

Installation and operating instructions

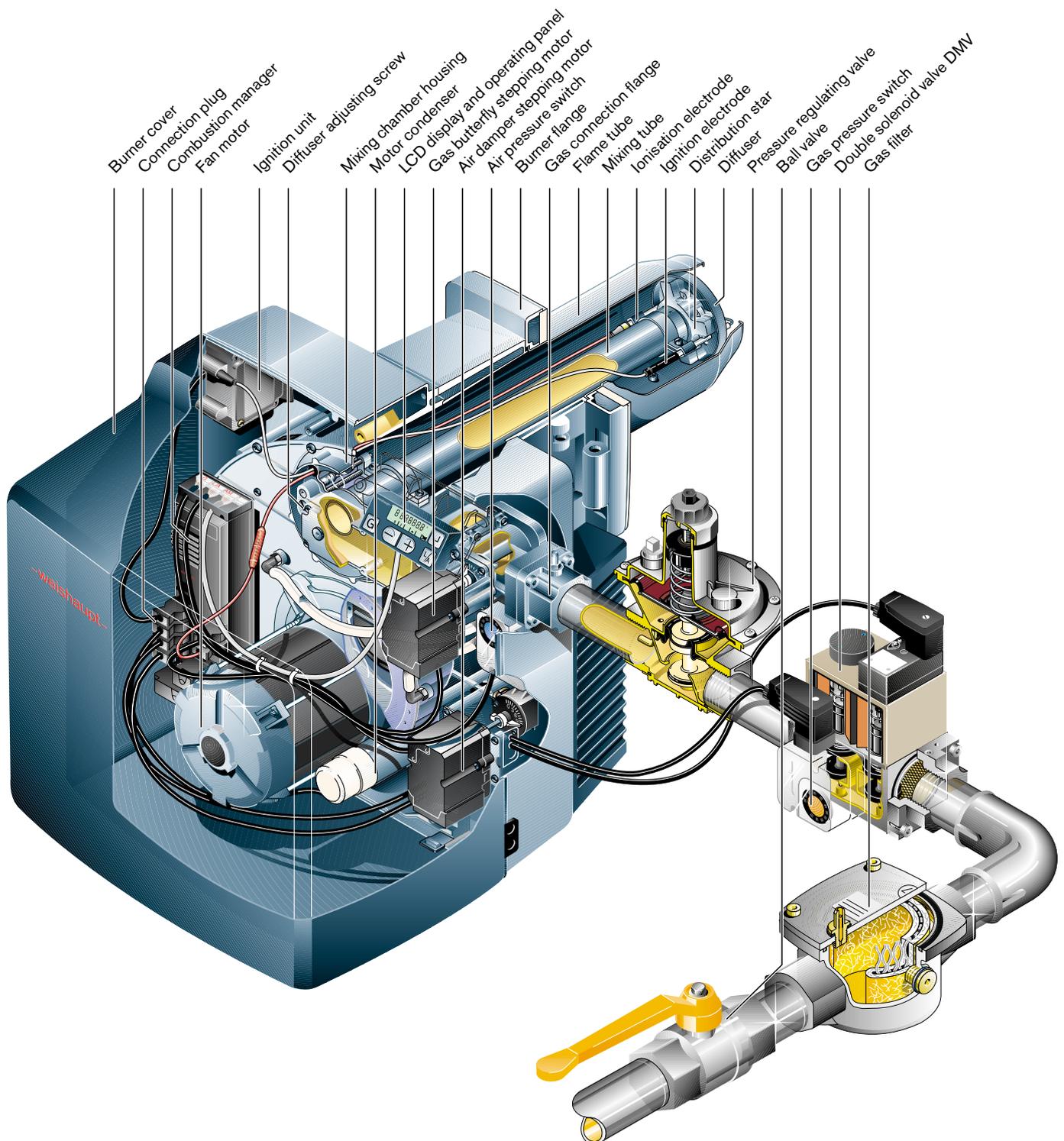
Weishaupt gas burner

WG30.../1-C, version ZM-LN (LowNO_x)

WG40.../1-A, version ZM-LN (LowNO_x)

For gas types: Natural Gas E, LL and Liquid Petroleum Gas B/P

– weishaupt –



Conformity Certification to ISO/IEC Guide 22

Confirmed by: Max Weishaupt GmbH

Address: Max Weishaupt Straße
D-88475 Schwendi

Product: Gas burners with fan
Type: WG30...
WG40...

The products described above conform to

Document No.: EN 676
EN 292
EN 50 081-1
EN 50 082-1
EN 60 335

In accordance with the guidelines

GAD	90/396/EEC
MD	98/37/EEC
PED	97/23/EEC
LVD	73/23/EEC
EMC	89/336/EEC
EED	92/42/EEC

these products are labelled as follows



CE-0085AU0064 (for WG30...)
CE-0085AS0311 (for WG40...)

Schwendi 24.03.1999

ppa.
Dr. Lück

ppa.
Denkinger

Comprehensive Quality Assurance is ensured by a
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DIN ISO 9001.

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Note to title page:

The "filter/ball valve" group on the valve train is shown
turned through 180°.

(For normal arrangement see section 4.5)

1 General information

These installation and operating instructions

- are an integral part of the equipment and must be kept permanently on site.
- are for the use by qualified personnel only.
- contain the relevant information for the safe assembly, commissioning and servicing of the equipment
- are for the attention of all personnel working with the equipment.

Explanation of notes and symbols



This symbol is used to mark instructions, which, if not followed, could result in death or serious injury.



This symbol is used to mark instructions, which, if not followed, could result in life threatening electric shock.



This symbol is used to mark instructions, which, if not followed, could result in damage to, or the destruction of the equipment and environmental damage.



This symbol is used to mark procedures, which you should follow.

1. Procedures with more than one step are numbered.
- 2.
- 3.

This symbol is used when you are required to carry out a test.

- This symbol is used to list points.

Abbreviations

Tab. Table
Ch. Chapter

Hand-over and operating instructions

The contractor is responsible for passing the operating instructions to the plant operator prior to hand-over. He should also inform the plant operator that these instructions should be kept with the heating appliance. The address and telephone number of the nearest service centre should be entered on the reverse of the operating instructions.

The plant operator must note that the plant must be inspected at least once a year by an agent of the contractor or other suitably qualified person. To ensure regular inspections, -weishaupt- recommends a service contract.

The contractor should instruct the plant operator in the use of the equipment prior to hand-over and inform him as and when necessary of any further inspections that are required before the plant can be used.

Guarantee and liability

Weishaupt will not accept liability or meet any guarantee claims for personal injury or damage to property arising as a result of one or more of the causes below:

- Failure to use the equipment as intended
- Improper assembly, commissioning, operating or servicing of the equipment.
- Operating the appliance with defective safety equipment, or with non-recommended or non-functioning safety and protection devices
- Failure to follow the information in the Installation and Operating Instructions
- Alterations made to the construction of the equipment by the plant operator
- Fitting additional components not tested or approved for use with the equipment.
- Alterations made to the equipment by the plant operator (e.g. motor ratio - rating and speed)
- Alterations made to the combustion chamber, which hinders constructive, predetermined flame formation
- Inadequate monitoring of parts liable to wear and tear
- Improperly executed repairs
- Acts of God
- Damage caused by continued use despite the occurrence of a fault
- Use of incorrect fuel
- Obstruction or damage of the supply lines
- Use of non-original -weishaupt- spare parts

3 Technical description

3.1 Permissible applications

The Weishaupt WG30 and WG40 gas burners are suitable for:

- mounting on heat exchangers according to EN303-3 or DIN4702-1
- on warm water plant with intermittent or continuous operation (combustion manager will switch off once during 24h).

Any other use is only permissible with the written agreement of Max Weishaupt GmbH.

- The burner must **only** be operated with the type of gas given on the burner plate.
- The burner must **only** be operated under the permissible ambient conditions (see Ch. 8.5)
- The burner must **not** be used outside. It is only suited for operation inside.
- The burner must **not** be used outside of its capacity range (see capacity graphs, Ch. 8.2).
- The gas supply pressure must **not** exceed the gas pressure given on the burner plate.
- The burner is **not** preset.

3.2 Function

Burner type

Forced draught burners with two stage or modulating operation. For modulating operation, a step controller is required (available as an accessory).

Combustion manager

Main points:

- Microprocessor control and monitoring of all burner functions
- LCD display
- Keypad operation
- Data bus connection (eBUS)
- Integrated valve proving of the solenoid valves

LCD display and operating panel

The LCD display shows the individual program steps and the current operating status. The burner is controlled via the keypad, which also allows you to call up information on the burner.

Stepping motors

Separate stepping motors control the gas butterfly valve and the air damper.

This allows optimal gas/air compound regulation throughout the operating range of the burner.

Flame sensor

Monitors the flame during all phases of operation. If the flame signal does not correspond to the sequence of operations, a safety lockout will occur.

FRS gas governor

Equalises variations in pressure from the gas supply network, thus providing a constant gas pressure and a regular gas throughput. The control gas pressure is set with this device.

DMV double solenoid valve

Automatic release or shut off of the gas flow. The limiting of the valve stroke, and with it a change of the pressure drop, is possible via adjustment of the setting screw.

Gas pressure switch

With too low a gas pressure, the low gas program is started. The gas pressure switch also serves as part of the automatic valve proving.

Air pressure switch

If there is a drop in the air supply, the air pressure switch causes a safety lockout.

Sequence of operations

Demand for heat from the boiler controller:

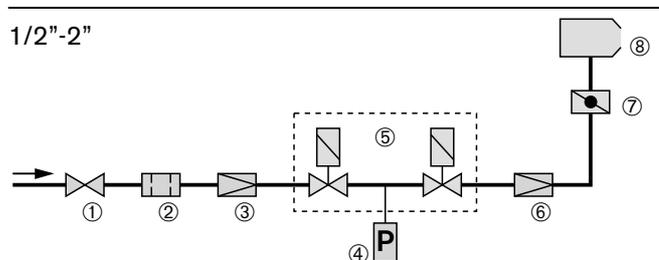
- Test of the stepping motors
- Fan starts - pre-purge of the combustion chamber
- Ignition on
- Solenoid valves open in sequence - fuel release
- Flame formation
- Air damper and gas butterfly valve open in unison according to heat requirement
- After 24 hours continuous operation a time controlled compulsory controlled shutdown occurs.

Sufficient heat attained:

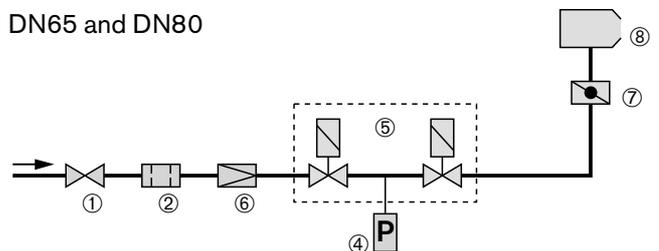
- Solenoid valves close in sequence
- Post-purge of the combustion chamber
- Soundness test of the solenoid valves
- Burner switches off - standby

Gas valve train schematic

1/2"-2"



DN65 and DN80



- | | |
|--|-----------------------------|
| ① Ball valve with TAS* | ⑤ DMV double solenoid valve |
| ② Filter | ⑥ Gas governor FRS |
| ③ Additional gas pressure governor (high pressure supply only) | ⑦ Gas butterfly valve |
| ④ Gas pressure switch | ⑧ Burner |
- * optional from DN65

Burner start-up tests

During every burner start the functioning of the stepping motors and the air pressure switch are tested. If a deviation from the program logic is detected, the start up program is interrupted and the burner is restarted. Up to 5 restarts are possible.

Low gas program

The gas pressure switch monitors the minimum gas pressure between the two valves of the DMV. If the gas pressure switch has not been activated due to low gas pressure the burner start is interrupted. After a waiting time of two minutes a restart of the burner is attempted. If the gas pressure is still too low, a third attempt at restarting the burner will commence after a further waiting time of two minutes. After a third unsuccessful attempt to start the burner, the start can only be attempted after a waiting time of one hour.

Valve proving

After a controlled shut down, the burner carries out an automatic valve proving test. The combustion manager tests for erroneous pressure increases and pressure drops in the gas line. If no erroneous pressure increases and pressure drops are detected, the burner goes to "Standby" and the display shows *OFF*.

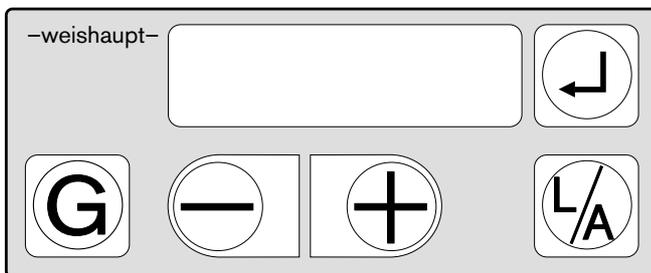
If the burner stops operating because of a lockout or a failure of the mains gas supply, the valve proving will be activated at the time of the next burner start:

- Burner switches off during the start-up phase
- Valve proving
- Automatic restart

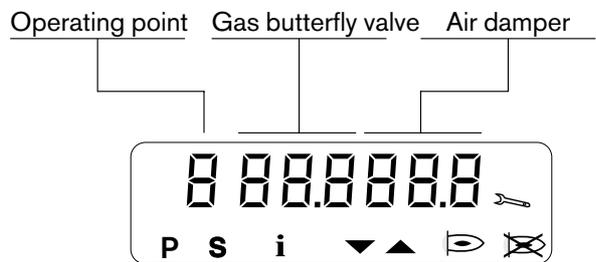
3.3 Operating controls

Operating panel and LCD display

Operating panel



LCD display



Key	Function	Symbol	Description
	resets burner lockout, is used to obtain information in the info mode and service mode	P	Setting mode active
	changes the air damper setting in the setting mode by pressing or	S	Burner starts
	changes the gas butterfly valve setting by pressing or	i	Information mode active
	changes the air damper and gas butterfly valve, decrease or		Service mode active
	increase, changes individual set point		Stepping motor movement
			Burner operation (flame signal present)
			Lockout

Note In the chapter "Installation and commissioning", instructions for regulation and operation will be given in detail.

4 Installation

4.1 Safety notes on installation

Electrically isolate the plant



Prior to installation switch off the mains switch and the safety switch. Failure to comply could cause death or serious injury by electric shock.

Valid for Switzerland only:

When installing and operating -weishaupt- gas burners in Switzerland, the regulations of the SVGW and the VKF, as well as local and cantonal regulation must be observed.

Furthermore the EKAS guideline (liquid petroleum gas guideline, part 2) must be adhered to.

4.2 Delivery, transportation and storage

Check delivery

Check the delivery to see that it is complete and that there has been no damage in transit. If the delivery is incomplete or damaged, contact the deliverer.

Transport

For the transport weights of the burners and valve trains see Ch. 8.7.

Storage

Be aware of the permissible ambient conditions when storing (see Ch. 8.5).

4.3 Preparation for assembly

Check burner plate

- The burner rating must be within the operating range of the heating appliance. The ratings given on the burner plate are the minimum and maximum possible firing rates of the burner. See capacity graphs Ch 8.2.

Space requirement

For burner and valve train dimensions see Ch. 8.6.

4.4 Burner installation

Prepare heating appliance

The diagram shows the refractory for a heating appliance without a cooled front. The refractory must not protrude beyond the front edge of the combustion head. The refractory can, however, take a conical shape ($\geq 60^\circ$). Refractory may not be required on boilers with water cooled fronts, unless the manufacturer gives other instructions.

Comb. head	Dimensions in mm						
	d ₁	d ₂	d ₃	d ₄	d ₅	l ₁	
WG30/1	127	M8	170 ... 186	130	170	166	
WG40/1	154	M10	186 ... 200	160	170	235	

* Depending on the type of heat exchanger
Observe instructions given by the manufacturer!

Installing the burner

1. Remove mixing head ⑤ (see Ch. 7.3)
2. Loosen screws ④
3. Remove burner flange ② with flame tube from the housing.
4. Fix the burner flange to the heat exchanger with screws ③.
5. Push burner over the stay bolts ⑥.
6. Fit and tighten screws ④
7. Check the ignition and ionisation electrodes are set correctly (see Ch. 7.5).
8. Fit mixing head (see Ch. 7.3). Ensure the gasket is correctly aligned

Installation of burner rotated through 180°

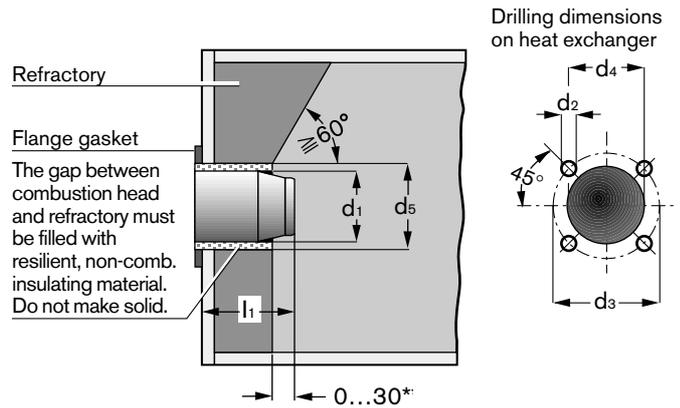
As above. There are, however, a few other procedures necessary:

- ☞ Fix burner flange ① rotated through 180°
- ☞ Place burner on the stay bolts rotated through 180°
- ☞ Remove the fixing angles ③ from the burner housing
- ☞ Fix the operating panel ② with its base plate to the opposite side of the burner housing.
- ☞ Attach the fixing angles to the bottom of the burner housing.

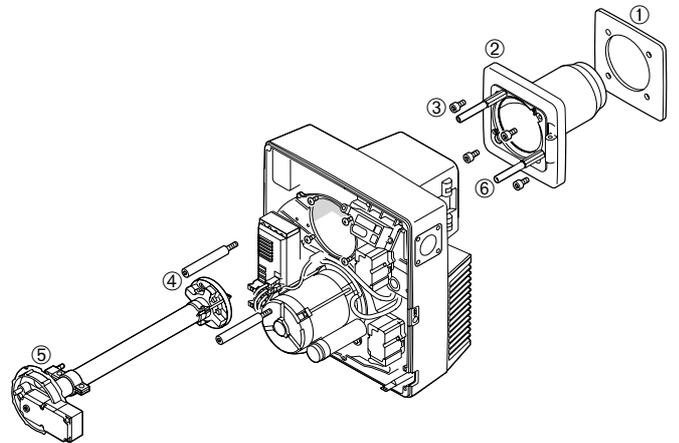


Ensure the burner has been mounted correctly to avoid critically hot temperatures, which could lead to serious burns if skin comes into contact with the burner flange.

Refractory and drilling dimensions

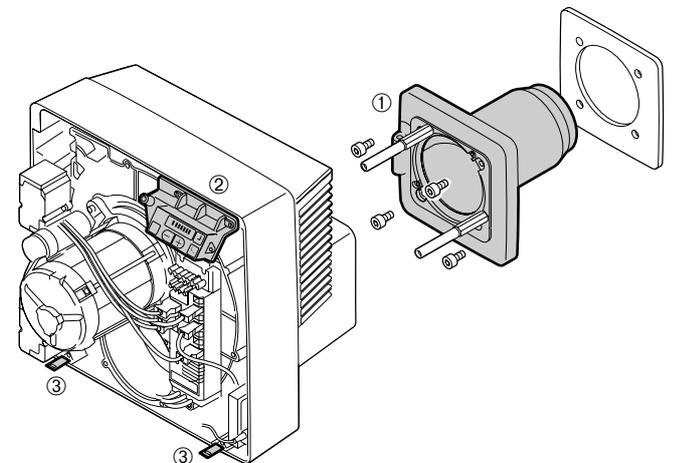


Burner installation



- | | |
|---------------------|---------------------|
| ① Flange gasket | ④ Socket head screw |
| ② Burner flange | ⑤ Mixing head |
| ③ Socket head screw | ⑥ Stay bolts |

Installation of burner rotated through 180°



- | |
|-------------------|
| ① Burner flange |
| ② Operating panel |
| ③ Fixing angles |

4.5 Installing the valve train



Risk of explosion!

Gas leaks can lead to the build-up of explosive gas/air mixtures. With the presence of an ignition source, these then result in explosions.

To avoid accidents, please follow the following safety information on valve train installation.

- ☞ Before beginning work, close all the relevant shut off devices and ensure they cannot be accidentally reopened.
- ☞ Ensure the valve train components are correctly aligned and that all the joints are clean.

- ☞ Flange seals must be fitted correctly on the machined faces.
- ☞ Tighten screws evenly diagonally opposite.
- ☞ Valve trains must be mounted tension-free. Do **not** compensate for misalignment by over tightening. Do **not** tighten or seal pipe thread connections on the mounted burner.
- ☞ The valve trains must be fixed and supported securely. They must not be allowed to vibrate during operation. Supports suitable for the site should be fitted during installation.
- Only sealing agents tested and approved by the gas supplier must be used.

Mounting the valve train from the right

1. Remove the protective film from the gas connection flange.
2. Mount the components in the order shown in the diagram.

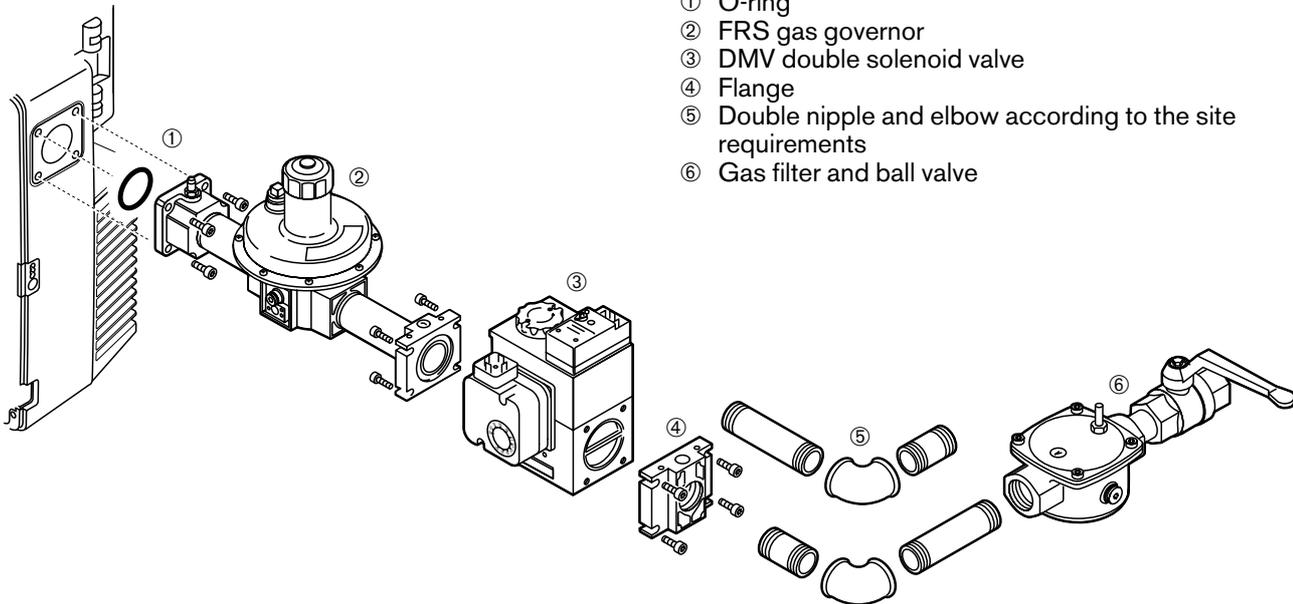
Note

DMV:

FRS:

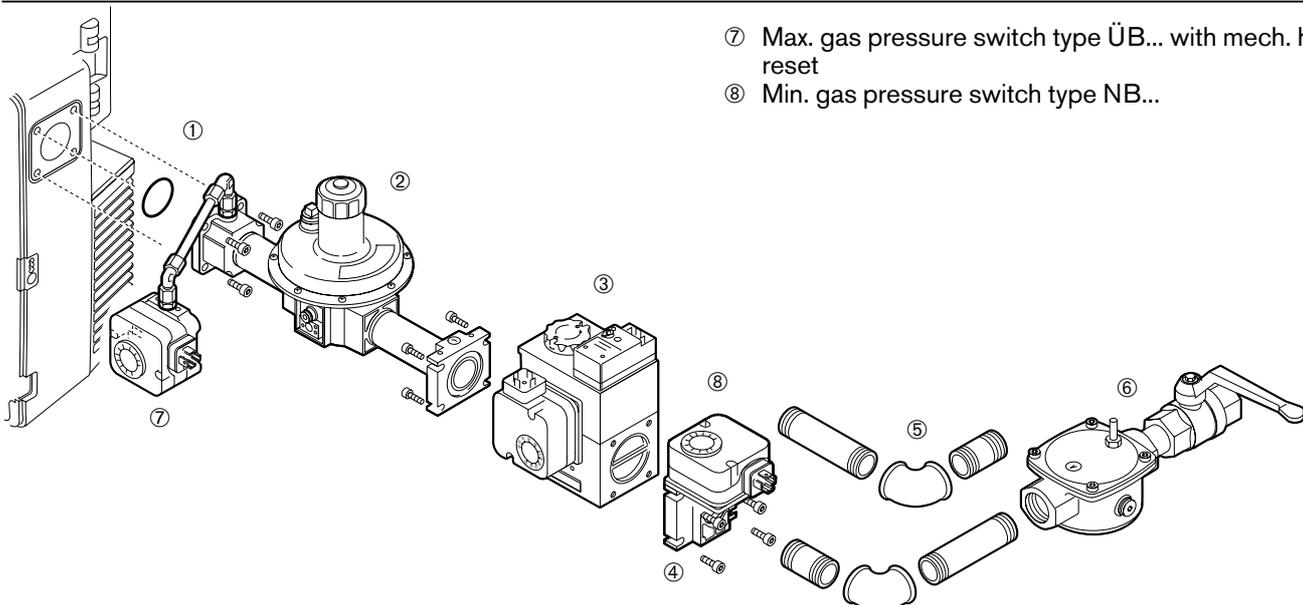
Can be mounted in the horizontal or vertical plane.
Can be mounted with the spring in the horizontal or vertical plane.

Installation example - Internal diameter 1/2" to 2" (included in delivery)

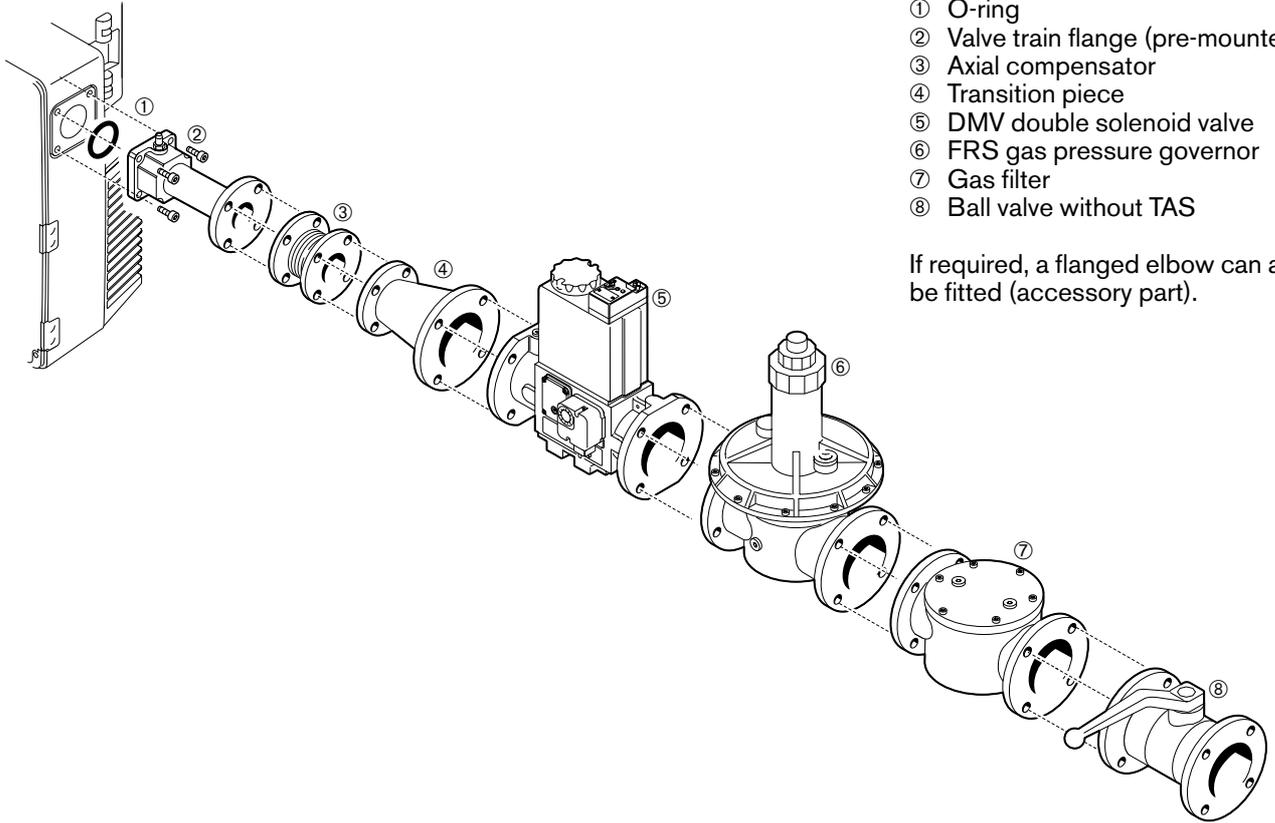


- ① O-ring
- ② FRS gas governor
- ③ DMV double solenoid valve
- ④ Flange
- ⑤ Double nipple and elbow according to the site requirements
- ⑥ Gas filter and ball valve

Installation example - Special version



- ⑦ Max. gas pressure switch type ÜB... with mech. hand reset
- ⑧ Min. gas pressure switch type NB...



- ① O-ring
- ② Valve train flange (pre-mounted)
- ③ Axial compensator
- ④ Transition piece
- ⑤ DMV double solenoid valve
- ⑥ FRS gas pressure governor
- ⑦ Gas filter
- ⑧ Ball valve without TAS

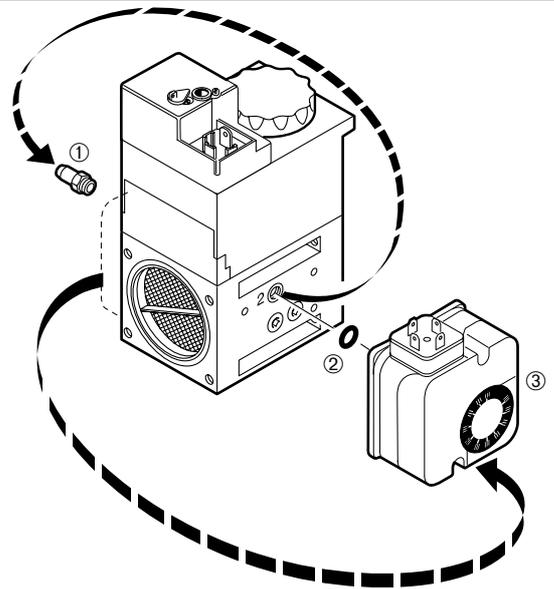
If required, a flanged elbow can also be fitted (accessory part).

Mounting the valve train from the left

With the burner rotated through 180°, the valve train as described above can be fitted from the left. However, the following additional steps are necessary:

1. Before mounting the DMV, remove the gas pressure switch ③
2. Remove the closing plug ①
3. Fix the gas pressure switch to the opposite side of the DMV. Be aware of the 'O'-ring ②!
DMV-D 507/11 to 520/11: test point 2
DMV-D 5065/11 and 5080/11: test point 3
4. Fix the closing plug to the opposite side of the DMV.

Change position of the gas pressure switch for left handed valve trains



- ① Closing plug
- ② 'O'-ring
- ③ Gas pressure switch

4.6 Valve train soundness test

- ❑ The valve train soundness test must be carried out with the main isolating cock and DMV valves closed.

Test pressure in valve train: _____ min. 100 mbar
 Waiting time for pressure equalisation: _____ 5 minutes
 Test time: _____ 5 minutes
 Max. permissible pressure drop: _____ 1 mbar

1st test phase:

Ball cock up to 1st valve seat

1. Connect test assembly to the gas filter and DMV inlet.
2. Open test point between V1 and V2.

2nd test phase:

Between the valves and 2nd valve seat

1. Connect test assembly to test point between V1 and V2.
2. Open the test point after V2.

3rd test phase:

Valve train connection parts and gas butterfly valve

1. Insert blanking plate. (See also note in Ch. 7.3)
2. Connect the test assembly to the test point after V2 and the connection flange of the gas butterfly valve.
3. After the soundness test remove the blanking plate.
4. Tighten the Torx screws on the mixing head.

Note: To carry out a soundness test, brush connection points with foam forming agents or similar, non-corrosive material.

DMV test points

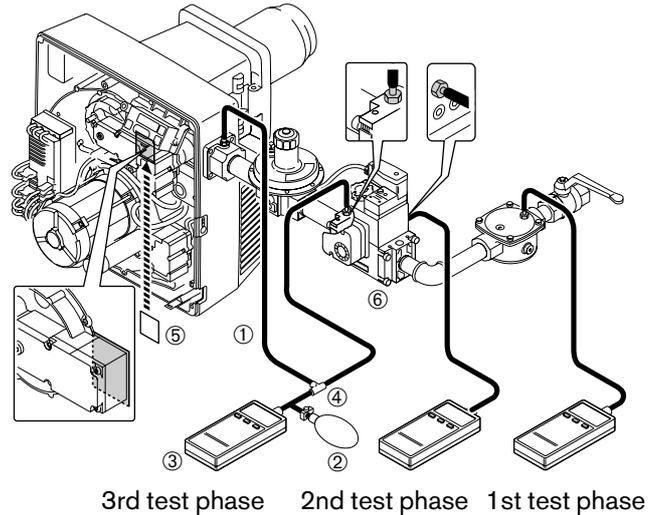
During the soundness test the closing plugs on the valve train should be replaced with test nipples.

- ☞ After testing close all the test points!

Documentation

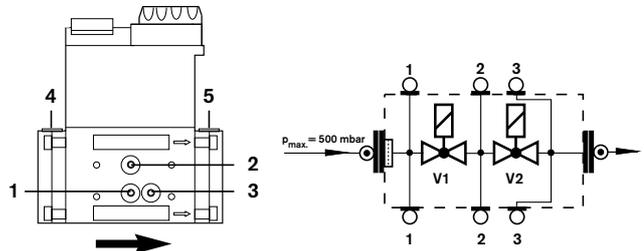
- ☞ Results of the pressure test must be recorded on the service/commissioning report.

Soundness testing



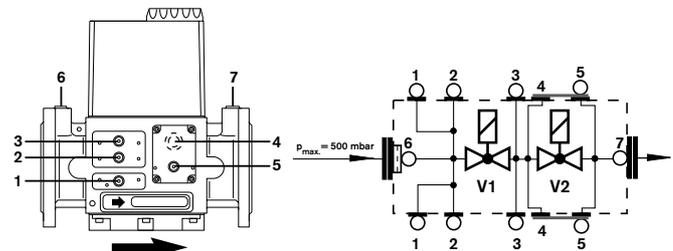
- ① Rubber hose with T piece
- ② Aspirator
- ③ Measuring device (U-tube or electronic manometer)
- ④ Hose clamp
- ⑤ Blanking plate
- ⑥ Double solenoid valve DMV

Test points on DMV-D 507/11 to 520/11



- Test points **1 and 4**: Pressure before V1
 Test point **2**: Pressure between V1 and V2
 Test points **3 and 5**: Pressure after V2

Test points on DMV-D 5065/11 to 5080/11



- Test points **1, 2 and 6**: Pressure before V1
 Test point **3**: Pressure between V1 and V2
 Test point **4**: Ignition gas outlet
 Test points **5 and 7**: Pressure after V2

5 Installation and commissioning

5.1 Safety notes on initial commissioning

The initial commissioning must only be carried out by the supplier, manufacturer or their appointed agent. At this time, all the control and safety equipment must be checked to ensure correct operation and, if they can be adjusted, it should be checked they have been set correctly.

Furthermore, the correct fusing of the circuits and the measures for contact protection of electrical equipment and of all wiring must be checked.

- The burner has **not** been preset!

5.2 Preparations for initial commissioning

Purging the gas supply line

The gas line may only be purged by the local gas authority. Lines have to be purged with gas until the remaining air or inert gas has been expelled from the line. The ball valve on the gas train must be kept closed during supply line pressure tests and purging.

Note

If work has been carried out on the gas line, i.e. exchanging of parts, valve trains or gas meters, re-commissioning may only be carried out after the relevant lines have been purged by the local gas authority. Electrical continuity must be ensured when changing items in the gas train.

Check gas supply pressure



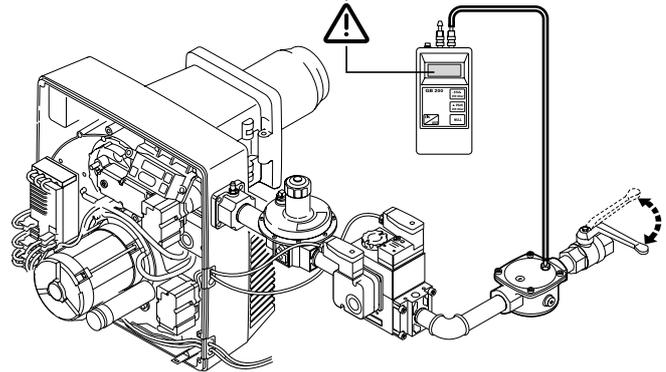
Risk of explosion!

If the supply pressure is too high it can destroy the valve train. The gas supply pressure must not exceed the maximum permissible valve train pressure given on the burner plate. Check the supply pressure before purging the valve train:

1. Connect pressure gauge to the filter.
2. Slowly open the ball valve while watching the pressure gauge.
3. Close the ball valve immediately the supply pressure exceeds the maximum permissible valve train pressure. Do **not** start burner!
Inform the plant operator.

Check gas supply pressure

CE 0085	Max Weishaupt GmbH, 88475 Schwendi -Weishaupt-	
	Burner type	
	Version	
	Cat.	
	Supply pressure min	max 500 mbar
Rating	kW	kg/h
Oil	to DIN 51 603	BN A slow
Voltage	V- Hz	
Elec. rating	kW	kW
Serial No.		Year of man.

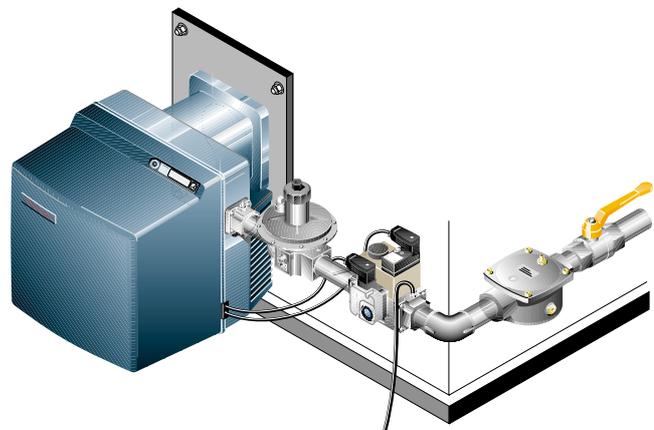


Purging the valve train

- ❑ The gas supply pressure must be correct.
1. Connect a hose, leading out to safe atmosphere, to the test point before V1 on the DMV.
 2. Open the ball valve. The gas in the valve train is vented to the atmosphere via the hose.

Small amounts of gas can be burnt off at the end of the hose with a suitable test burner.

Purging the valve train



Venting hose to atmosphere or test burner

Checklist for initial commissioning

- The heating appliance must be assembled ready for operation.
- The operating instructions of the heat exchanger must be followed.
- The whole plant must be wired correctly.
- The heating appliance and the heating system must be sufficiently filled with heating medium.
- Flues must be free from obstructions.
- Explosion relief doors must be operable.
- The flue gas dampers must be open.
- The ventilators on air heaters must work correctly.
- Sufficient fresh air must be available.
- The required test points for combustion analysis must be available.

- Ensure that the heat exchanger and the flue gas section up to the test sampling point is sound, so that test results are not corrupted by extraneous air.
- Water level controls must be set correctly.
- Thermostat, pressure switch and other safety devices must be in operating position
- There must be a demand for heat.
- Fuel lines must be purged of air.
- The soundness of the valve train must be tested and documented.
- The gas supply pressure must be correct.
- Fuel cut off devices must be closed.

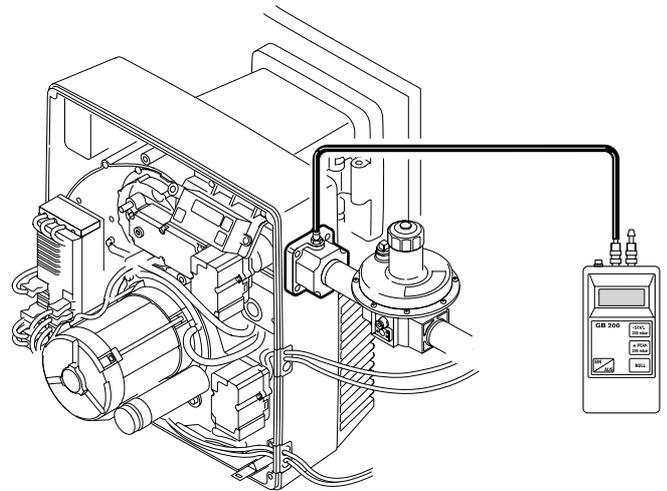
Note Dependent on site requirements, further checks may be necessary. Note the instructions for the individual items of plant equipment.

5.3 Commissioning and setting

Connect manometer

To measure gas pressure during setting.

Connection of manometer



Determine values for pre-setting

1. Select and note the full load gas setting pressure from the table "Setting and supply pressures".
2. Select and note the required full load pre-setting for the air damper and the diffuser from the graph "Setting diagram air damper - diffuser". Write the pre-set value of the air damper on the label provided.
3. Calculate the gas throughput for full and partial load (see appendix).
Pay attention to the appliance manufacturer's instructions.

Label for burner setting

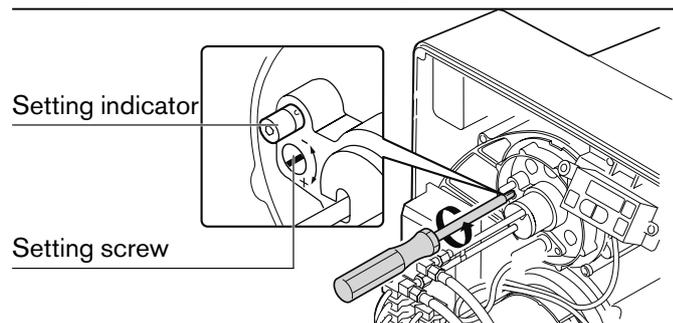
-weishaupt- Burner Setting		
Date:		
Diffuser setting:		mm
Gas setting pressure at full load:		mbar
Setting at Combustion Manager Air damper pre-setting at full load (P9)		
Point	G	L/A
P0		

Set the diffuser

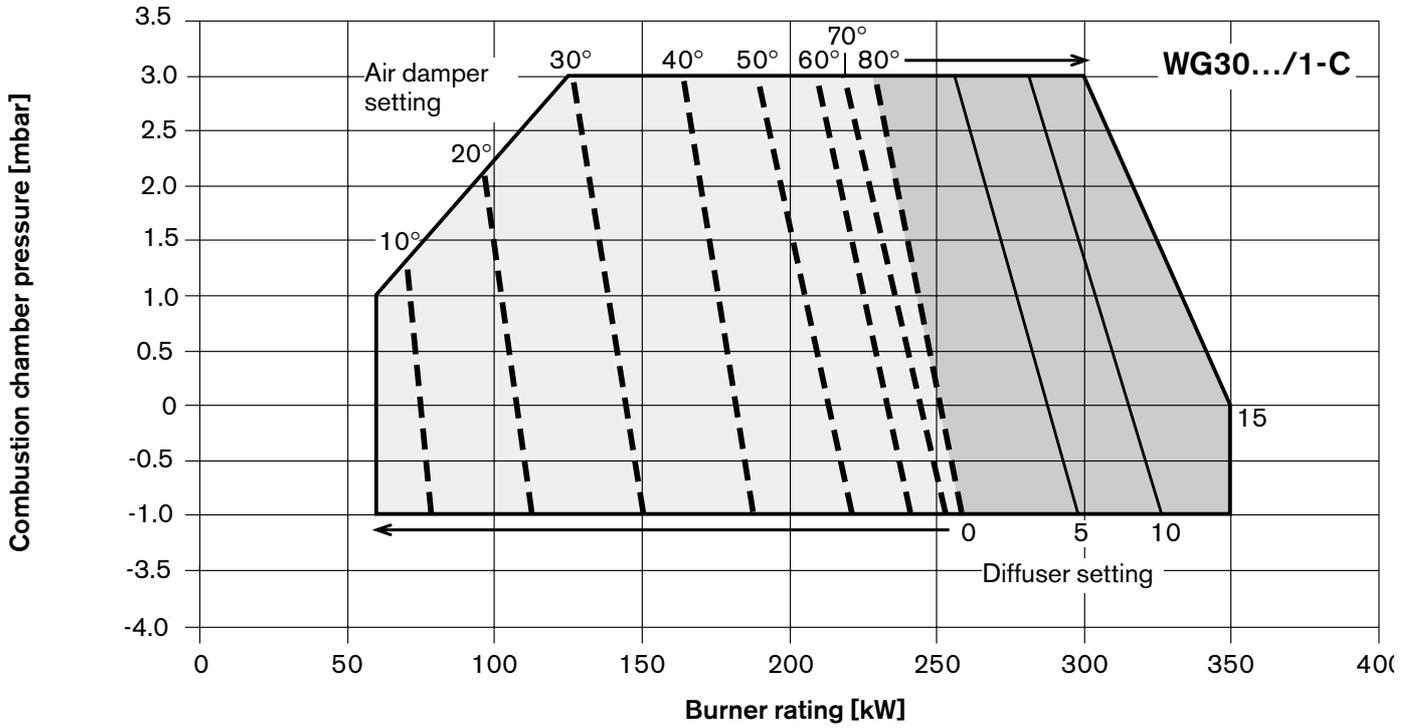
- Turn the setting screw until the scale on the setting indicator shows the pre-set value.

Note At diffuser setting 0 the setting indicator is level with the mixing chamber housing (i.e. the scale is not visible).

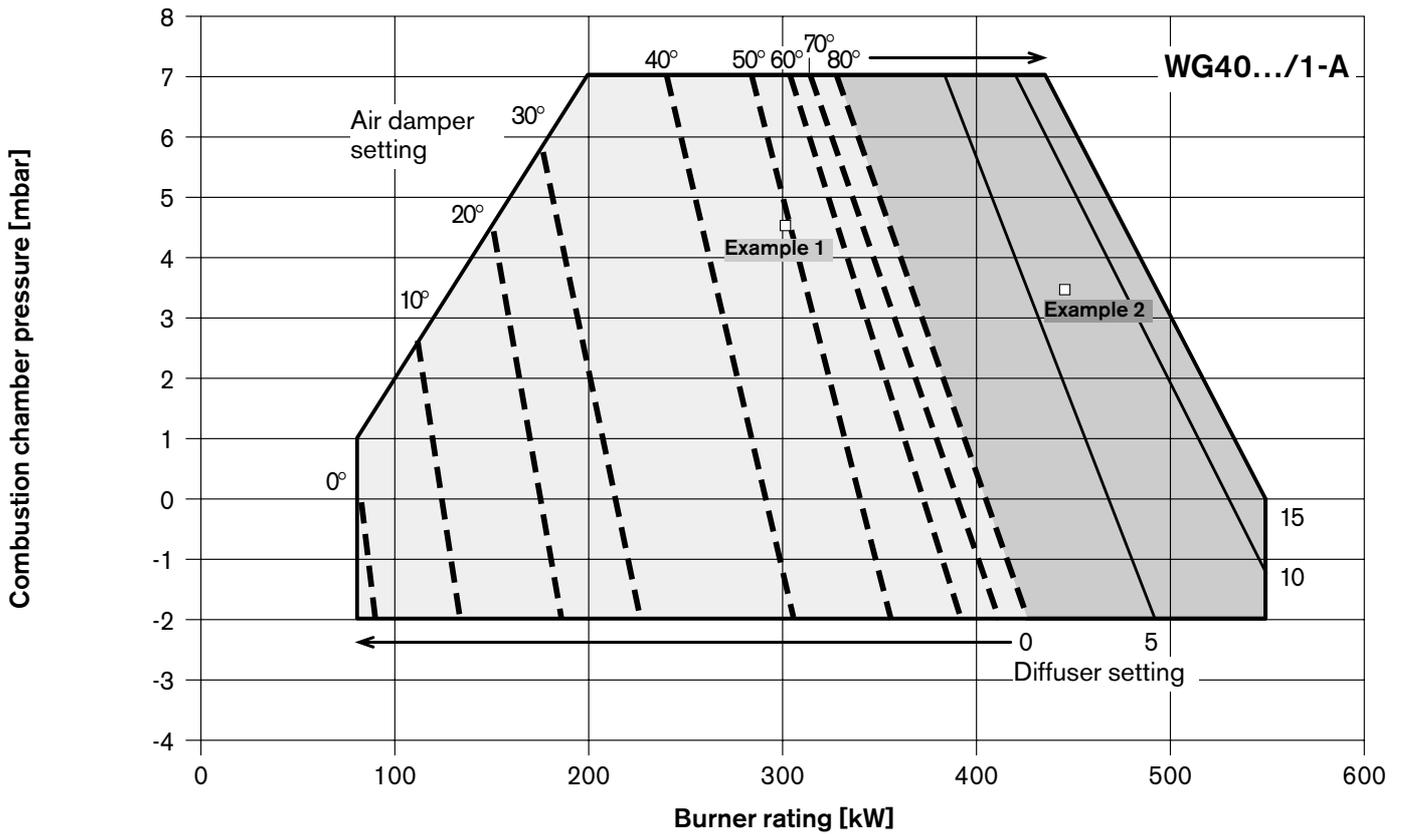
Setting indicator for diffuser setting



Setting diagram for pre-setting air damper - diffuser WG30



Setting diagram for pre-setting air damper - diffuser WG40



Example 1
 Burner rating _____ 300kW
 Combustion chamber pressure _____ 4.5 mbar
 gives: Diffuser setting _____ 0 mm
 Air damper opening angle _____ 49°

Example 2
 Burner rating _____ 440kW
 Combustion chamber pressure _____ 3.5mbar
 gives: Diffuser setting _____ 7 mm
 Air damper opening angle _____ 80°

The setting diagram is split into two sections:

- Diffuser setting 0
 - Air damper setting according to rating required

-
- Air damper opening angle 80°
 - Diffuser setting according to rating required —

These values have been calculated on test flame tubes to EN 676 under idealised atmospheric and combustion conditions. Variations may occur when setting for the operating conditions, depending on individual installations.

Note The total ratings range is divided up into 10 operating points (P0 - P9). Each operating point is defined by a particular set point of the gas butterfly valve and air damper.

*) bu ≙ lower operating point (corresponds to partial load)

Partial load

Lowest possible combustion rating of the heating appliance, which must not be less than the minimum load of the burner. Check with the appliance instructions to determine bu.

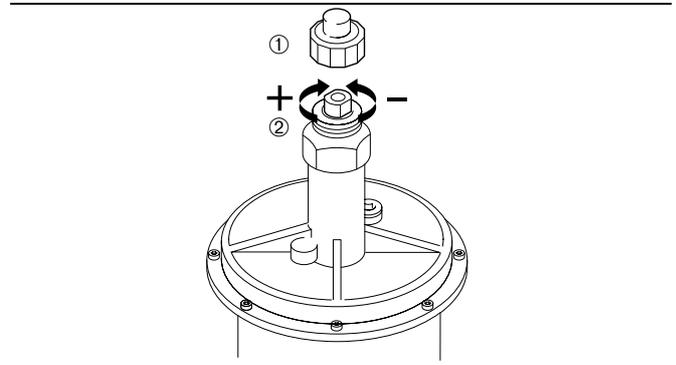
Description of the operating points	Factory pre-setting		
	Gas butt. valve	Air damper	
P0	Ignition load	11.0°	11.0°
P1	Minimum load	10.0°	10.0°
P2		Intermediate load points	are sectioned into equal steps by combustion manager
P3			
P4			
P5			
P6			
P7			
P8			
P9	Full load	80.0°	80.0°

Pre-setting the gas governor

1. Remove cap ①.
2. Turn spring ② completely to the left.
The spring is now at minimum setting.

To increase outlet pressure, turn screw clockwise.
To decrease outlet pressure, turn screw anticlockwise.

Gas governor



Action	Appliance's response	Display
Pre-setting on the combustion manager		
1. Unplug bridging plug 7 on the combustion manager.		
2. Connect voltage supply on the burner. Mains switch "ON"	Combustion manager goes to "Stand by" position.	
3. Press and simultaneously.	Combustion manager changes to setting mode.	
4. Press	Display shows factory pre-setting at full load P9.	
5. Hold down and by pressing or adjust the air damper setting (noted value from the diagram).		
6. Hold down and by pressing or set the gas butterfly valve to the same value.		
7. Press .	Display shows factory pre-setting at minimum load P1.	
8. Press to confirm pre-set value.	Display shows factory pre-setting at ignition load P0.	
9. Press to confirm pre-set value.	Burner is now ready for operation.	
Function test with ball valve closed		
<input type="checkbox"/> Thermostat circuit T1/T2 must be closed		
1. Briefly open ball valve and then close it again.		
2. Plug in bridging plug 7 on the combustion manager.	Burner starts in accordance with the sequence of operations. The gas pressure switch establishes that there is insufficient gas. The burner tries to restart. After two or three attempted starts, the combustion manager causes the burner to lockout due to the lack of gas (low gas program).	
Attention! Only proceed when the low gas program functions correctly.		
3. Remove and replace the 7-pole connection plug to interrupt the low gas program.		

Note Should a controlled shutdown of the burner occur whilst setting the burner, continue as follows:

1. Press and simultaneously.
2. Go to the last load point set by pressing

Record the values given on the display for every set point and their relevant ratings (gas throughput). This will assist you when setting partial load.



Danger of explosion!

CO formation due to incorrect burner setting. Check CO content at each operating point. If CO is detected, adjust combustion values. CO content should not exceed 50 ppm at this time.

Action	Appliance's response	Display
Commissioning		
1. Open the ball valve.		
2. Press  and  simultaneously.	Burner starts in accordance with the sequence of operations and runs to ignition load P0.	
3. Set setting pressure on the governor (value from the table + combustion chamber resistance)		
Adjust full load		
1. Press and hold  for 1 second.	Burner runs to P1	
2. By pressing  , slowly drive the burner to full load point P9. Monitor the CO values of flue gas at all the intermediate load points.		
If necessary adjust combustion values by pressing   or   .		
3. Carry out gas throughput measurements at full load (see appendix).		
4. Optimise the gas throughput by adjusting the gas pressure or gas butterfly valve. (Keep  pressed down and by pressing  or  adjust the gas butterfly valve setting)		
5. Keep  pressed down and optimise combustion by pressing  or  (see appendix). If the required rating can not be reached, see notes below.		
Adjust intermediate load points		
1. Press  .	Values for P9 are saved. Burner runs to P8.	
2. Keep  pressed down and optimise combustion values by pressing  or  .		
3. Press  .	Values for P8 are saved. Burner runs to P7.	
4. Set points P6 to P1 as for P8 above.		
5. Once P1 has been set, press  to save all values.	Burner runs to P2	

Problems when matching ratings?

The air damper and the gas butterfly valve can not be altered randomly in the individual operating points. If an exact rating can not be matched the diffuser setting will have to be corrected. If the rating is too high at diffuser setting 0, the pre-setting of P9 must be corrected:

1. Unplug bridging plug 7 on the combustion manager. Burner goes to the stand by position.
2. Continue as described in "Pre-setting on the combustion manager". Re-set air damper setting P9.

Action	Appliance's response	Display
Adjust ignition load		
1. Unplug bridging plug 7 from the combustion manager.	Burner switches off. Combustion manager runs to stand by position.	
2. Press and simultaneously.	Combustion manager changes to setting mode.	
3. Replace bridging plug 7.	Burner starts and remains in ignition position P0.	
4. Keep pressed down and by pressing or set the gas butterfly valve so that flue gas has an O ₂ value of 4 - 5%.		
Note The gas governor setting pressure must not be changed!		
5. Press and hold for 1 second to save values.	Burner runs to P1.	
Set partial load		
1. By pressing , slowly drive the burner to P9.		
2. Press and simultaneously.	Burner runs to partial load (bu).	
3. Keep pressed down and by pressing or set the value for partial load.		
Note: Pay attention to boiler manufacturers instructions.		
4. Press and simultaneously.	Values for partial load are saved. Combustion manager changes from setting mode to operating mode. The burner is set.	

Test start

1. Interrupt the power supply to the burner (e.g. unplug the 7 pole connection plug, wait for 2 or 3 seconds and then reconnect it).
2. Record all settings on the sticker included and affix it to the mixing chamber housing.

Burner

- starts in operating mode
- interrupts the start up
- carries out a valve proving test
- restarts
- drives to partial or full load

Setting the gas pressure switch

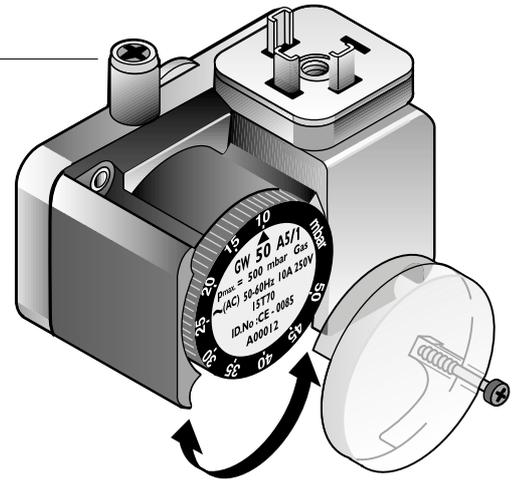
Factory pre-setting: 12 mbar.

The switching point must be checked/adjusted during commissioning

1. Connect a manometer to the test point between V1 and V2 on the DMV.
2. Operate burner (full load)
3. Gradually close the ball valve until the pressure decreases to half its value. Monitor the CO level and flame stability.
4. Slowly turn the setting cam of the gas pressure switch to the right until the combustion manager starts the low gas program. Minimum value: 12 mbar.
5. Open the ball valve.
6. Remove and replace the 7 pole connection plug. The burner must restart without the low gas program starting.

Gas pressure switch

Test point



Setting the air pressure switch

Factory pre-setting: 6 mbar.

The switching point must be checked/adjusted during commissioning. For this a differential pressure measurement between points ① and ② must be carried out:

1. Connect a manometer as shown in the illustration.
2. Start burner.
3. Drive through the setting range of the burner whilst monitoring the pressure at the pressure test unit.
4. Determine the value of the lowest differential pressure.
5. Set the dial to 80% of the lowest differential pressure.

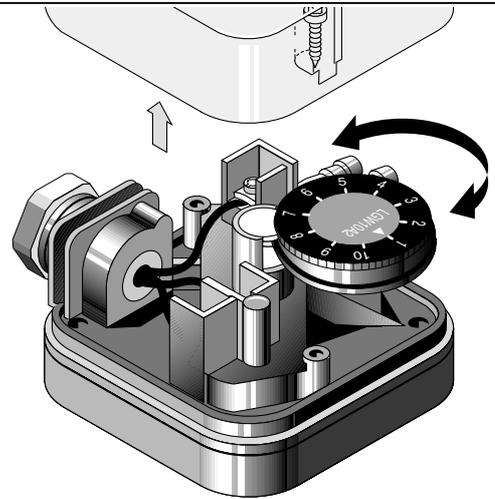
Example:

Lowest differential pressure: _____ 7.4 mbar

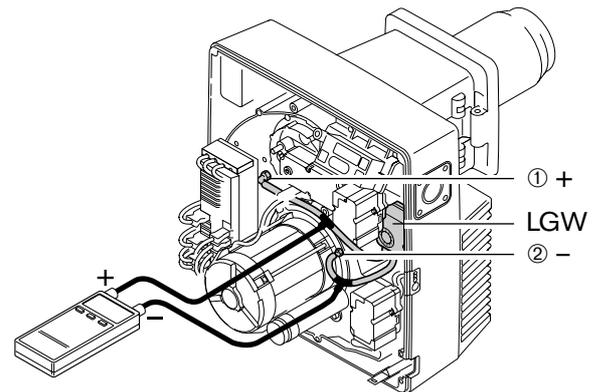
Air pressure switch switching point: _____ $7.4 \times 0.8 = 6.0$ mbar

Note Individual site influences, such as flue gas recirculation, heat exchanger, installation or air supply, may necessitate adjustments being made to the settings.

Air pressure switch



Differential pressure test



Test ionisation current

If a flame has formed, an ionisation current flows.

Response sensitivity of the flame sensor: _____ 1 μA
Minimum recommended ionisation current: _____ 5 μA

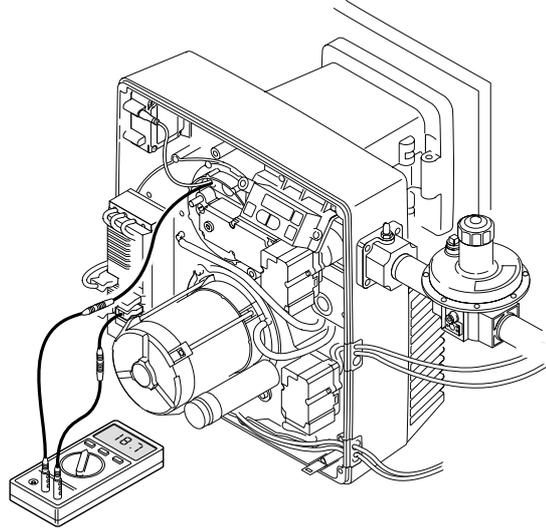
Test equipment:

Multiple test instrument or ammeter.

Connection:

A plug coupling fitted to the ionisation cable is used to connect the test equipment.

Test ionisation current



Subsequent correction of the settings

1. Burner runs in operating mode.
Unplug bridging plug 7 from the combustion manager.
The burner is in stand by position.
2. Press \ominus and \oplus simultaneously.
Combustion manager changes to the setting mode.
3. Plug in bridging plug 7.
Burner starts and remains at ignition point P0.
4. By pressing \ominus or \oplus drive to the individual operating points P1 - P9.
5. Record the new setting values on the sticker and stick it over the old one.

Note

If subsequent adjustment of the gas pressure setting or the diffuser setting is necessary, the whole burner commissioning (including pre-setting) must be repeated.

Concluding work

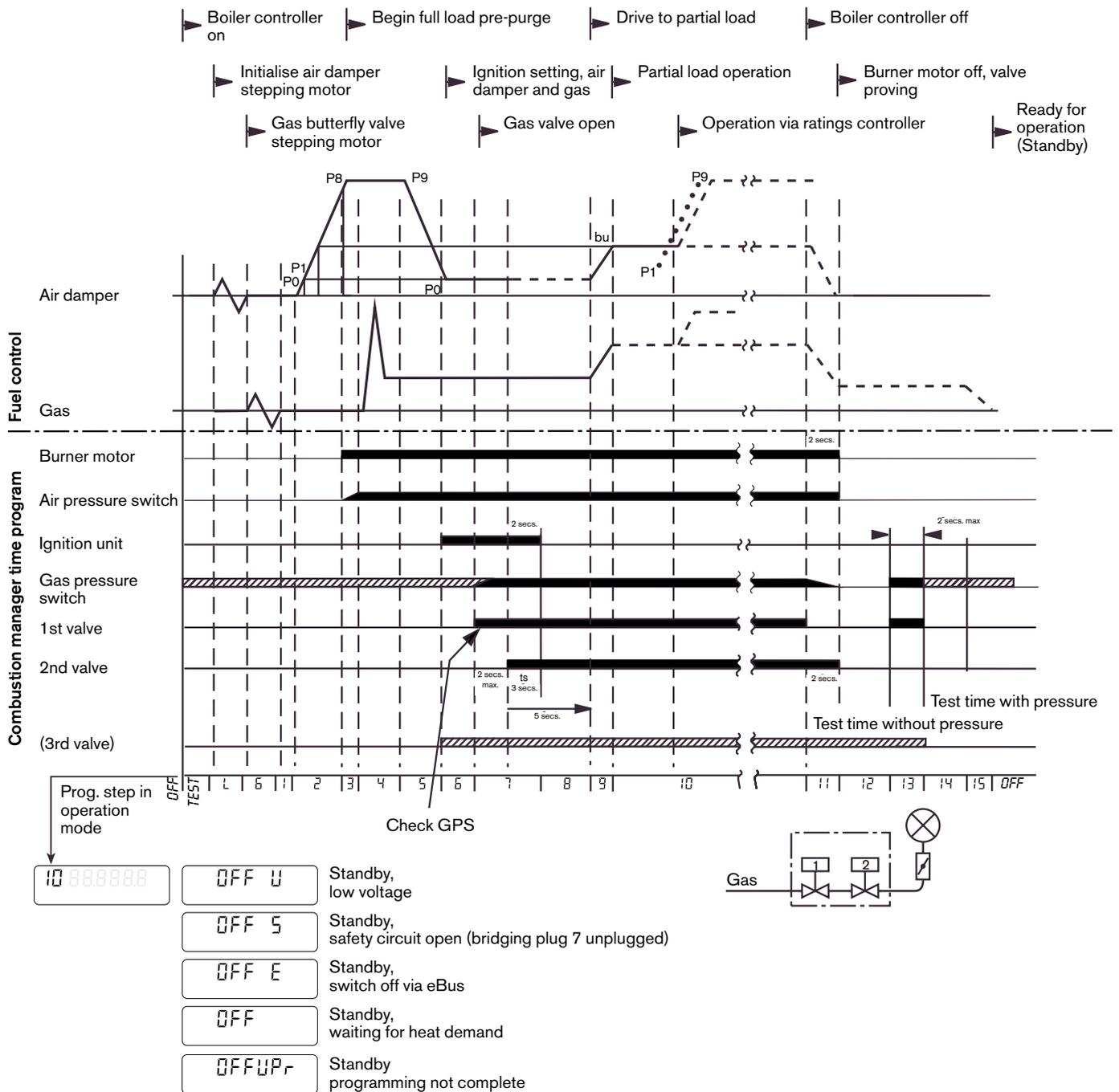
1. Record test results of the flue gas test on the inspection card.
2. Note values on sticker.
3. Remove test unit and fit burner cover.
4. Advise operator on use of equipment.

Sticker for burner settings

-weishaupt- Burner Setting		
Date:		
Diffuser setting:		mm
Gas setting pressure at full load:		mbar
Setting at Combustion Manager Air damper pre-setting at full load (P9)		
Point	G	L/A
P0		
P1		
P2		
P3		

5.4 Sequence of operation and diagram

Sequence of operation



Switch times

Start up waiting time (Test)	3 secs.
Pre-purge time	20 secs (adjustable by Weishaupt)
Safety time	3 secs.
Pre-ignition time	2 secs.
Stabilisation time	2 secs.
Post-purge time	2 secs.
Valve proving test time	16 secs. Phase 1 (1st valve) 8 secs. Phase 2 (2nd valve)
Stepping motor run time during operation	
complete setting movement	max. 40 secs.
reduced setting movement	min. 25 secs.

5.5 Display and operating modes

In addition to the setting mode, the combustion manager also has:

- Operating mode (see Ch. 5.4)
- Info mode
- Service mode
- Parameter mode
- Error messages

Info mode

The information mode can be selected at every stage of the burner sequence whilst it is in operating mode.

☞ Press  for about 0.5 seconds.

The display will show the relevant value next to an INFO No.

To call up the next information:

☞ Press  for about 0.2 seconds.

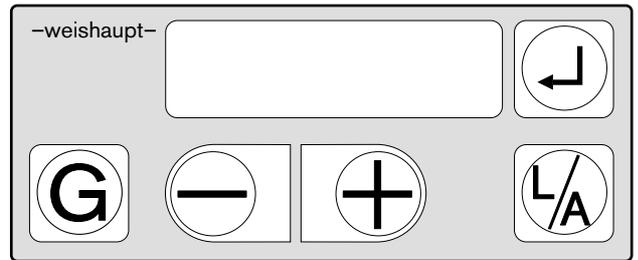


Example:
Fuel consumption:
72 m³

No.	Display value
0	Fuel consumption (calculated at impulse counter inlet)
1	Total number of hours run for the gas burner
2	Oil burners only
3	Number of burner settings carried out (burner starts)
4	Software No of combustion manager
5	Date of software
6	Unit No.
7	Test date of the unit
8	Current eBus address
9	Valve proving <i>ON / OFF</i>
10	Current eBus address regulator

After Info No. 10 or after a 20 second timeout, the unit returns to the operating mode display.

Display and operating panel



Service mode

The service mode can be selected at every stage of the burner sequence whilst it is in operating mode.

☞ Press  for about 2 seconds.

At first, the display will show  for about 1.5 secs., shortly afterwards the symbol  will appear.

To call up the next service information:

☞ Press  for about 0.2 seconds.



Example:
Gas butterfly valve setting at
operating point P0 11.4°,
air damper setting 12.1°

No.	Display value
0	Gas butterfly valve and air damper setting at P0
1	P1
2	P2
3	P3
4	P4
5	P5
6	P6
7	P7
8	P8
9	P9
10	last error (see also Ch. 6.5)
11	second to last error
12	third to last error
13	fourth to last error
14	fifth to last error
15	sixth to last error
16	Flame intensity: 00 no flame 01 flame signal weak →Check! 02 Flame signal weak →Check! 03 Flame signal optimum

After Service info No.16 or after a 20 second timeout, the unit returns to the operating mode display.

Parameter mode (For qualified personnel only)

This mode can be accessed only when the display shows *OFF*

1. Remove the burner cover.
2. Remove bridging plug 7.
Burner goes into standby, the display shows *OFF*
3. Press and simultaneously for about 2 secs. the display shows *Pnr.0 3*

To change the values:

- ☞ Press or .

To go to the next parameter:

- ☞ Press .



Example:
Post-purge time 28 secs.

No.	Value	
0	3	Note on parameter level (can not be altered)
1	03H, 13H, 33H, 73H, F3H	Detail of the eBUS address
2	0 to 25,5	Air damper setting in Standby Position in degree of angles 0...25.5°
4	0 to 240	Post-purge time in seconds
5	0 or 1	0 = no errors stored 1 = errors stored. To delete error memory: ☞ Press and hold and for 2 secs.
6	1 to 255	Factor for the determination of fuel consumption. Set according to the impulse rate of the counter Factory setting: 200 Impulse rate: Impulse of the counter per 1 m ³ (or low frequency output NF)
8	10H, 17H, 30H, 37H, 70H, 77H, F0H, F7H	eBus regulator address
9 ^①	0 to 100	Fan speed for continuous running fan in Standby mode
10 ^①	ON OFF	Selection of gas valve trains DMV-VEF (2 gas pressure switches) W-MF-VEF (1 gas pressure switch)
①		only on burners with speed control

After parameter No.8 or after a 20 second timeout, the unit returns to the operating mode display.

5.6 Shutdown periods

For short breaks in operation

(e.g. flue cleaning etc.):

- ☞ Isolate the burner from the power supply

Error messages

The combustion manager is equipped with an error messaging system. The function fault that triggered the lockout is displayed as an error code.

To reset the burner:

- ☞ Press (for remote reset button S2).



Example: Gas pressure switch did not change over
(Display flashes!)

No.	Error message
01...15	Internal unit fault (RAM / ROM test and time monitoring)
28...32	Internal unit fault (program modules)
70...79	Internal unit fault (low voltage and Pin short circuit tests etc.)
45...5C	Internal unit fault (calculation of characteristics values)
20	Air pressure switch contact not in off position at burner start
21	Air pressure switch contact has not changed over
22	Gas pressure switch contact has not changed over
25	No flame signal after safety time
26	Extraneous flame signal
27	Flame-signal loss during operation
42	Switched off by plug 7
43	Valve V1 leaking during valve proving or gas pressure switch does not drop
44	Valve V2 leaking during valve proving
50	Air stepping motor does not start reference point 0 correctly.
61	Gas stepping motor does not start reference point 0 correctly.
63	Run time of air motor has been exceeded.
64	Run time of gas butterfly valve motor has been exceeded.
65	Burner type not recognised at start.
66	Gas butterfly valve connection plug incorrect; air stepping motor or angle drive
67	General fault on stepping-motor control
68	Return signal of air damper stepping motor faulty.
69	Return signal of gas butterfly valve stepping motor faulty.
6A	Tolerance fault on air damper stepping motor.
6B	Tolerance fault on gas butterfly valve stepping motor.
6C	Step control of air damper stepping motor faulty.
6D	Step control of gas butterfly valve stepping motor faulty.
6E	Stepping motors mixed up
6F	Error during burner recognition or stepping motor plug not connected

For longer breaks in operation:

1. Isolate the burner from the power supply
2. Close all fuel cut-off devices.

6 Fault conditions and procedures for rectification

The burner is found out of operation, in lockout. The display flashes with an error code.

If faults occur first check that the basic requirements for correct operation are met.

- Is there a supply of electricity?
- Is the correct gas pressure available from the supply network and is the ball valve open?
- Are all regulating controls for room and boiler, water level interlocks, limit switches etc. set correctly?

If it has been established that the lockout is not due to any of the above, all the burner functions must be checked.

Reset: Press  (for remote reset button S2)



To avoid damage to the plant, do not reset the burner more than two times in a row. If the burner locks out for a third time call for a service engineer.



Fault conditions should be rectified only by qualified and experienced personnel.

Note

The following table provides only a summary of possible faults. For further error codes see Ch. 5.5.

Condition	Cause	Remedy
Blank display Burner not operating	No electric supply	Check electrical supply and fusing
	Faulty fuse	Replace fuse (10 A slow)
	Limiter from L1 on 7-pole plug has switched off	Reset limiter
Voltage present at inlet L1 on 7 pole plug, but display blank	MP short circuited	Repair short circuit
	7-pole plug connection to combustion manager plugged in incorrectly	Rectify fault
	Combustion manager defective	Replace combustion manager
Burner is operating but display is blank	Faulty connection plug on combustion manager	Rectify fault
	Faulty display	Replace operating panel
Display permanently shows OFF	Control circuit not closed	Check why the controller is open between T1/T2 on the 7-pole connection plug.
	7- pole connection plug not fitted correctly	Check plug connection
* Display shows <i>OFFUPr</i>	Programming not complete	Stop programming
Burner motor Burner motor no longer runs. Error message: <i>F 21H</i>	Capacitor defective	Check capacitor and replace if necessary
	Burner motor defective	Check burner motor and replace if necessary (see Ch. 7.7)
Burner motor will not start. Display shows <i>2</i> for 30 secs, then restarts. After 5 restarts display shows error message: <i>F 20H</i>	Air pressure switch remains closed	Replace air pressure switch
Burner motor runs continuously, Lockout Error message: <i>F 20H</i>	Motor relays defective	Replace motor relays
	Combustion manager defective	Replace combustion manager (see Ch. 7.14)

7 Servicing

7.1 Safety notes on servicing



Failure to carry out maintenance and service work properly can have severe consequences, including the loss of life. Pay close attention to the following safety notes.

Qualified personnel

Maintenance and servicing must be carried out only by qualified and experienced personnel.

Before all maintenance and service work:

1. Electrically isolate the equipment
2. Close the ball valve
3. Remove the 7-pole connection plug from the boiler controller

After all maintenance and service work:

1. Function test.
2. Check flue gas losses as well as CO₂, O₂ and CO values
3. Complete a test sheet.

Endangering operational safety

Maintenance work on the following parts may only be carried out by the manufacturer or their appointed agent on the individual components.

- Air damper stepping motor
- Gas butterfly valve stepping motor
- Flame sensor
- Combustion manager with operating panel /display unit
- Gas pressure switch
- Air pressure switch

Risk of explosion due to a gas leak

Take care when dismantling and assembling parts in the gas line to ensure they are correctly aligned, clean and in good condition, and that the fixing screws are correctly tightened.



Danger of getting burnt!

Some burner parts (e.g. flame tube, burner flange, electrodes, etc.) become hot during burner operation and should be allowed to cool prior to service work being carried out.

7.2 Servicing plan

Service interval

The operator should ensure that gas fired plant is serviced at least

- once a year -

by an agent of the supplier or other suitably qualified person.

Test and clean

- Fan wheel and air inlet (see Ch. 7.6)
- Ignition equipment (see Ch. 7.5)
- Combustion head and diffuser (see Ch. 7.4)
- Filter insert (see Ch. 7.13)
- Air damper (see Ch. 7.6)
- Stepping motor / connection (see Ch. 7.8 and Ch. 7.10)
- Flame sensor

Function test

- Operation of the burner with the sequence of operation (see Ch. 5.4)
- Ignition equipment
- Air pressure switch
- Gas pressure switch
- Flame monitoring
- Valve proving of the gas train (see Ch. 4.6)
- Purge valve train (when replacing, see Ch. 5.2)

7.3 Mixing head - removing and refitting

Removing

1. Remove the flame sensor or ionisation line ③.
2. Remove the ignition cable ① from the ignition transformer.
3. Loosen screws ④.
4. With a slight twist, pull the mixing head ② out from the housing.

Refitting

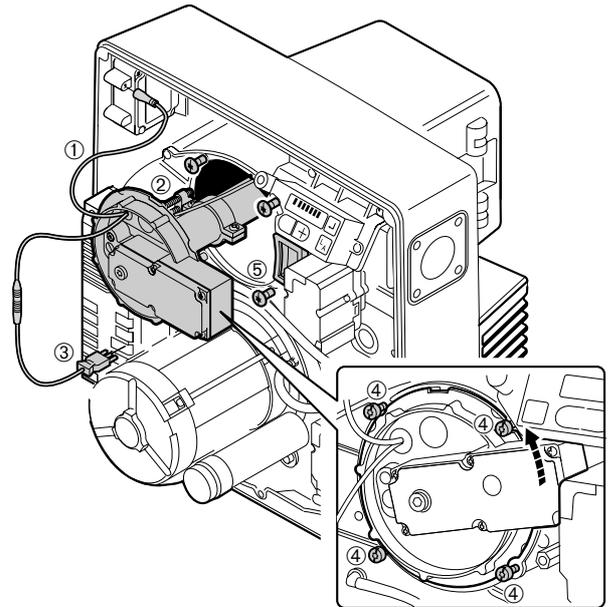


Danger of explosion!

Misalignment of the seal ⑤ can result in a gas leak during burner operation. When refitting the mixing head ensure the seal is clean and aligned correctly. Replace it if necessary. When commissioning the burner check the seal is sound with a leak detection spray.

To refit, reassemble in the reverse order.

Removing and refitting the mixing head



- | | |
|------------------|--------------------|
| ① Ignition cable | ④ Combi-Torx screw |
| ② Mixing head | ⑤ Seal |
| ③ Flame sensor | |

7.4 Mixing head setting

The distance between the diffuser disc and the edge of the flame tube (dimension S1) cannot be measured whilst it is mounted. To check, remove the mixing head and measure dimension L.

1. Remove the mixing head (see Ch. 7.3.)
2. Turn the setting screw ② until the setting indicator ① is level with the mixing chamber housing (scale setting "0" or dim. X = 0 mm).
3. After setting dimension L, fix the collar ④ with the lock nuts ③.

Setting dimensions WG30:

Dimension X	_____	0 mm
Dimension L	_____	400 mm
Dimension S1	_____	20 mm

Setting dimensions WG40:

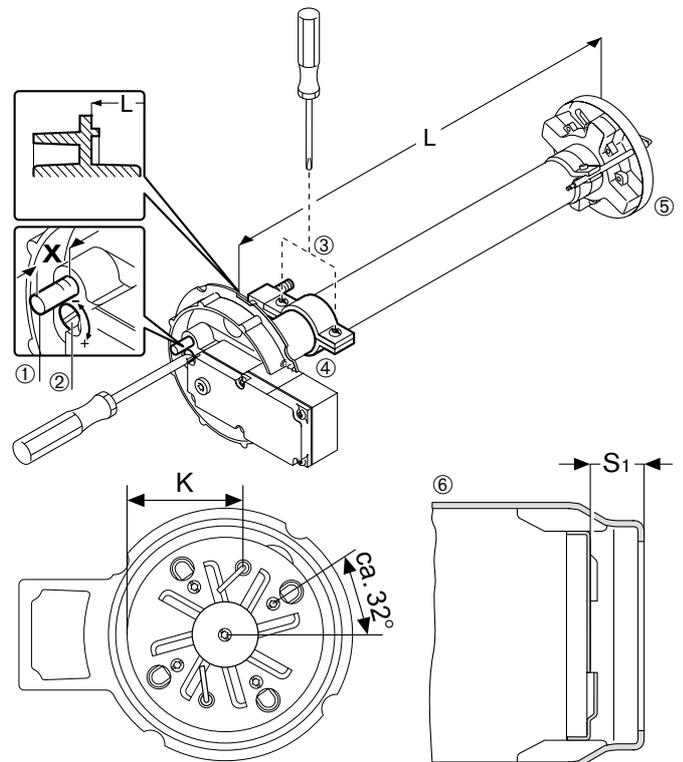
Dimension X	_____	0 mm
Dimension L	_____	508 mm
Dimension S1	_____	25 mm

Note After loosening the lock nuts the position of the electrodes and the gas drillings must be checked (control dimension K).

Control dimension K

WG30	_____	63 mm
WG40	_____	70 mm

Setting the mixing head

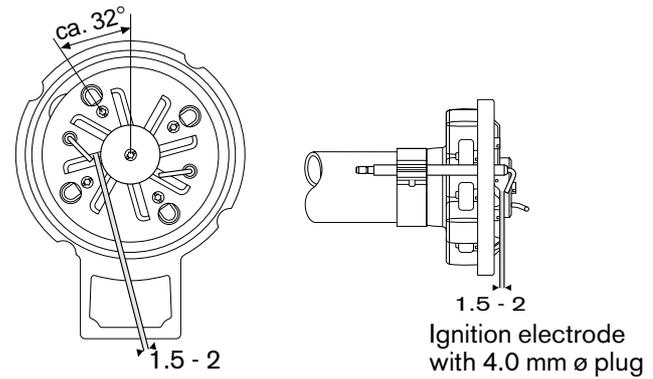


- | | |
|---------------------|--------------|
| ① Setting indicator | ④ Collar |
| ② Setting screw | ⑤ Diffuser |
| ③ Lock nuts | ⑥ Flame tube |

7.5 Ignition electrode setting

- ☞ Remove the mixing head (see Ch. 7.3.)
For setting dimensions see illustration.

Ignition electrode setting dimensions



7.6 Servicing position for fan housing cover

The servicing position of the fan housing cover permits:

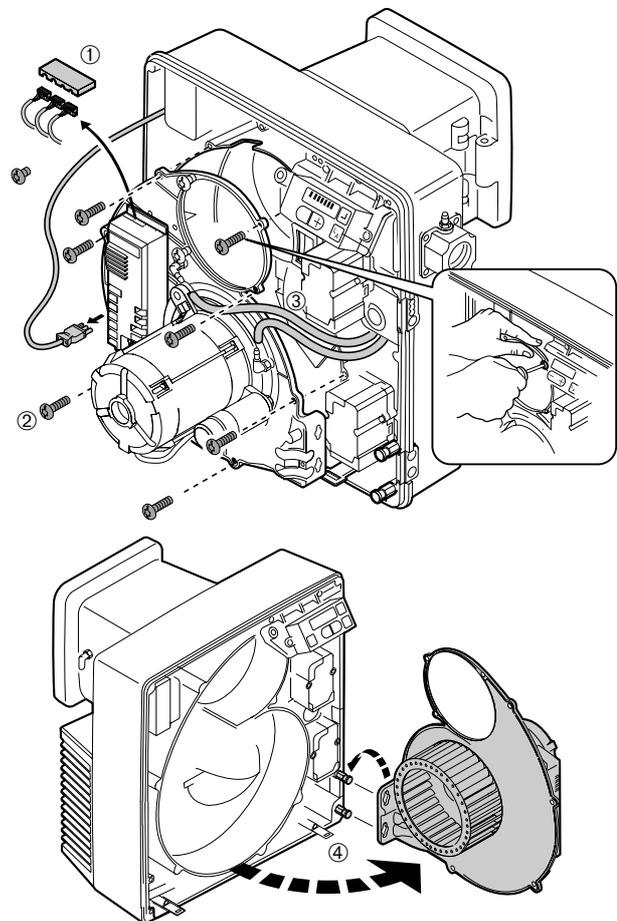
- Cleaning of the air channel and fan wheel
- Access to the air damper
- The fitting and removal of the fan motor

Note If the burner has been mounted rotated through 180° it is not possible to put the fan housing cover in the servicing position.

1. Remove the mixing head (see Ch. 7.3.)
2. Disconnect plug No. 4 (ignition transformer).
3. Remove the cover ① and disconnect all the plugs.
4. Remove the connecting hose ③
5. Hold the fan housing cover in place and loosen the screws ②.
6. Hang the fan housing cover on the support ④.

Reassemble the fan housing cover in reverse order.

Servicing position of the fan housing cover.



- | | |
|--------------------|--------------------|
| ① Cover | ③ Connecting hoses |
| ② Combi-Torx screw | ④ Support |

7.7 Fan wheel and motor - removing and refitting

Removing

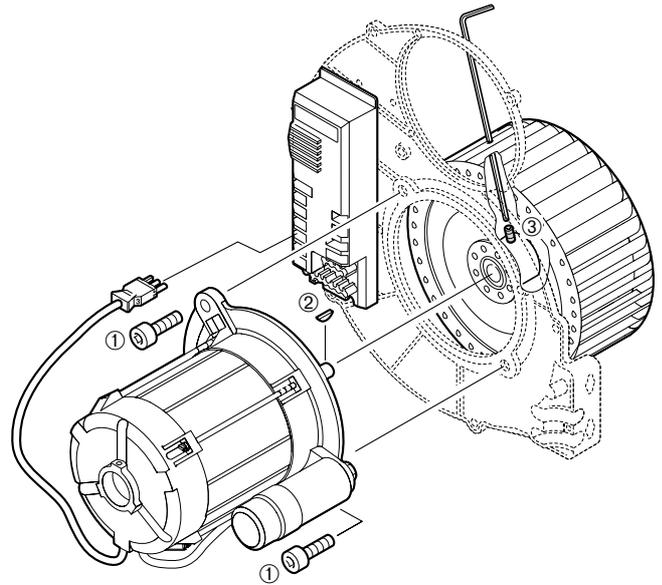
1. Put the fan housing in the servicing position (see Ch. 7.6.)
2. Loosen the threaded pin ③.
3. Remove the fan wheel.
4. Remove plug No. 3.
5. Holding the motor in place, loosen the screws ①.
6. Remove the motor from the housing.

Refitting

Reassemble in the reverse order.

- ☞ Pay attention to the adjusting key ②.
- ☞ Turn the fan wheel by hand to check freedom of movement.

Removing and refitting the fan wheel and motor



- ① Allen screw
- ② Adjusting key
- ③ Threaded pin

7.8 Air damper stepping motor - removing and refitting

Removing

1. Remove the plug ⑤ from the stepping motor
2. Loosen the screws ①.
3. Remove the stepping motor with the fixing plate ② and the shaft ③. The air damper will open due to the spring relaxing.

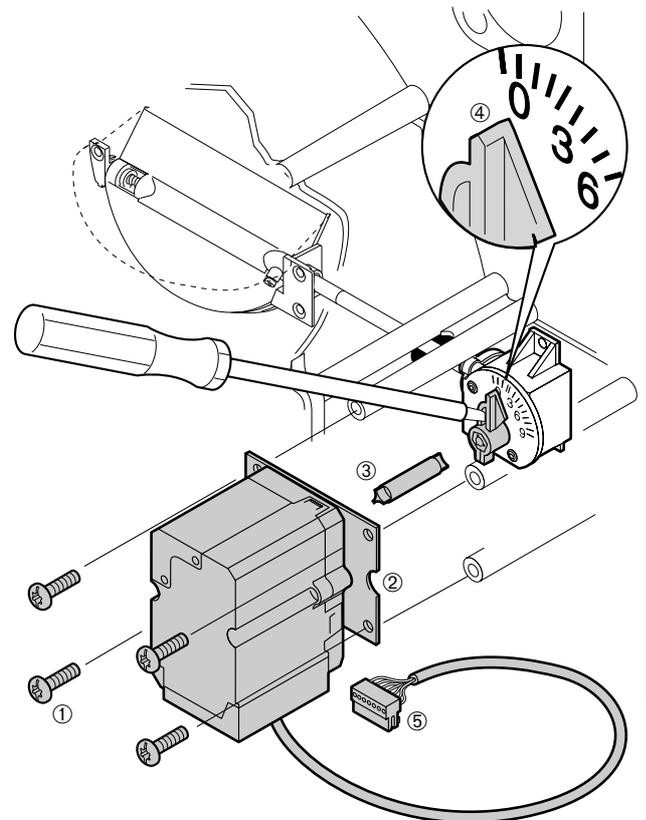
Refitting



Damage to the stepping motor!
Do not turn the hub of the stepping motor, either by hand or with a tool.

1. Removing bridging plug No. 7.
2. Connect plug ⑤ to the combustion manager.
3. Switch the burner on.
The combustion manager tests the stepping motor and drives to the reference point.
4. Switch the burner off and isolate.
5. Insert the shaft ③ into the stepping motor.
6. Using a screwdriver in the groove on the indicator ④, set the indicator on the angle drive to "0" and hold it in this position.
7. Insert the shaft into the star-shaped groove in the indicator.
8. Fix the stepping motor.
9. Replace bridging plug No. 7.

Removing and refitting the air damper stepping motor



- ① Combi-Torx screw
- ② Fixing plate
- ③ Shaft
- ④ Indicator
- ⑤ Plug

7.9 Air damper angle drive - removing and refitting

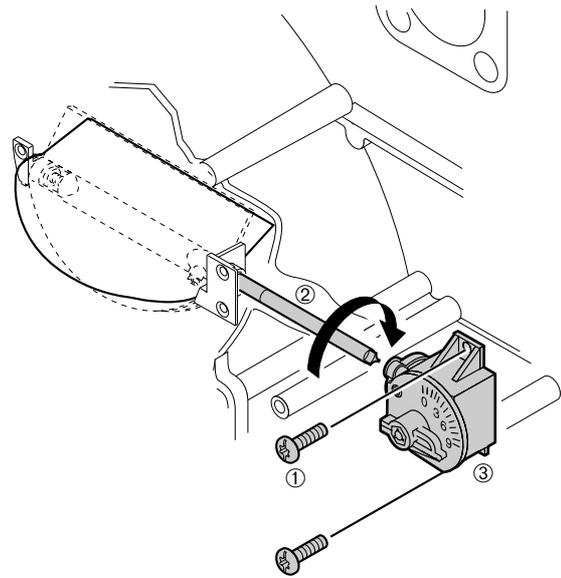
Removing

1. Remove the air damper stepping motor (see Ch. 7.8)
2. Loosen the screws ①.
3. Remove the angle drive ③.

Refitting

1. Turn the air damper shaft ② clockwise as far as it will go and hold in that position.
2. Attach the angle drive, inserting the shaft into the star-shaped groove.
3. Replace and tighten screws ①.

Removing and refitting the angle drive



- ① Combi-Torx screw
- ② Shaft
- ③ Angle drive

7.10 Gas butterfly valve stepping motor - removing and refitting

Removing

1. Remove the plug ① from the combustion manager
2. Loosen the screws ②
3. Remove the stepping motor.

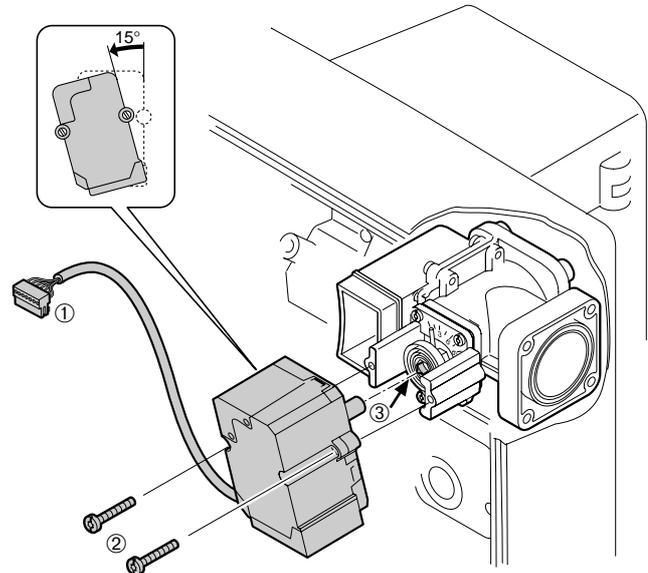
Refitting



Damage to the stepping motor!
Do not turn the hub of the stepping motor, either by hand or with a tool.

1. Remove bridging plug No. 7.
2. Connect plug ① to the combustion manager.
3. Switch the burner on.
The combustion manager tests the stepping motor and drives to the reference point.
4. Switch the burner off and isolate.
5. Fit the stepping motor angled about 15° to the left, thus inserting the shaft ③ into the star-shaped groove.
6. Replace and tighten screws ②.
7. Replace bridging plug No. 7.

Removing and refitting the gas butterfly valve stepping motor



- ① Plug
- ② Combi-Torx screw
- ③ Shaft

7.11 DMV solenoid - removing and refitting

Removing

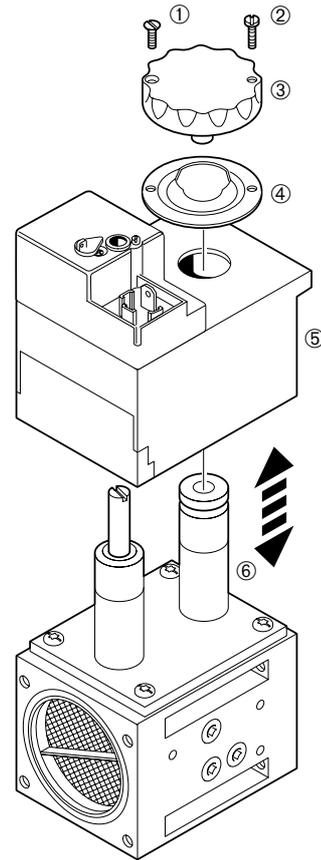
1. Remove paint seal from the counter-sunk screw ① and loosen.
2. Loosen cheese head screw ②.
3. Remove the cap ③, metal plate ④ and housing ⑤.
4. Replace the solenoid ⑥, checking new unit is the correct type/voltage

Refitting

Reassemble in the reverse order, ensuring to:

- ☞ Carry out a soundness test at the test point between V1 and V2: $p_{\min} = 100 - 150 \text{ mbar}$ (see Ch. 4.6)
- ☞ Carry out function test.

Changing the DMV solenoid



- | | |
|----------------------|---------------|
| ① Counter-sunk screw | ④ Metal plate |
| ② Cheese head screw | ⑤ Housing |
| ③ Cap | ⑥ Solenoid |

7.12 Gas pressure governor spring - removing and refitting

Removing

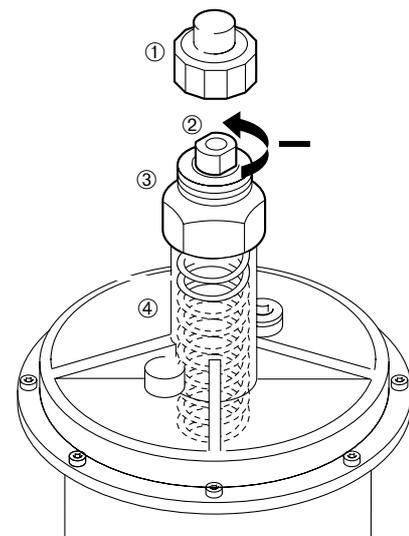
1. Remove protective cap ①.
2. Relax the spring by turning the setting spindle ② anticlockwise.
Turn the spindle as far as it will go.
3. Unscrew the spring retainer ③.
4. Remove the spring ④.

Refitting

Reassemble in the reverse order.

- ☞ A range label for the new spring must be affixed.

Removing and refitting the pressure governor spring



- | | |
|-------------------|-------------------|
| ① Protective cap | ③ Spring retainer |
| ② Setting spindle | ④ Spring |

7.13 Gas filter insert - removing and refitting

Removing

1. Loosen screws ①.
2. Remove cover ②.
3. Take out the filter insert ③.
4. Check the O-Ring ④ in the cover and replace if necessary.

Note Cleaning of the filter insert is possible by washing with water (max. 40° C), blowing out, knocking out or vacuuming out.



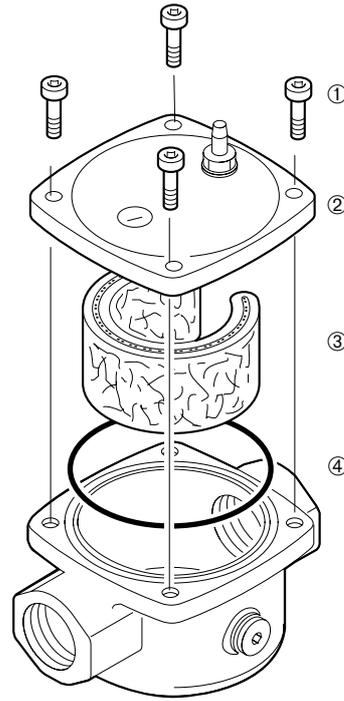
Fire Hazard!

Do not clean out the filter housing with a vacuum cleaner. Any gas remaining in the valve train could be sucked out and ignited.

Refitting

1. Carefully place filter insert into the filter housing.
2. Replace O-Ring if necessary
3. Replace cover
4. Replace and tighten screws
5. Carry out a soundness test (see Ch. 4.6.)
6. Purge valve train (see Ch. 5.6.)

Removing and refitting gas filter insert.



- | | |
|---------------------|-----------------|
| ① Socket head screw | ③ Filter insert |
| ② Cover | ④ O-ring |

7.14 Combustion manager - removing and refitting

Removing

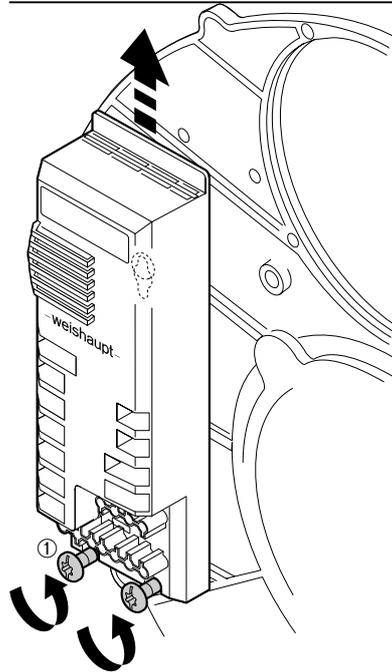
1. Disconnect all the plugs.
2. Loosen the screws ①.
3. Slide the combustion manager upwards and remove it from the housing.

Refitting

Reassemble in the reverse order.

Note If the combustion manager is changed, the burner has to be re-adjusted. When adjusting, take the figure for the full load air damper opening angle from the old label. In this way the set points of the intermediate load points will be the same as previously.

Removing and refitting the combustion manager



- ① Combi-Torx screw T20

- weishaupt - Burner Setting		
Date:		
Diffuser setting:		mm
Gas setting pressure at full load:		mbar
Setting at Combustion Manager Air damper pre-setting at full load (P9)		
Point	G	L/A
P0		
P1		



On WG40 burners the exchange of combustion manager W-FM20 V.1.x by combustion manager WFM20 can only be done if flame monitoring is converted to ionisation electrode.

8 Technical data

8.1 Burner equipment

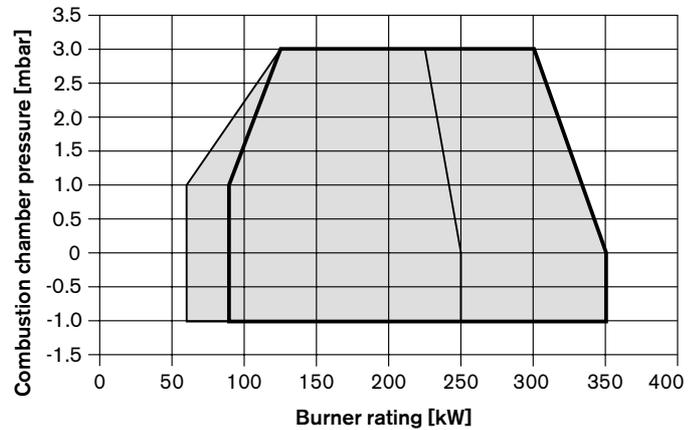
Burner type	Combustion manager	Motor	Stepping mot. air/gas	Ignition unit	Gas pressure switch	Air pressure switch	Display	Flame sensor
WG30.../1-C vers. ZM-LN	W-FM20	ECK05/F-2 230V, 50Hz 2880'/min 0.42kW, 2.6A Cond. 12µF	STE 4.5 BO.36/6-01L	W-ZG 01	GW50 A5/1	LGW 10 A2	AM20.02	Ionisation
WG40.../1-A vers. ZM-LN	W-FM20	ECK 06/F-2 230V, 50Hz 2900'/min 0.62kW, 4.0A Cond. 16µF	STE 4.5 BO.36/6-01L	W-ZG01	GW50 A5/1	LGW 10 A2	AM20.02	Ionisation

8.2 Capacity graph

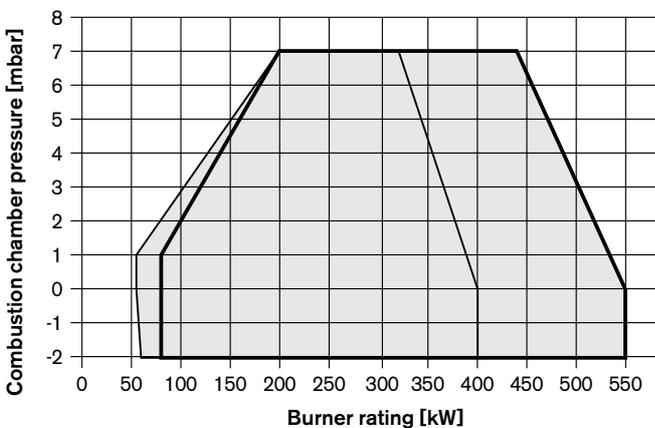
Burner type WG30N/1-C, vers. ZM-LN
Combustion head WG30/1-LN
Rating 40 to 350 kW



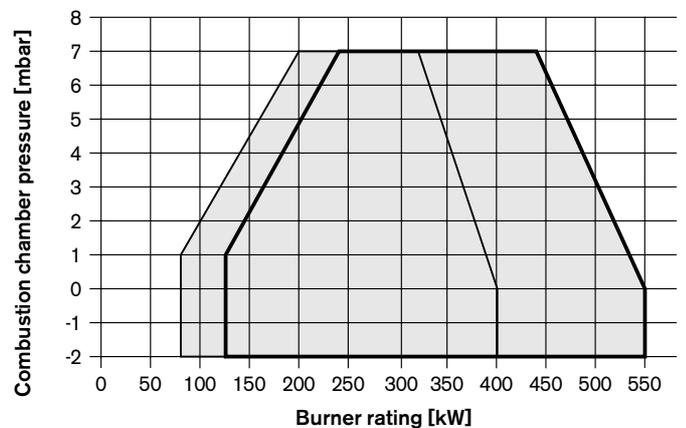
Burner type WG30F/1-C, vers. ZM-LN
Combustion head WG30/1-LN
Rating 60 to 350 kW



Burner type WG40N/1-A, vers. ZM-LN
Combustion head WG40/1-LN
Rating 55 to 550 kW



Burner type WG40F/1-A vers. ZM-LN
Combustion head WG40/1-LN
Rating 80 to 550

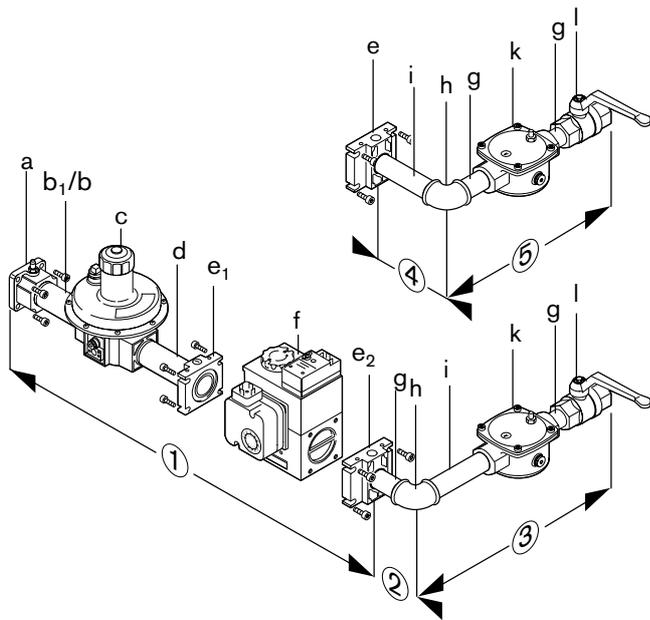


The capacity graph is in accordance with EN676. There is a rating reduction dependent on the altitude of the installation: approx. 1% per 100 m above sea level.

Mixing head "Open" ———
 Mixing head "Closed" ———

Valve trains

Valve train diameter 1/2" to 2"



- a Valve train flange
- b Double nipple
- b₁ Nipple
- c Governor
- d Double nipple
- e₁ DMV flange
- e₂ DMV flange
- f DMV
- g Double nipple
- h Elbow
- i Double nipple
- k Filter
- l Ball valve

Valve train (approx. dimension in mm)

R		①	②	③	④	⑤
1/2"	=	340	80	310	130	260
3/4"	=	425	55	330	100	280
1"	=	472	55	370	100	320
1 1/2"	=	498	90	520	135	470
2"	=	532	95	590	175	510

Note

For DN65 and DN80 valve trains the parts are delivered loose. For dimensions see the technical worksheets

Valve trains R	Valve train parts						
	a	b ₁	b	c	d	e ₁	e ₂
1/2"	1 1/2"	1 1/2" x 3/4"	3/4" x 50	FRS 507	1/2" x 50	507-1/2"	507-1/2"
3/4"	1 1/2"	1 1/2" x 3/4"	3/4" x 80	FRS 507	3/4" x 80	507-3/4"	507-3/4"
1"	1 1/2"	1 1/2" x 1"	1" x 80	FRS 510	1" x 80	512-1"	512-1"
1 1/2"	1 1/2"	—	1 1/2" x 80	FRS 515	1 1/2" x 80	520-1 1/2" *	520-1 1/2" *
2"	1 1/2"	2" x 1 1/2"	1 1/2" x 80	FRS 520	2" x 80	520-2"	520-2"

Valve trains R	Valve train parts					
	f	g	h	i	k	l
1/2"	507/11	1/2" x 50	1/2"	1/2" x 100	WF 505/1	1/2"
3/4"	507/11	3/4" x 50	3/4"	3/4" x 100	WF 507/1	3/4"
1"	512/11	1" x 50	1"	1" x 100	WF 510/1	1"
1 1/2"	*	1 1/2" x 80	1 1/2"	1 1/2" x 120	WF 515/1	1 1/2"
2"	520/11	2" x 80	2"	2" x 160	WF 520/1	2"

* WG30: DMV 512/11

WG40: DMV 520/11

8.7 Weights

Burner WG30	approx. 28 kg	Valve trains (1/2")	approx. 4.0 kg
Burner WG40	approx. 35 kg	(3/4")	approx. 5.5 kg
Fan housing cover with motor (servicing position)	approx. 13.6 kg	(1")	approx. 9.0 kg
		(1 1/2")	approx. 13.5 kg
		(2")	approx. 17.5 kg
		DN65 and DN80	see technical work sheets.

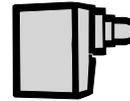
Weishaupt products and service

Max Weishaupt GmbH
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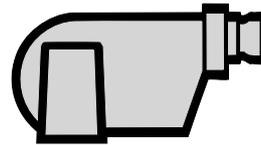
Oil, gas and dual fuel burners types W and WG/WGL up to 570 kW

They are used mainly in houses and small buildings.
Advantages: fully automatic, reliable operation, individual
components easily accessible, easy to service, quiet operation.



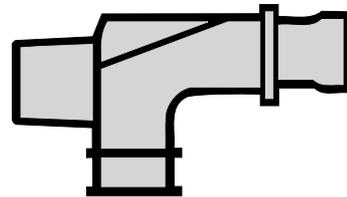
Oil, gas and dual fuel burners types Monarch R, G, GL, RGL – up to 10.900 kW

These are used on all types and sizes of central heating
plant. The basic model which has proved successful over
many years is the basis for a variety of versions. These
burners have founded the outstanding reputation of
Weishaupt products.



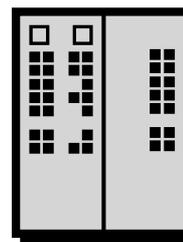
Oil, gas and dual fuel burners types WK – up to 17.500 kW

WK types are decidedly industrial burners.
Advantages: Built to the modular system, load dependent
variable combustion head, sliding two stage or modulating
operation, easy to service.



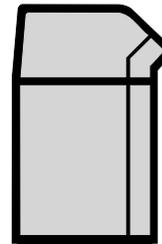
Weishaupt control panels, the proven complement to Weishaupt burners

Weishaupt burners and Weishaupt control panels form
the ideal unit, a combination which has already proved
successful in hundreds of thousands of combustion
installations. The advantages: Cost saving during planning,
installation, servicing and guarantee work. The responsibility
belongs to one manufacturer.



Weishaupt Thermo Unit / Weishaupt Thermo Gas.

These Units combine the technical innovations and operating
efficiencies developed from over 1 million installations.
Weishaupt Thermo Gas and Weishaupt Thermo Unit
provide the ideals of complete heating centres for houses
and apartments.



Product and service are the complete Weishaupt achievement

An extensive service organisation guarantees Weishaupt
customers the greatest possible reliability. In addition
our customers are looked after by heating firms who have
been working with Weishaupt for many years.

