–weishaupt–

product

Information on gas burners

Power and precision

Weishaupt monarch® gas burner, WM-G20 (250 – 2600 kW)

Progress and tradition:
The new monarch® gas burner

For more than 50 years the monarch® trademark has stood for power and quality

For more than five decades Weishaupt's monarch® series burners have been used on a wide variety of heat exchangers and industrial plant, forming the basis of Weishaupt's outstanding reputation.

This successful series is now continued by the new WM-G20 gas burner. Ultra-modern technology in conjunction with a compact construction make this powerful burner universally employable.

Digital.

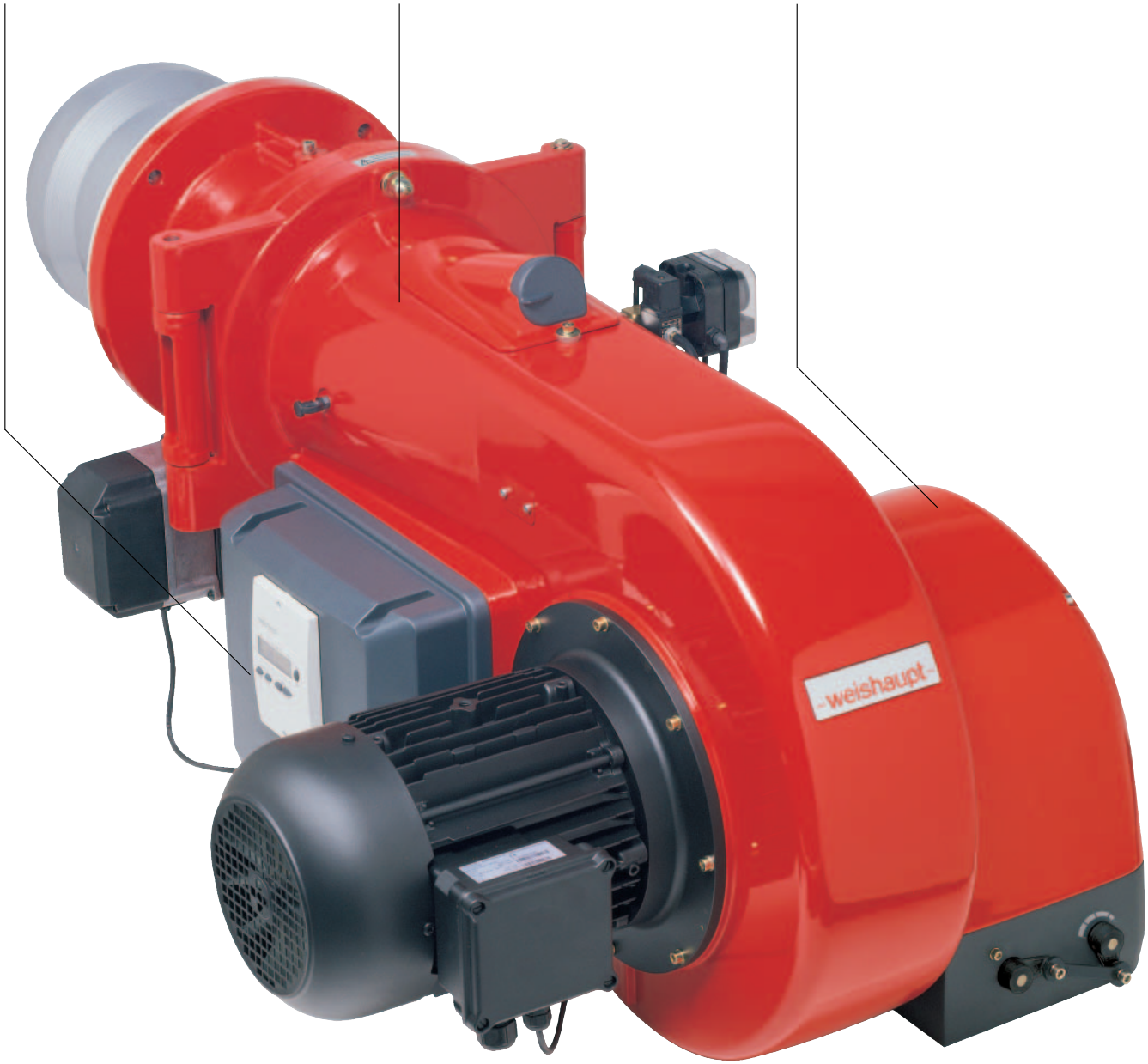
Digital combustion management for economical and safe burner operation. The controls are easy to use.

Compact.

The aerodynamic housing and special air feed enable a higher capacity within smaller dimensions.

Quiet.

The new monarch burners operate with considerably reduced noise levels, thanks to the newly developed fan unit.



Digital

Digital combustion management means optimal combustion figures, continually reproducible setting figures and ease of use.

Weishaupt WM-G20 gas burners are equipped as standard with electronic compound regulation and digital combustion management. Modern combustion technologies demand a precise, continually reproducible dosing of fuel and combustion air. Only in this way can optimal combustion figures be ensured over extended periods.

Simple operation
Setting and control of the burner is achieved using a control and display unit. The CDU is linked to the combustion manager via a bus system, enabling the user friendly setting of the burner.

Flexible communication possibilities
The integral interface enables all necessary information and functions to be relayed to a superordinate control system. If required, a modem enables a telephone connection to be installed for remote operation, monitoring and diagnosis.

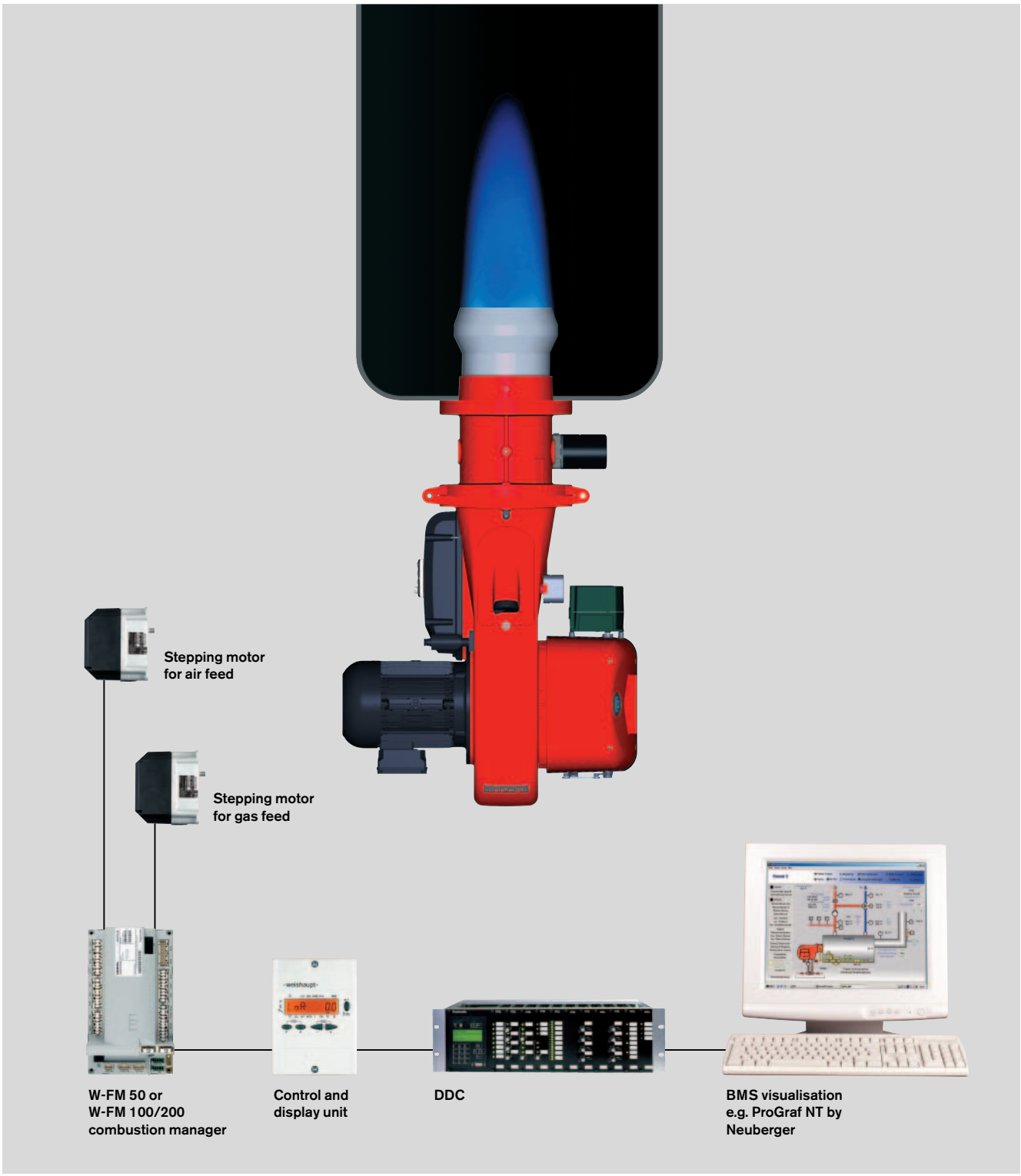
Communication with external systems via bus
Several bus systems are availabe via the E-Gate if data from the burners are to be exchanged with a PLC unit, or if the burners are to be integrated into a building management system. For the control and management levels Weishaupt offers ProGraf NT, a real time software product to meet any and all requirements.

New technology advantages
Digitial combustion management makes burner operation simple and safe. The most important advantages:

- No additional burner controls are necessary as control is effected by the combustion manager. The only additional requirements are control and motor fuses (by others).
- Reduced installation expense: Each burner is tested and supplied by the factory as a complete unit.
- Commissioning and service work takes less time. The burner's basic parameters are set at the factory. Adjustment to site conditions and combustion emission checks are effected via the combustion manager's menu controlled commissioning program.

System overview Digital combustion management	W-FM 50	W-FM 100	W-FM 200
Combustion manager for intermittent operation	●	●	●
Combustion manager for continuous operation		●	●
Flame sensor for intermittent operation	ION/QRC/QRB	ION/QRI/QRB	ION/QRI/QRB
Flame sensor for continuous operation		ION/QRI	ION/QRI
Servomotors in electronic compound (max.)	2	4	6
Servomotors with stepping motors	●	●	●
Peed control available	●		●
O_2 trim available			●
Single fuel operation	●	●	●
Dual fuel operation		●	●
Gas valve proving	●	●	●
Integrated self setting PID controller for temperature or pressure		Optional	●
Removable control unit (max. distance)	20 m	100 m	100 m
Fuel consumption meter	●[1)]		●
Display of combustion efficiency			●
eBUS / Modbus interface	●	●	●
PC supported commissioning	●	●	●

[1)] Not with speed control



Example with W-FM 50

Compact and quiet

The newly developed WM-G20 Weishaupt monarch® burner is compact, powerful and quiet. It is continuing the successful 50 year history of the legendary monarch® series.

Futurisitc fan technology
The special housing design with the self opening air inlet, together with the new fan technology, results in increased fan pressure and thus more capacity from a more compact form.

nnovative air damper control
The newly developed air damper control provides a high degree of linearity over the entire operating range

Reduced noise emissions
Right from the earliest developmental stages of this new burner generation, particular emphasis was placed on low operational noise levels.

Compared to similiar monarch® burners, a reduction in noise pressure levels of up to 8 dB(A), has been measured*. That equates to a sone (unit of percieved loudness) reduction of about 30%.

The use of an additional sound absorber is generally not required, as in most cases levels are below 80 dB(A).

Fast commissioning, simple servicing
All WM-G20 burners are delivered with the mixing assembly preset for the required output of the burner. A final adjustment is made using the combustion manager's menu controlled commissioning program.

All the burner's components, such as the mixing assembly, air damper and combustion manager, are readily accessible despite its compact construction, enabling maintenance and servicing work to be carried out quickly and easily. This is further helped by the standard hinged flange, which provides a perfect servicing position for the burner.

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

Flexible control possibilities
All WM-G20 burners are available with sliding two stage / modulating operation, enabling numerous control possibilities and making the burner universally employable. Both versions ensure a gentle, problem free start up and high operational safety.

Version ZM (fully automatic sliding 2 stage or modulating, depending on the type of capacity regulation):
Within its operating range, the burner's output is matched to the current heat demand.

LN version (Low NO_X)
NO_x emissions are even lower than those from burners with the standard mixing assembly. This is achieved by a higher degree of recirculation of the combustion gases within the combustion chamber.

The actual emission levels which can be achieved depend on the combustion chamber geometry, volume loading and the type of combustion system (3-pass or reverse flame). When considering guaranteed emission levels, certain conditions with regard to measurement and evaluation must be taken into account, e.g. combustion chamber loading, measurementt tolerances, temperature, pressure, humidity etc.

Fuels
Natural Gas E
Natural Gas LL
Liquid Petroleum Gas B/P

The suitability of other fuels must be confirmed in advance by Weishaupt.

Applications
The Weishaupt WM-G20 gas burner is tested to EN 676 and suitable for:
- installation on heat exchangers to EN 303-2
- hot water plant
- steam boilers and high pressure hot water plant
- intermittent and continuous operation
- installation on air heaters

The combustion air must be free of aggressive substances (halogens, chlorides, fluorides etc.) and impurities (dust, debris, vapours etc.). For many applications the use of an extraneous air supply is recommended (additional cost).

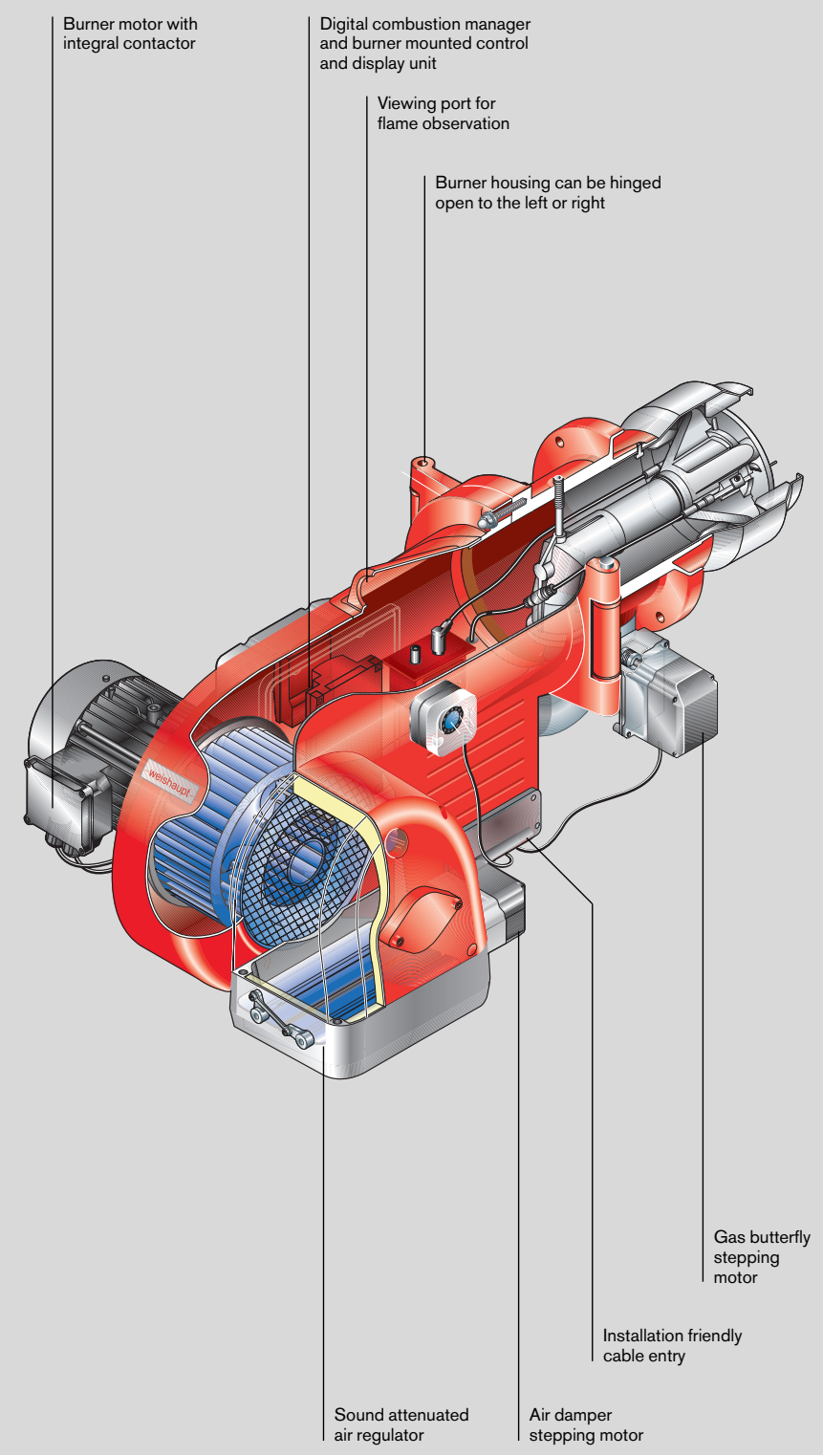
Permissible ambient conditions
- Ambient temperature: -15 to +40°C (in operation)
- Humidity: max. 80% relative humidity, no dew point
- Suitable for operation indoors only
- For plant in unheated areas certain further measures may be required (please enquire)

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

Certification
The burners are tested by an independent body and conform to the following standards and EU directives:
- EN 676
- Machinery Directive 98/37/EC
- Electromagnetic compatability EMV 89/336/EEC
- Low Voltage Directive73/23/EEC
- Gas Appliance Directive 90/396/EEC
- Pressure Vessel Directive 97/23/EC
- The burners carry the CE and CE-PIN marks

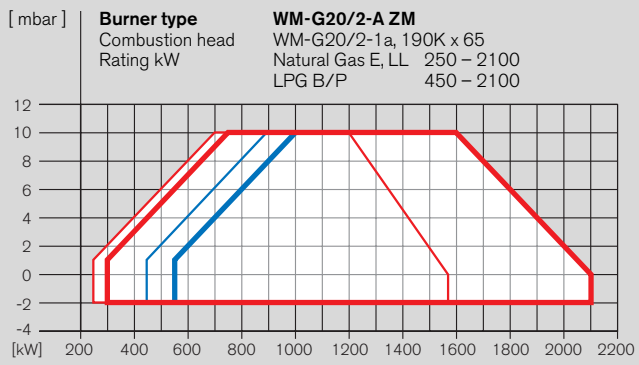
The most important advantages at a glance

- Compact and powerful
- Digitial combustion management with electronic compound regulation at all ratings
- Sound attenuated air inlet as standard for quieter operation
- Powerful fan due to the specially developed fan geometry and air damper control
- All WM-G20 burners are delivered with the mixing assembly preset for the required output of the burner
- IP 54 protection as standard
- Easy access to all components, such as: mixing assembly, air damper and combustion manager
- Safe operation with sliding two stage or modulating operation as standard
- Computer controlled function test at the factory of each individual burner
- Burner can be supplied pre-wired with plug connections
- Excellent price/capacity ratio
- Well established, global service network



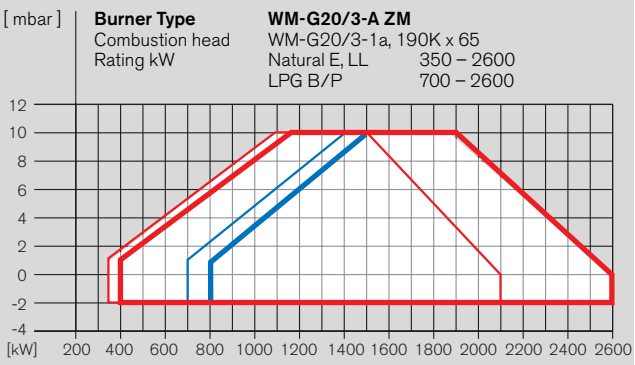
* Measurements recorded on test rigs at the Weishaupt Research and Development Centre.

Gas burner selection
WM-G20, version ZM



Nat. Gas capacity with combustion head
Closed
Open

LPG capacity with combustion head
Closed
Open



Capacity graphs in accordance with EN 676.

The ratings given are based on installation altitude of 0 m. Depending on the altitude of the installation, a reduction in capacity of 1% for every 100 m above sea level should be taken into account.

Burner order numbers

Burner type	Version	Order No.
WM-G20/2	ZM	217 210 20
WM-G20/3	ZM	217 210 30

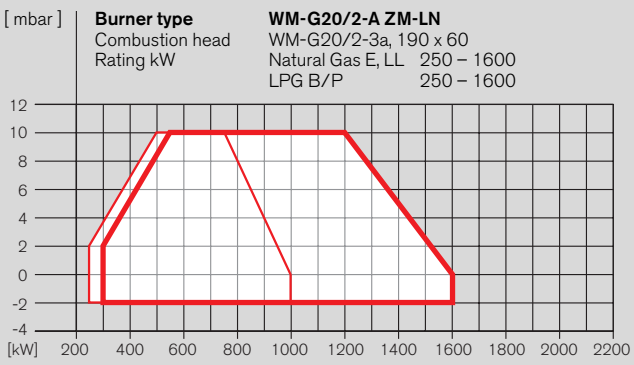
DMV order numbers
(DMV with connection pieces)

Order No.	20/2	20/3
R 1	100 010 19	
R 1 1/2	100 010 20	
R 2	100 010 21	
DN 65	100 010 22	
DN 80	100 010 23	
DN 100	100 010 24	
DN 125	100 010 25	

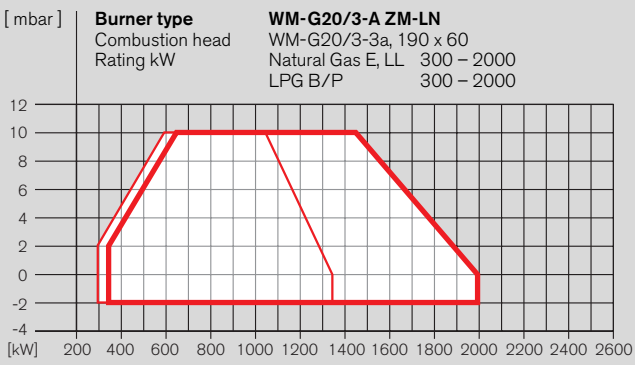
Further gas accessories, e.g. filters and governors can be found in the accessories list (Print no.: 830**212**01)

CE PIN No. CE0085BS0032

Gas burner selection
WM-G20, version ZM-LN



Nat. Gas and LPG capacity with combustion head
Closed
Open



Capacity graphs in accordance with EN 676.

The ratings given are based on installation altitude of 0 m. Depending on the altitude of the installation, a reduction in capacity of 1% for every 100 m above sea level should be taken into account.

Burner order numbers

Burner type	Version	Order No.
WM-G20/2	ZM-LN	217 210 21
WM-G20/3	ZM-LN	217 210 21

DMV order numbers
(DMV with connection pieces)

Order No.	20/2	20/3
R 1	100 010 19	
R 1 1/2	100 010 20	
R 2	100 010 21	
DN 65	100 010 22	
DN 80	100 010 23	
DN 100	100 010 24	
DN 125	100 010 25	

Further gas accessories, e.g. filters and governors can be found in the accessories list (Print no.: 830**212**01)

CE PIN No. CE0085BS0032

Valve train sizing
WM-G20, version ZM

WM-G20/2, version ZM

Burner rating kW	Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV							High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV						
	1"	**1½"**	**2"**	**65**	**80**	**100**	**125**	**1"**	**1½"**	**2"**	**65**	**80**	**100**	**125**
	Nom. diameter of gas butterfly							Nom. diameter of gas butterfly						
	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Natural Gas E H_i = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606														
800	72	22	14	9	–	–	–	21	8	8	–	–	–	–
900	91	27	18	10	–	–	–	27	10	10	5	–	–	–
1000	111	32	21	12	8	–	–	33	13	12	7	–	–	–
1100	134	38	25	14	9	–	–	40	15	15	8	5	–	–
1200	159	45	29	16	10	8	–	48	18	17	9	6	–	–
1300	186	52	33	18	11	9	–	56	21	20	11	7	6	–
1400	215	60	38	20	13	10	8	64	24	23	12	8	6	5
1500	246	69	43	22	14	11	9	74	28	27	14	9	7	6
1700	–	87	55	28	17	13	11	95	36	34	18	11	9	8
1900	–	109	68	35	21	16	13	118	45	43	22	14	11	10
2100	–	132	82	41	25	18	15	–	54	52	27	17	14	12
Natural Gas LL H_i = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641														
800	104	30	20	11	–	–	–	31	12	12	6	–	–	–
900	131	38	25	14	9	–	–	39	15	15	8	5	–	–
1000	161	46	30	16	11	9	–	49	19	18	10	7	5	–
1100	194	55	35	19	13	10	9	59	23	22	12	8	6	6
1200	230	65	41	22	14	11	10	70	27	26	14	9	7	7
1300	270	76	48	25	16	12	11	81	31	30	16	11	8	8
1400	–	87	55	28	18	14	12	94	36	35	18	12	10	8
1500	–	99	62	32	20	15	13	108	41	39	20	13	11	9
1700	–	127	79	41	25	19	16	139	53	51	27	18	14	12
1900	–	158	98	50	31	23	19	–	66	64	33	22	18	16
2100	–	192	119	61	37	27	23	–	80	77	40	26	21	19
LPG B/P H_i = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555														
800	31	11	–					9	–	–				
900	39	13	9					11	–	–				
1000	48	15	11					14	6	5				
1100	57	18	12					17	7	7				
1200	67	21	14					20	8	8				
1300	78	24	16					23	9	9				
1400	90	27	18					27	11	10				
1500	103	30	20					31	12	12				
1700	132	38	25					39	15	15				
1900	164	47	30					49	19	18				
2100	200	57	36					60	23	22				

WM-G20/3, version ZM

Burner rating kW	Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV							High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV						
	1"	**1½"**	**2"**	**65**	**80**	**100**	**125**	**1"**	**1½"**	**2"**	**65**	**80**	**100**	**125**
	Nom. diameter of gas butterfly							Nom. diameter of gas butterfly						
	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Natural Gas E H_i = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606														
1100	134	38	25	14	9	–	–	40	15	15	8	5	–	–
1200	159	45	29	16	10	8	–	48	18	18	9	6	–	–
1300	186	53	34	18	12	9	–	56	21	21	11	7	6	5
1400	216	61	38	20	13	10	9	65	25	24	13	8	7	6
1500	247	69	44	23	15	11	10	74	28	27	14	9	7	7
1600	280	78	49	26	16	12	10	84	32	31	16	10	8	7
1800	–	98	61	31	19	14	12	106	40	39	20	13	10	9
2000	–	120	75	38	23	17	14	131	49	48	25	16	13	11
2200	–	145	90	45	27	20	17	–	60	58	30	19	15	13
2400	–	171	106	53	32	23	19	–	71	68	35	22	18	15
2600	–	200	124	62	37	26	22	–	83	80	41	26	20	18
Natural Gas LL H_i = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641														
1100	194	55	35	19	12	9	8	58	22	21	11	7	6	5
1200	230	65	41	22	14	11	9	69	26	25	13	9	7	6
1300	269	75	47	25	16	12	10	81	31	30	16	10	8	7
1400	–	87	54	28	18	13	11	94	36	34	18	12	9	8
1500	–	99	62	32	20	15	12	108	41	39	20	13	11	9
1600	–	112	70	36	22	16	14	122	46	44	23	15	12	10
1800	–	141	87	44	26	19	16	–	58	56	28	18	14	12
2000	–	173	107	54	32	23	19	–	71	69	35	23	18	15
2200	–	209	129	64	38	27	23	–	86	83	42	27	21	19
2400	–	247	152	76	45	32	26	–	102	98	50	32	25	22
2600	–	289	178	88	51	36	29	–	119	115	58	37	29	25
LPG B/P H_i = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555														
1100	57	18	12	–				17	7	6	–			
1200	67	20	14	8				20	8	8	–			
1300	78	23	16	9				23	9	9	–			
1400	90	27	18	10				27	10	10	5			
1500	103	30	20	11				31	12	12	6			
1600	117	34	22	12				35	13	13	7			
1800	147	42	27	15				44	17	16	8			
2000	181	51	33	18				54	21	20	11			
2200	219	62	39	21				66	25	25	13			
2400	260	73	46	25				79	30	29	16			
2600		85	54	28				92	35	34	18			

The combustion chamber pressure in mbar must be added to the minimum gas pressure required.
The minimum gas supply pressure should not be less than 15 mbar.

For low pressure supplies, pressure regulating devices with safety membrane in accordance with EN 88 are used. The maximum permissible supply pressure before the shut off valve is 300 mbar.

For high pressure supplies, high pressure regulating devices in accordance with EN 3380 can be selected from the brochure "Pressure regulating units with safety devices for Weishaupt gas and dual fuel burners." This details high gas pressure sets for supply pressures of up to 4 bar.

See burner plate for maximum connection pressure.

Valve train sizing
WM-G20, version ZM-LN

WM-G20/2, version ZM-LN

Burner rating kW	Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV							High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV						
	1"	**1½"**	**2"**	**65**	**80**	**100**	**125**	**1"**	**1½"**	**2"**	**65**	**80**	**100**	**125**
	Nom. diameter of gas butterfly							Nom. diameter of gas butterfly						
	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Natural Gas E H_i = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606														
700	61	22	17	12	10	9	9	21	11	11	8	7	7	7
800	79	28	21	15	12	11	11	28	15	14	11	9	9	8
900	98	34	25	18	15	13	13	35	18	18	13	11	11	10
1000	120	41	30	21	17	15	15	42	22	21	15	13	12	12
1100	144	49	35	24	19	17	17	50	25	25	18	15	14	14
1200	170	56	39	26	21	19	18	58	29	28	20	17	15	15
1300	197	64	45	29	23	20	19	67	32	32	22	18	17	16
1400	227	72	50	32	25	22	20	76	36	35	24	20	18	17
1500	259	81	56	35	27	23	22	86	40	39	26	21	20	19
1600	293	91	62	38	29	25	23	97	45	43	29	23	21	20
Natural Gas LL H_i = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641														
700	85	29	21	14	12	11	10	29	14	14	10	8	8	7
800	110	37	26	18	14	13	12	37	18	18	13	11	10	10
900	139	46	32	21	17	15	14	47	23	22	16	13	12	12
1000	170	55	39	25	20	18	17	57	28	27	19	16	14	14
1100	204	65	45	29	23	20	19	69	33	32	22	18	17	16
1200	241	76	52	33	25	22	20	80	38	37	25	20	18	17
1300	281	87	59	37	28	24	22	93	43	42	27	22	20	19
1400	–	99	67	41	30	26	24	106	48	47	30	24	22	21
1500	–	112	75	45	33	28	26	121	54	52	33	26	24	22
1600	–	126	83	49	36	30	27	136	60	58	37	29	25	24
LPG B/P H_i = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555														
700	29	13	11					11	7	7				
800	37	16	13					15	9	9				
900	46	20	16					19	12	12				
1000	56	24	19					23	14	14				
1100	67	28	22					27	17	17				
1200	77	31	24					30	18	18				
1300	89	34	26					34	20	19				
1400	101	38	29					38	22	21				
1500	114	42	31					42	23	23				
1600	129	46	34					47	25	25				

WM-G20/3, version ZM-LN

Burner rating kW	Low pressure supply (flow pressure in mbar before shut off valve, $p_{e,max}$ = 300 mbar) Nominal diameter of DMV							High pressure supply (flow pressure in mbar before double solenoid valve) Nominal diameter of DMV						
	1"	**1½"**	**2"**	**65**	**80**	**100**	**125**	**1"**	**1½"**	**2"**	**65**	**80**	**100**	**125**
	Nom. diameter of gas butterfly							Nom. diameter of gas butterfly						
	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Natural Gas E H_i = 37.26 MJ/m³ (10.35 kWh/m³), d = 0.606														
1000	118	39	28	19	15	13	13	40	20	19	13	11	10	10
1100	142	46	33	22	17	15	14	48	23	23	16	13	12	12
1200	168	54	38	25	19	17	16	57	27	27	18	15	14	13
1300	196	63	43	28	22	19	18	66	31	31	21	17	16	15
1400	227	72	49	31	24	21	20	76	36	35	24	19	18	17
1500	259	81	55	35	26	23	21	86	40	39	26	21	19	18
1600	293	90	61	38	28	24	23	96	44	43	28	23	20	19
1700	–	100	68	41	30	26	24	108	49	47	31	24	22	21
1800	–	111	74	45	33	28	25	120	53	52	33	26	23	22
2000	–	134	89	52	37	31	28	–	63	62	38	30	26	25
Natural Gas LL H_i = 31.79 MJ/m³ (8.83 kWh/m³), d = 0.641														
1000	168	53	36	23	18	15	14	55	25	25	16	13	12	11
1100	202	63	43	27	20	18	16	66	30	30	20	16	14	14
1200	239	74	50	31	23	20	19	79	36	35	23	18	16	16
1300	280	86	58	35	26	22	21	92	41	40	26	21	19	18
1400	–	98	66	40	29	25	23	105	47	46	30	23	21	20
1500	–	111	74	44	32	27	25	120	53	52	33	26	23	22
1600	–	125	83	49	35	29	27	135	59	57	36	28	25	23
1700	–	140	92	53	38	31	28	–	66	64	39	30	27	25
1800	–	155	102	58	41	34	30	–	72	70	43	33	29	27
2000	–	188	122	69	47	38	34	–	86	84	50	38	33	30
LPG B/P H_i = 93.20 MJ/m³ (25.89 kWh/m³), d = 1.555														
1000	54	21	16	13				20	12	11	9			
1100	64	25	19	15				24	14	14	11			
1200	75	29	22	17				28	16	16	12			
1300	88	33	25	19				33	19	18	14			
1400	101	37	28	21				37	21	21	16			
1500	114	41	31	22				42	23	22	17			
1600	128	45	33	24				46	25	24	18			
1700	143	50	36	25				51	27	26	20			
1800	159	54	39	27				56	29	28	21			
2000	194	64	45	30				67	34	33	23			

The combustion chamber pressure in mbar must be added to the minimum gas pressure required.
The minimum gas supply pressure should not be less than 15 mbar.

For low pressure supplies, pressure regulating devices with safety membrane in accordance with EN 88 are used. The maximum permissible supply pressure before the shut off valve is 300 mbar.

For high pressure supplies, high pressure regulating devices in accordance with EN 3380 can be selected from the brochure "Pressure regulating units with safety devices for Weishaupt gas and dual fuel burners." This details high gas pressure sets for supply pressures of up to 4 bar.

See burner plate for maximum connection pressure.

Special equipment

Scope of delivery

Scope of delivery	WM-G20/2-A ZM	WM-G20/2-A ZM-LN	WM-G20/3-A ZM	WM-G20/3-A ZM-LN
Burner housing, hinged flange, housing cover, Weishaupt burner motor, air regulator housing, fan wheel, combustion head, ignition unit, ignition cables, ignition electrodes, combustion manager with control unit, flame sensor, stepping motors, flange gasket, limit switch on hinged flange, fixing screws	●	●	●	●
W-FM 50 digital combustion manager	●	●	●	●
Gas double solenoid valve assembly (DMV), Class A	●	●	●	●
Gas butterfly valve	●	●	●	●
Valve connection piece	●	●	●	●
Air pressure switch	●	●	●	●
Gas pressure switch	●	●	●	●
Stepping motors for compound gas/air regulation with W-FM50				
Air regulator stepping motor	●	●	●	●
Gas butterfly stepping motor	●	●	●	●

In accordance with EN 676, gas filters and governors form part of the burner supply (see print No.. 830**212**01).
Burner execution complies with TRD 604, 24 h / 72 h (see technical brochure, print No.. 863).

Special equipment

Special erquipment		WM-G20/2-A ZM	WM-G20/2-A ZM-LN	WM-G20/3-A ZM	WM-G20/3-A ZM-LN
Comb. head extension	by 100 mm	230 030 79	230 030 87	230 030 79	230 030 87
	by 200 mm	230 030 80	230 030 88	230 030 80	230 030 88
	by 300 mm	230 030 81	230 030 89	230 030 81	230 030 89
Solenoid valve for air pressure switch test - continuous fan or post purge					
High gas pressure switch (screwed DMV)					
	GW 50 A6/1	150 017 52	150 017 52	150 017 52	150 017 52
	GW 150 A6/1	150 017 53	150 017 53	150 017 53	150 017 53
	GW 500 A6/1	150 017 54	150 017 54	150 017 54	150 017 54
High gas pressure switch (flanged DMV)					
	GW 50 A6/1	150 017 49	150 017 49	150 017 49	150 017 49
	GW 150 A6/1	150 017 50	150 017 50	150 017 50	150 017 50
	GW 500 A6/1	150 017 51	150 017 51	150 017 51	150 017 51
Extraneous air inlet		210 030 47	210 030 47	210 030 47	210 030 47
Speed control (VSD) with burner mounted frequency convertor		210 030 40	210 030 40	210 030 40	210 030 40
Speed control (VSD) with separate frequency convertor		210 030 41	210 030 41	210 030 41	210 030 41
W-FM 100 in lieu of W-FM 50 (for continuous operation)		250 030 74	250 030 74	250 030 74	250 030 74
Analogue gignal convertor/capacity controller for W-FM 100		110 017 18	110 017 18	110 017 18	110 017 18
W-FM 200 in lieu of W-FM 50, with capacity regulation, analogue signal convertor and speed control module, with optional fuel metering		250 030 75	250 030 75	250 030 75	250 030 75
W-FM 50 and burner mounted KS 40		250 030 90	250 030 90	250 030 90	250 030 90
Plug connections ST18/7 and ST18/4		250 030 22	250 030 22	250 030 22	250 030 22

Technical data

Technical data

Burner		WM-G20/2-A ZM	WM-G20/2-A ZM-LN	WM-G20/3-A ZM	WM-G20/3-A ZM-LN
Burner motor	Weishaupt type	D112/110-2/2	D112/110-2/2	D112/110-2/3	D112/110-2/3
Nominal capacity	kW	3.0	3.0	3.5	3.5
Nominal load	A	6.0	6.0	6.6	6.6
Motor prefuse (ϒΔ start)	A minimal	20 A slow (external)	20 A slow (external)	20 A slow (external)	20 A slow (external)
Speed (50 Hz)	rpm	2900	2900	2900	2900
Combustion manager	Type	W-FM 50 W-FM 100/200	W-FM 50 W-FM 100/200	W-FM 50 W-FM 100/200	W-FM 50 W-FM 100/200
Air/Gas stepping motor	Type	STE 50 SQM 45	STE 50 SQM 45	STE 50 SQM 45	STE 50 SQM 45
Flame monitoring	Type	ION	ION	ION	ION
NO_x class in accordance with EN 676	ZM / ZM-LN	1	3	1	3
Weight	kg	approx. 85	approx. 85	approx. 85	approx. 85

Voltages and frequencies:
The burners are equipped as standard for three phase alternating current 400 V, 3~, N, 50 Hz. Other voltages and frequencies available on request.

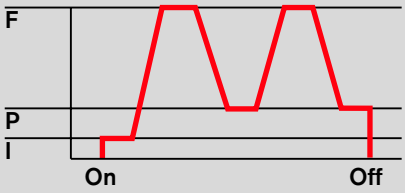
Standard burner motor:
Isolation class F, IP 54 protection.

Mode of operation

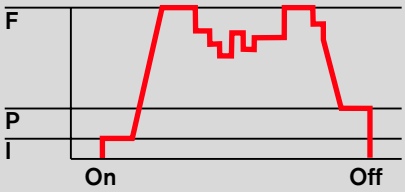
Sliding 2 stage/modulating (ZM)

- Stepping motors adjust the capacity between partial and full load dependent on the heat demand
- There is a gradual change between both load points. There are no sudden large changes in fuel throughput.
- For modualting operation (infinitely variable within the capacity range in response to heat demand) a capacity controller is required, which can be integrated in the W-FM 100 (included as standard with the W-FM 200). Alternatively a regulator can be built into a control panel

sliding two stage



modulating



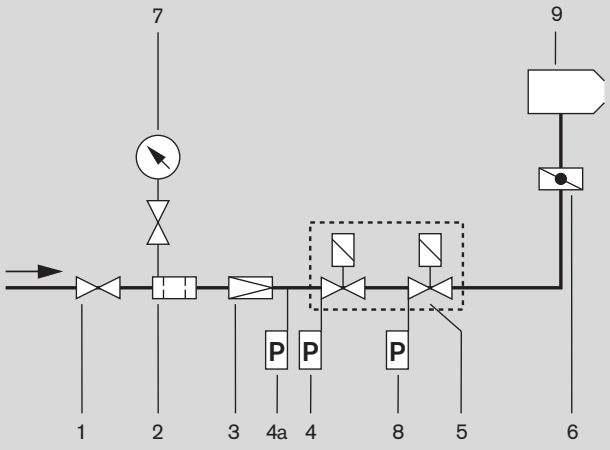
F = Full load (nominal load)
P = Partial load (Min. capacity)
I = Ignition load

Designation

WM - G 20 /3 –A/ ZM- LN

- LN: (Low NO_x)
- ZM: Sliding two stage or modulating
- A: MArk
- /3: Capacity
- 20: Size
- G: G = Gas
- WM: Weishaupt monarch® series burner

Valve train layout



1 Ball valve*
2 Gas filter *
3 Pressure regulator, (low P) or (high P) *
4 Low gas pressure switch
4a High gas pressure switch (for TRD) *
5 Double solenoid valve (DMV)
6 Gas butterfly valve
7 Pressure gauge with push button valve *
8 Gas pressure switch (valve proving)
9 Burner

* See accessories list (print no.: 830**212**01)

Layout of the valve train
On boilers with hinged doors, the valve train must be mounted on the opposite side to the boiler door hinges. The pilot line solenoid valve can be fitted to either side.

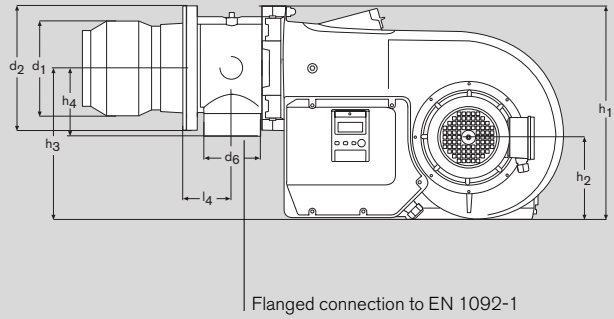
Compensator
To enable a tension free mounting of the valve train, the fitting of a compensator is recommended.

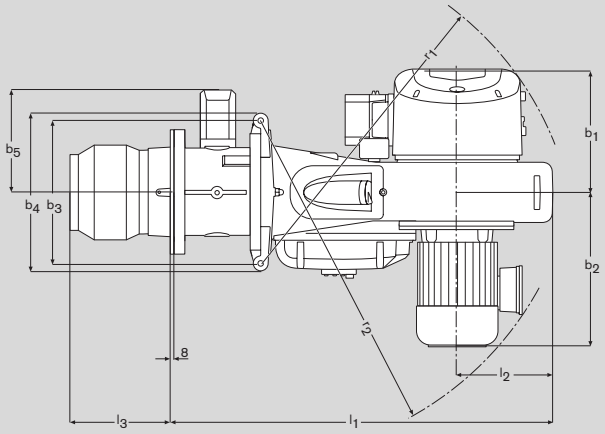
Break points in the valve train
Break points in the valve train should be provided to enable the door of the heat exchanger to be swung open. The main gas line is best separated at the compensator.

Support of the valve train
The valve train should be properly supported in accordance with the site conditions. See the Weishaupt accessories list for various valve train support components.

Gas meter
A gas meter must be installed to measure gas consumption during commissioning.

Dimensions



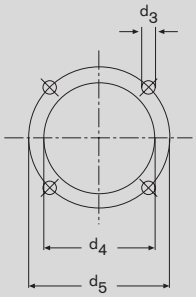


Burner type	Dimensions in mm l1	l2	l3	l4	b1	b2	b3	b4	b5	h1	h2	h3	h4	r1	r2
WM-G20/2 ZM	1010	254	231-256	128	333	406	380	418	251	565	217	400	182	840	858
WM-G20/2 ZM-LN	1010	254	247-267	128	333	406	380	418	251	565	217	400	182	840	858
WM-G20/3 ZM	1010	254	231-256	128	333	406	380	418	251	565	217	400	182	840	858
WM-G20/3 ZM-LN	1010	254	247-272	128	333	406	380	418	251	565	217	400	182	840	858

Burner type	Dimensions in mm d1	d2	d3	d4	d5	d6
WM-G20/2 ZM	250	330	M12	270	298	DN65
WM-G20/2 ZM-LN	250	330	M12	270	298	DN65
WM-G20/3 ZM	260	330	M12	270	298	DN65
WM-G20/3 ZM-LN	260	330	M12	270	298	DN65

All dimensions are approximate.
Weishaupt reserve the right to make alterations in light of future developments.

Boiler plate drilling dimensions



That's no Utopia. Weishaupt's constant research and development programme ensures ever cleaner and more economical burners and heating systems. That's reliability.

Test beds at the Weishaupt Research and Development Centre

Making advances.
Weishaupt has long recognised the theme of our times and is continually researching into ever more effective and environmentally friendly burners and heating systems. So Weishaupt is not only contributing considerably to the reduction of unecessary energy costs, but is also taking an active part in protecting the environment.

In-house production
Not only research and development takes place at Weishaupt. Burner and heating system production is also deeply rooted at our sites in Germany and Switzerland. That enables the real time, seamless monitoring and control of the quality of all the products produced by Weishaupt.

That’s no façade.
That’s reliability.

Weishaupt is reliability.
The family owned business in Schwendi, southern Germany, was founded in 1932 by Max Weishaupt. Today, with branch offices and subsidiary companies in 55 countries, it counts as an international market leader in the fields of combustion and heating technology.

The values of trust, quality, customer service, innovation and experience are those on which the pioneering Max Weishaupt founded his company. That, summed up in a single word, is reliability. And Weishaupt stands for that to this very day.

The Weishaupt Forum in Schwendi

–weishaupt–

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