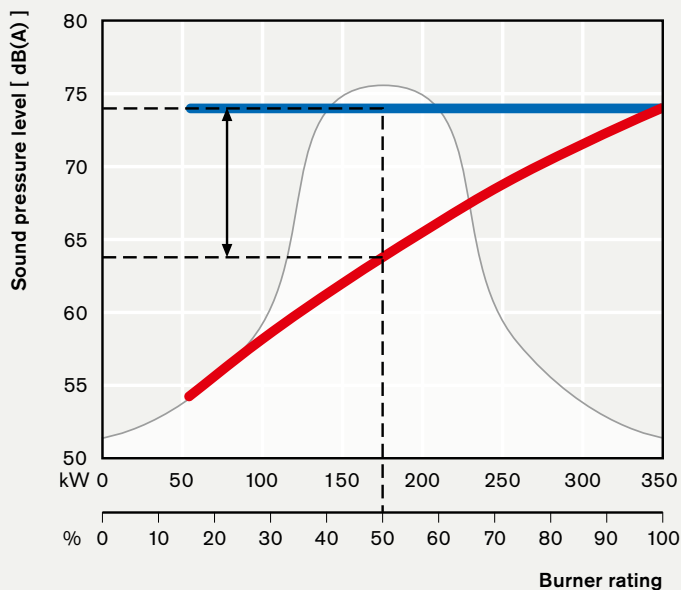
The Weishaupt W-FM25 combustion manager uses a frequency convertor and inductive pulse sensor to control and monitor the speed of the fan. Electronic compound regulation enables the fuel and air volumes to be set independently of one another.

A special feature of this version is the ease with which the fuel/air compound can be set for standard heat generators and its adaptability for thermal process plant.

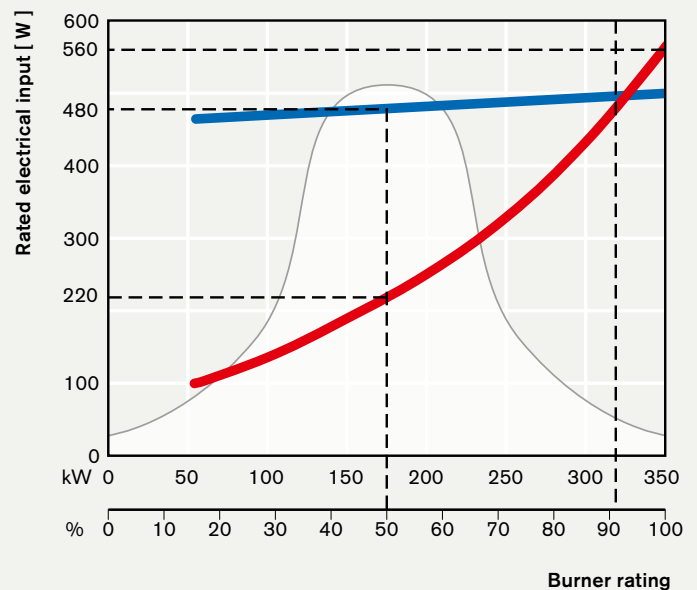
The key benefits:

- Electrical energy savings
- Reduction in burner noise emissions
- Capacity range identical to standard model
- Speed monitoring via inductive pulse sensor
- 230 V three-phase ac motor
- Electronic compound regulation of air damper and frequency convertor
- Air volume can be adjusted via diffuser position, air damper position, and fan speed
- Separate ignition load setting
- High-precision digital control
- Hinged flange for easy maintenance
- Excellent price/performance ratio

Economical and quiet with VSD

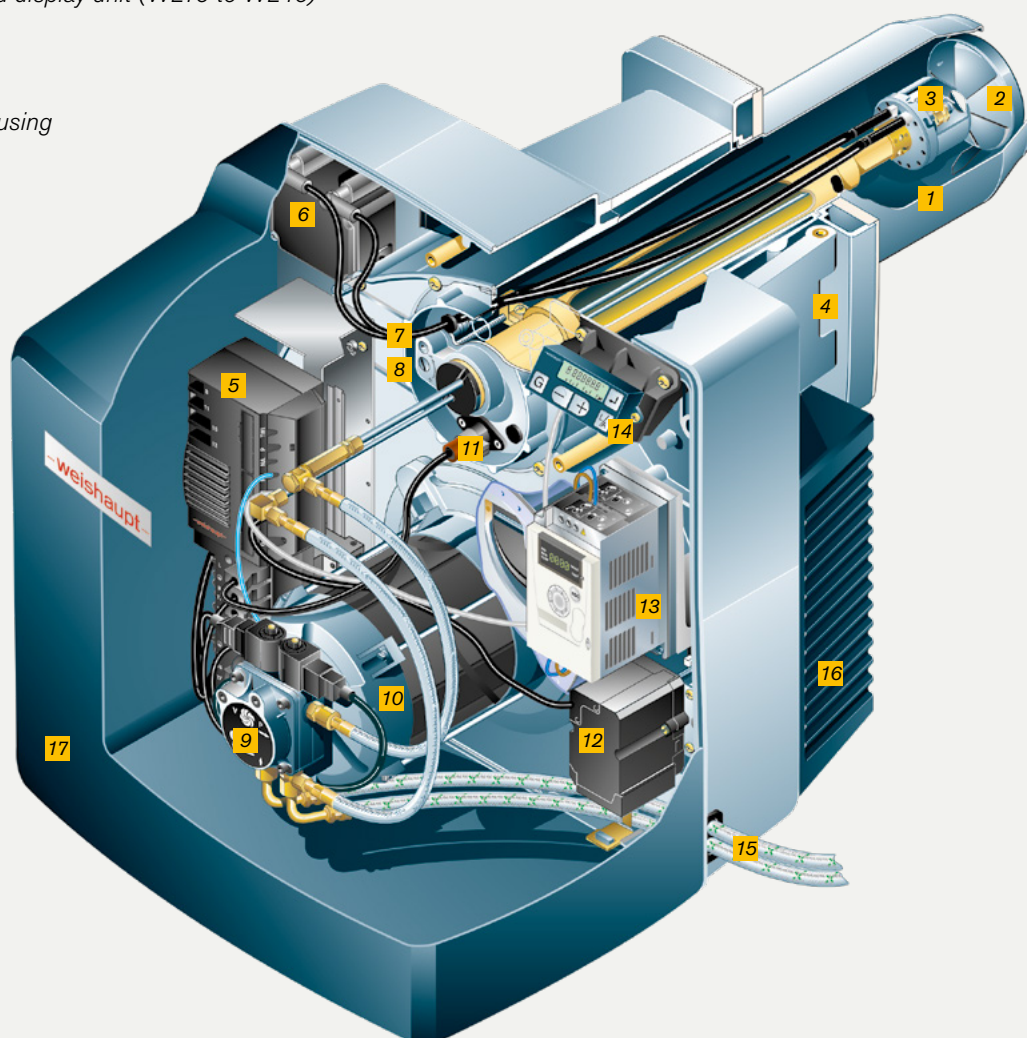


Typical reduction in sound pressure level for a WL30 burner



Typical reduction in rated electrical input for a WL30 burner

- 1 Combustion head
- 2 Mixing assembly
- 3 Ignition electrodes
- 4 Hinged flange (WL30 and WL40)
- 5 W-FM25 combustion manager
- 6 Electronic ignition unit
- 7 Indicator bolt
- 8 Diffuser setting screw
- 9 Pressure-switching oil pump with solenoid valves
- 10 Burner motor
- 11 Light sensor for flame monitoring
- 12 Air damper actuator
- 13 Frequency convertor
- 14 Control and display unit (WL10 to WL40)
- 15 Oil hoses
- 16 Air inlet housing
- 17 Cover



Example: Two-stage WL30 with VSD

Perfect combustion

O₂ trim improves both the safety and efficiency of the heating plant. In addition to increased operational reliability and savings in electrical power and fuel, reduced noise emissions are among the benefits of a fully regulated system.

Combustion air temperature, atmospheric pressure, humidity, calorific value, chimney draught, combustion chamber resistance, and contamination all influence combustion quality. Optimum on-site settings are therefore required to compensate for these varying influences.

Weishaupt's O₂ trim system takes this one step further. Its measurement and control technology continuously monitors and optimises the quality and efficiency of the combustion process. In other words, optimum settings are maintained automatically at all times.

Improved flame stability, and therefore enhanced operational reliability, is only one benefit of O₂ trim. Above all, permanent monitoring of the combustion air volume and the maximum possible reduction of flue gas volume lead to fuel savings and increased efficiency.

The reduced flow velocity increases heat transfer time, resulting in lower flue gas temperatures and improved efficiency. A further benefit is the associated reduction in noise emissions from the fan and airflow.

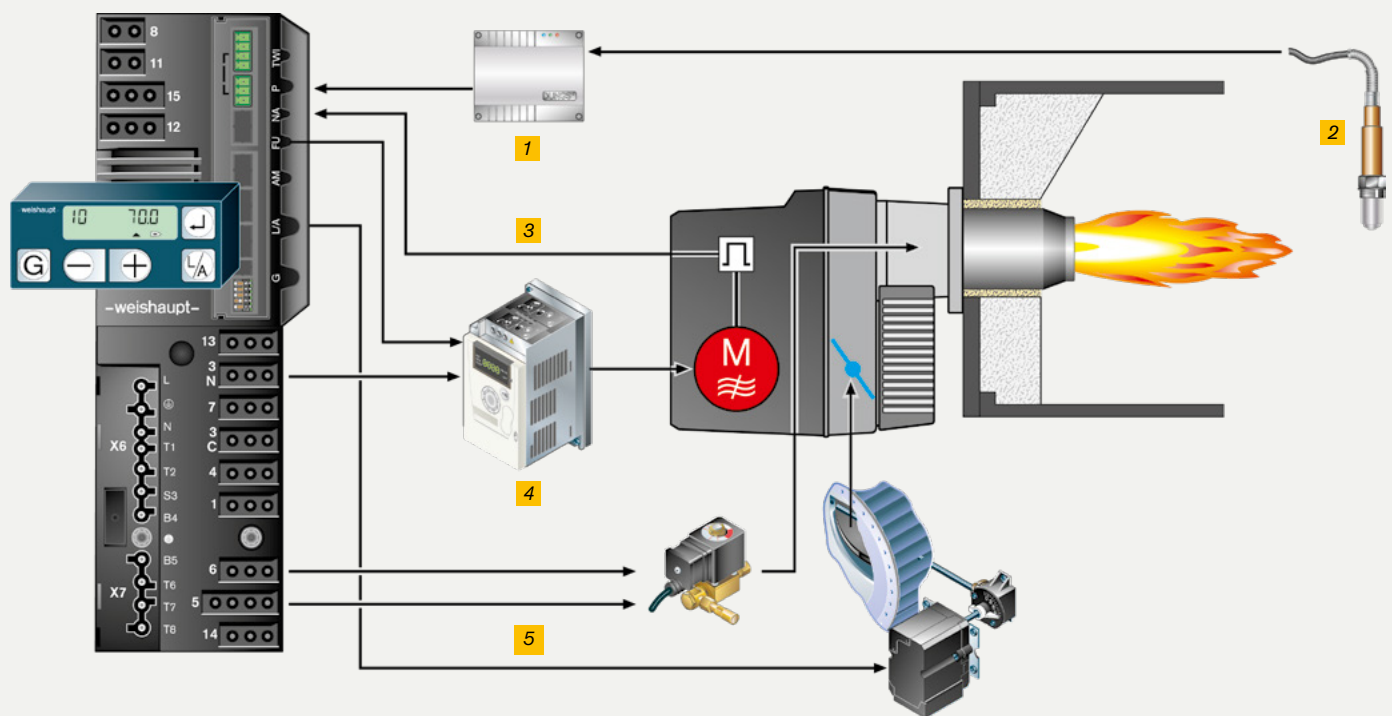
WL10 to WL40 burners can be equipped with O₂ trim, even for use on condensing boilers. The standard output range of the burners is not changed by its use.

Various parameterisation and adjustment options, accessible via a wide range of interfaces, complete this flexible safety and efficiency concept.

The key benefits:

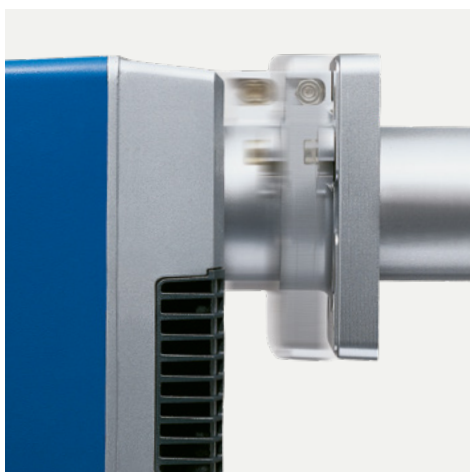
- Faster payback thanks to fuel and energy savings
- Reduction in burner noise emissions
- Capacity range identical to standard models
- Safety is ensured by the reciprocal monitoring of two microprocessors
- O₂ probe suitable for use on condensing boilers
- Adjustment of the O₂ setpoint curve and the minimum and maximum O₂ monitoring threshold
- High-precision digital control
- Separate ignition load setting
- Optional fieldbus and analogue I/O expansion modules
- The PC connection and Vision Box software offers further options, such as setting of the prepurge time, displaying of the operational sequence, and adjustment of functional parameters
- Good price/performance ratio
- O₂ trim available for the WL10 to WL40 burners

System schematic of a WL burner with VSD and O₂ trim

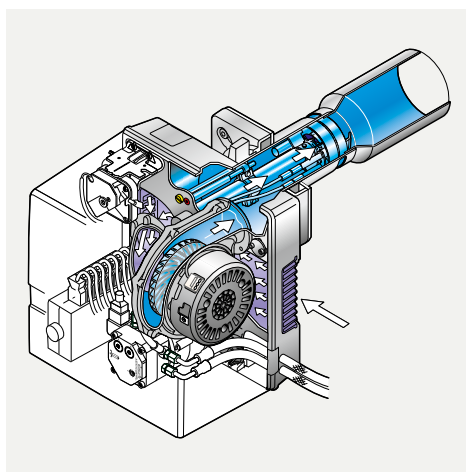


- 1 O₂ module
- 2 O₂ probe
- 3 Speed sensor
- 4 Frequency convertor with
230 V ac / 50 Hz power supply
- 5 Air damper actuator

High efficiency, low emissions



The sliding flange is used to adjust the burner insertion depth to suit the combustion chamber



Air volume is adjusted by setting the fan speed with a potentiometer.



The servicing position provides optimal access to the mixing assembly

Weishaupt purflam® burners are characterised by particularly low NO_x and CO emissions. Furthermore, they operate efficiently and with reduced noise levels. The capacity range extends from 16.5 to 40 kW.

The burners are distinguished by their particularly environmentally friendly operation. They benefit from soot-free combustion, meet EN 267 NO_x Class 3 emission limits and generate only low start-up and shutdown emissions.

Thanks to their versatility, the burners are suitable for integration into a wide range of systems. A sliding mounting flange fitted as standard allows the burner insertion depth to be adjusted to suit the combustion chamber.

The burners are suitable for all common steel and cast-iron boilers within the specified capacity ranges. Their compact design, ability to be rotated through 180°, and the option of operation with a ducted combustion air supply connected on either the left-hand or right-hand side provide maximum installation flexibility.

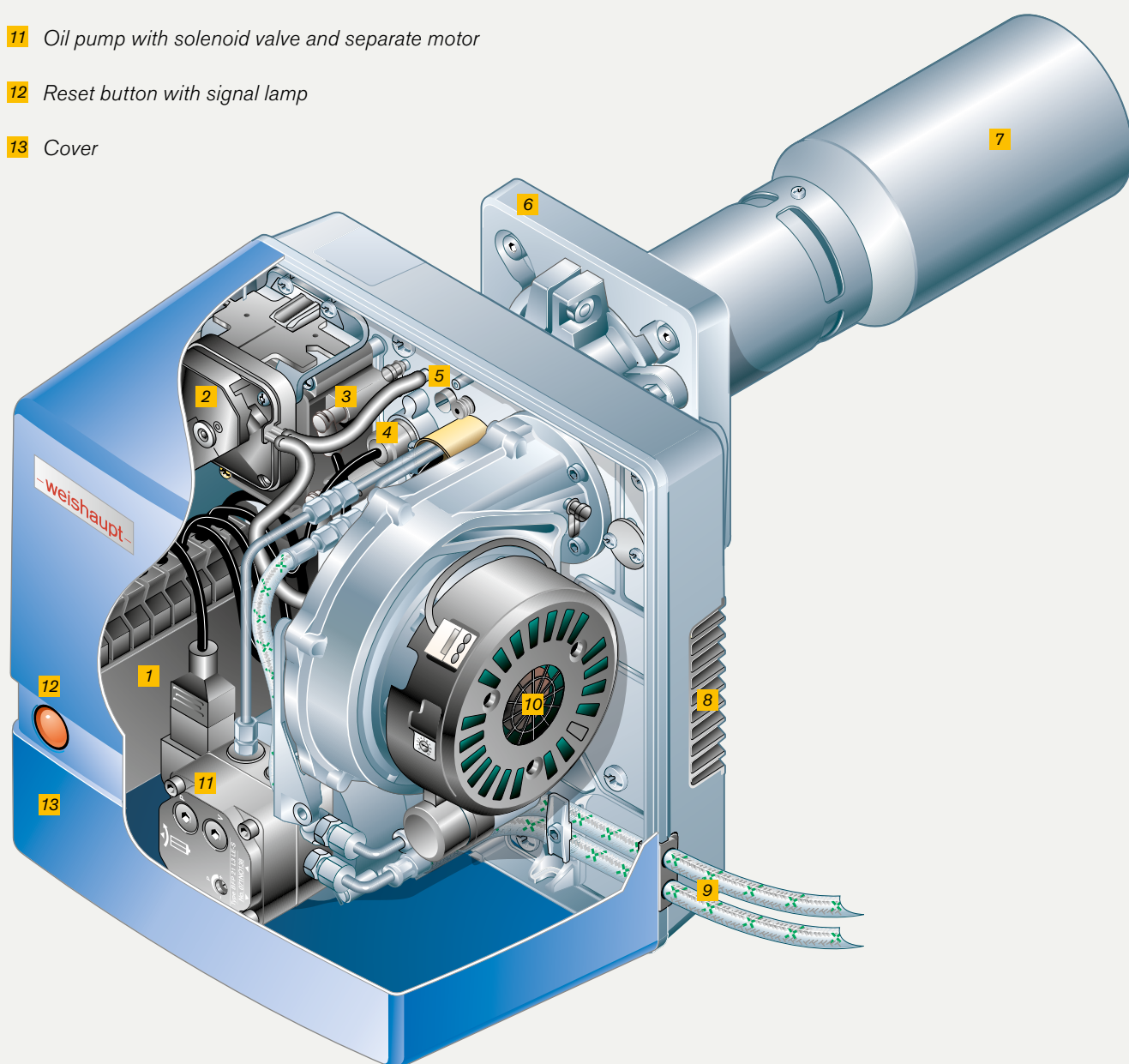
Commissioning is also very straightforward. As the oil and air nozzles are fitted at the factory and the burner is supplied pre-set, preparatory work such as adjusting the diffuser disc and air damper is eliminated. Fan speed, air quantity, and mixing pressure are set using a potentiometer. In addition, the recirculation opening can be conveniently adjusted by means of a setting screw, even with the burner in its installed position.

Maintenance is simple and time-saving. The burner features a dedicated servicing position, good access to all components, and a casing fitted with quick-release fasteners.

A smooth-running fan, a vibration-isolated drive unit, and specially designed fan blades provide high efficiency and low electrical power consumption. A sound-insulated casing and a soft-start function, with start-up at approximately 95 % of nominal speed, further contribute to quiet operation.

The system is complemented by digital combustion management. All electrical components have plug-in connections, indicator lights facilitate fault diagnosis, and a bus interface (eBus) further enhances operational reliability.

- 1** W-FM05 purflam® combustion manager
- 2** Air pressure switch
- 3** Electronic ignition unit
- 4** UV flame sensor
- 5** Setting screw for recirculation opening
- 6** Burner flange
- 7** purflam® combustion head
- 8** Air inlet
Optional ducted-air connection
on left-hand or right-hand side
- 9** Oil hoses
- 10** Speed-adjusted burner motor
- 11** Oil pump with solenoid valve and separate motor
- 12** Reset button with signal lamp
- 13** Cover



Example: purflam®-version WL5

Made for heavy duty

Industrial applications

Weishaupt burners are not only used for space heating but also in industrial process applications. The range of applications is vast and includes baking ovens, coffee roasters, laundries, grain dryers, glass production, paint drying, and much more.

Standard for process plan

All applications that lie beyond conventional heating are covered by the ISO 13577-2 standard, except in cases where specific applications require an individual approval. For most applications, using a burner that complies with the aforementioned standard is simpler and more cost-effective.

This standard covers the specific characteristics and demands of most industrial process systems.

Heavy duty

In manufacturing and production, processes such as drying require uninterrupted and often even continuous 24-hour operation. Additionally, harsher ambient operating conditions frequently place high demands for durability on the heat generator and/or individual components.

Continuous operation and the heat build-up associated with that calls for burners that are more robust. Weishaupt offers specialised burners for just such process applications. One of their features is the capability to withstand ambient temperatures of up to 50 °C.

This is achieved through the use of high-quality materials and components. For example, the burner fan wheel is driven by a permanent-magnet (PM) motor, which produces only a fraction of the waste heat associated with standard motors.

Energy consumption is minimised not only due to the characteristics of the high-efficiency PM motor but also thanks to the integrated variable speed drive (VSD). Given the long operating hours of process plant, amortisation is fast.

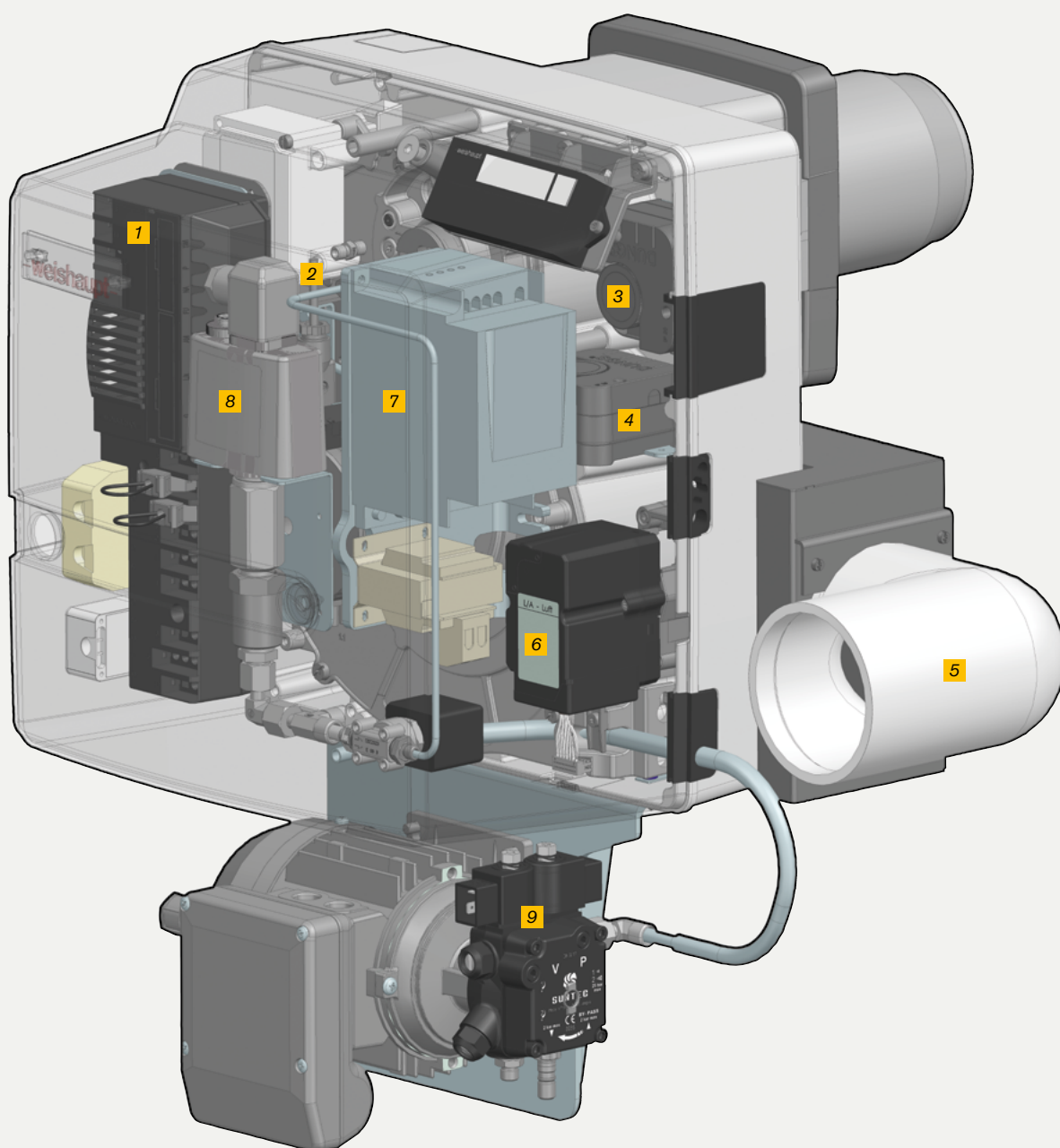
Individual adaptations

Thermal process applications can present some very particular requirements, but Weishaupt burners can be tailored to suit them. This includes a choice of orientation when mounting the burner or the option to draw in clean air from an extraneous source if the air surrounding the burner is contaminated with flour dust, for example.

The key benefits:

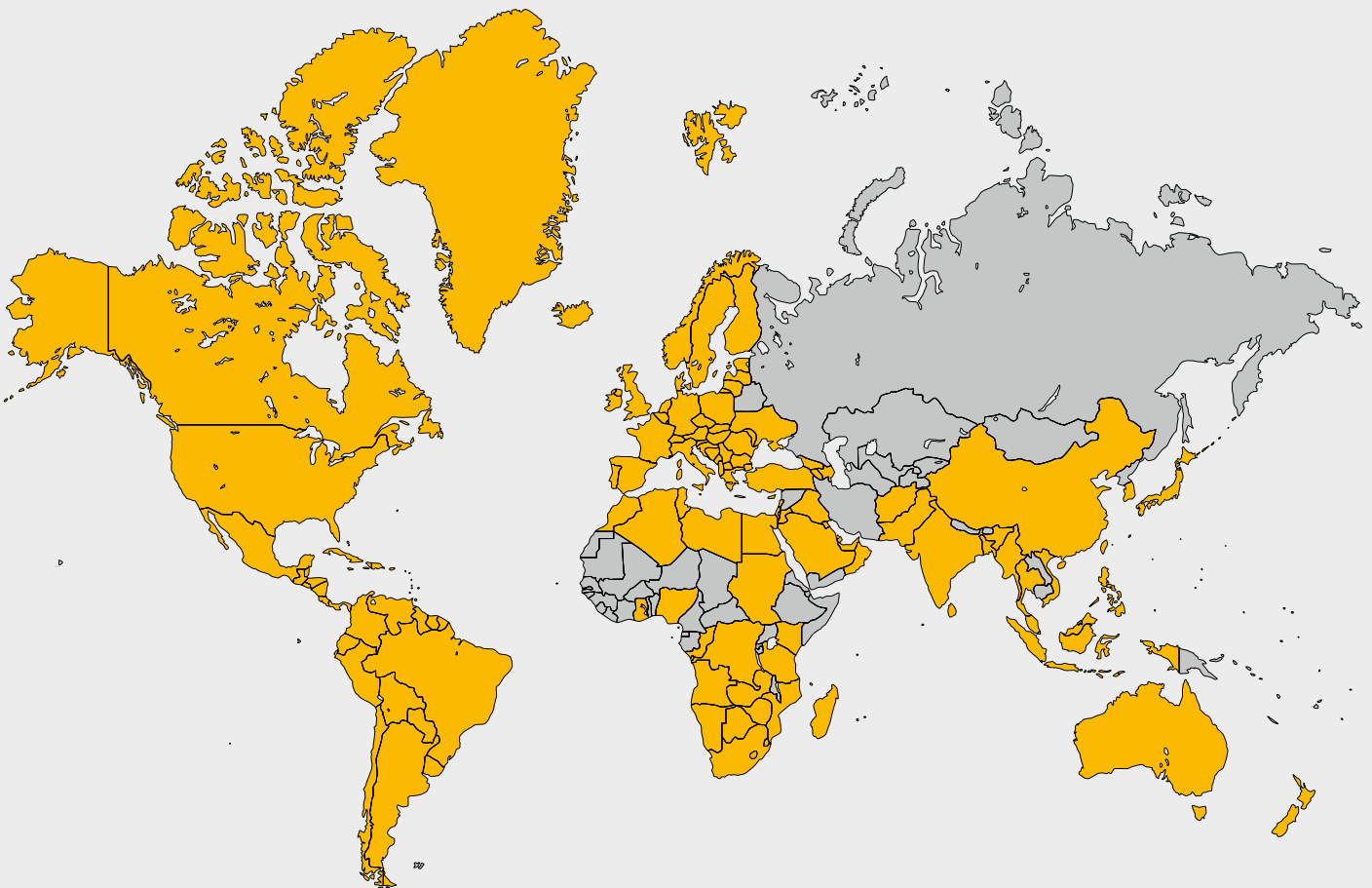
- Compliance with thermal process plant standard ISO 13577-2
- High-efficiency PM motor with VSD
- Ambient temperatures up to 50 °C (PM motor)
- Suitable for:
 - Gas oil
 - Paraffinic oils, GF-P
 - Mineral & biogenic oil blends:
 - GF-M (3.0–20.9 % bio)
 - GF-B30 (21.0–30.9 % bio)
 - Kerosene
- Choice of mounting orientation
- Individual adaptations to meet diverse requirements (e.g. extraneous air inlet)
- All burners are equipped with Wieland plugs and tested
- Bus connection to automation systems

- 1** W-FM25 combustion manager
- 2** Mains filter (EMC)
- 3** Air pressure switch
- 4** Air pressure switch for ducted-air connection
- 5** Ducted-air connection (optional)
- 6** Air damper actuator
- 7** Frequency convertor
- 8** Low oil pressure switch
- 9** Decoupled oil pump



Example: WL40 equipped for heavy duty

If you
need
us,
we're
there.



Weishaupt worldwide:

<i>Afghanistan</i>	<i>Canada</i>	<i>Finland</i>	<i>Italy</i>	<i>Mauritius</i>	<i>Oman</i>	<i>South Africa</i>	<i>Uruguay</i>
<i>Algeria</i>	<i>Chile</i>	<i>France</i>	<i>Japan</i>	<i>Mexico</i>	<i>Pakistan</i>	<i>Spain</i>	<i>USA</i>
<i>Angola</i>	<i>China</i>	<i>Germany</i>	<i>Jordan</i>	<i>Moldova</i>	<i>Panama</i>	<i>Sri Lanka</i>	<i>Vatican City</i>
<i>Argentina</i>	<i>Colombia</i>	<i>Ghana</i>	<i>Kenya</i>	<i>Monaco</i>	<i>Paraguay</i>	<i>Sudan</i>	<i>Venezuela</i>
<i>Australia</i>	<i>Congo</i>	<i>Greece</i>	<i>Korea (S.)</i>	<i>Montenegro</i>	<i>Peru</i>	<i>Suriname</i>	<i>Vietnam</i>
<i>Austria</i>	<i>Costa Rica</i>	<i>Greenland</i>	<i>Kuwait</i>	<i>Morocco</i>	<i>Philippines</i>	<i>Sweden</i>	<i>Zambia</i>
<i>Bahrain</i>	<i>Croatia</i>	<i>Guatemala</i>	<i>Latvia</i>	<i>Mozambique</i>	<i>Poland</i>	<i>Switzerland</i>	<i>Zimbabwe</i>
<i>Bangladesh</i>	<i>Cyprus</i>	<i>Guyana</i>	<i>Lebanon</i>	<i>Myanmar</i>	<i>Portugal</i>	<i>Syria</i>	
<i>Belgium</i>	<i>Czechia</i>	<i>Honduras</i>	<i>Lesotho</i>	<i>Namibia</i>	<i>Qatar</i>	<i>Taiwan</i>	
<i>Belize</i>	<i>Denmark</i>	<i>Hungary</i>	<i>Libya</i>	<i>Netherlands</i>	<i>Romania</i>	<i>Tanzania</i>	
<i>Bolivia</i>	<i>Ecuador</i>	<i>India</i>	<i>Liechtenstein</i>	<i>New Zealand</i>	<i>San Marino</i>	<i>Thailand</i>	
<i>Bosnia-Herzegovina</i>	<i>Egypt</i>	<i>Indonesia</i>	<i>Lithuania</i>	<i>Nicaragua</i>	<i>Saudi Arabia</i>	<i>Tunisia</i>	
<i>Botswana</i>	<i>El Salvador</i>	<i>Iran</i>	<i>Luxembourg</i>	<i>Nigeria</i>	<i>Serbia</i>	<i>Turkey</i>	
<i>Brazil</i>	<i>Estonia</i>	<i>Iraq</i>	<i>Madagascar</i>	<i>North Macedonia</i>	<i>Singapore</i>	<i>UAE</i>	
<i>Bulgaria</i>	<i>Eswatini</i>	<i>Malaysia</i>	<i>Malta</i>	<i>Norway</i>	<i>Slovakia</i>	<i>Ukraine</i>	
	<i>Faroe Islands</i>	<i>Israel</i>			<i>Slovenia</i>	<i>United Kingdom</i>	