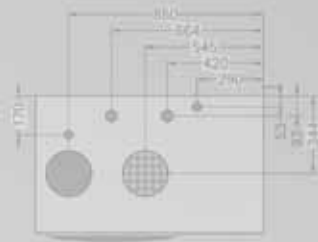




Technical documentation

Gas condensing boiler MGK





Gas condensing boiler for condensing operation and DHW heating
Tested in accordance with DIN EN 437 / DIN EN 483 / DIN EN 677, and current EC Directives.
Approved for natural gas E/H, LL and LPG Propane (category II2ELL3P)

MGK gas fired condensing boiler

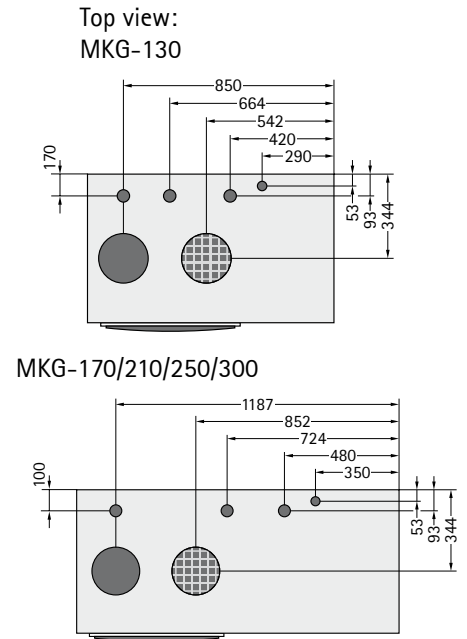
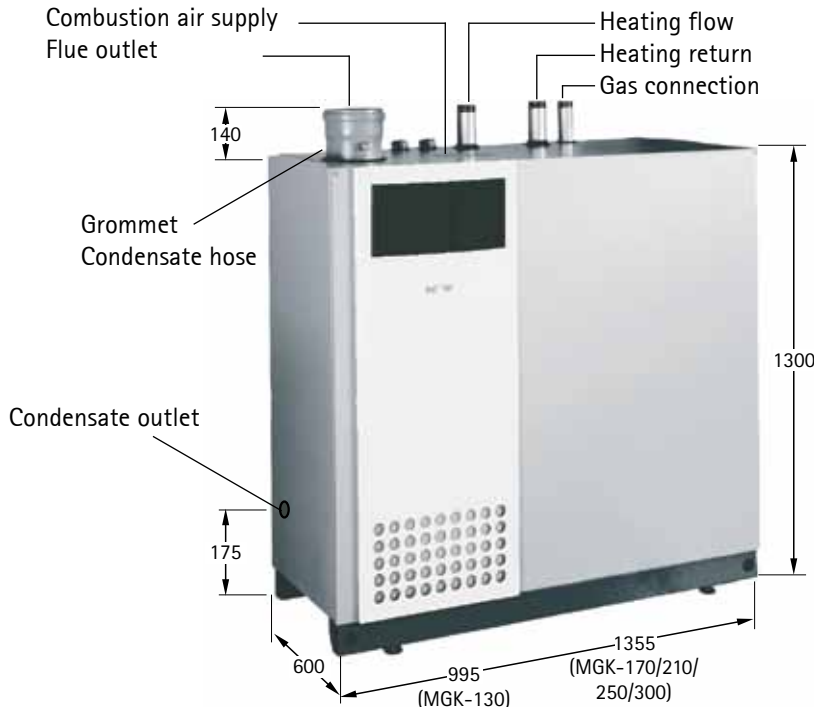
with whisper-quiet, modulating combustion (modulation between 17 and 100%), for open or balanced flue operation.



- Five boiler sizes with modulating regulated output ranging from 23 kW to 294 kW
- Extremely clean combustion; standard efficiency up to 110% (Hi) / 99% (Hs) for best possible energy utilisation
- High performance heat exchanger made from a robust aluminium/silicon alloy for a long service life and low maintenance requirements
- Compact, space-efficient design, optional positioning hard against the back or l.h. side wall
- Easy installation and pipework, all connections lead upwards
- Easy access to all components from the front; easy operation and maintenance
- Fully wired control unit, able to be used for the most diverse demand made of heating systems
- The cascade control of up to four gas fired condensing boilers enables an output of up to 1,2 MW to be achieved
- Five year warranty
Two year warranty on all electrical and moving parts
- Raising the return temperature is not required
- A minimum circulation water volume is not required

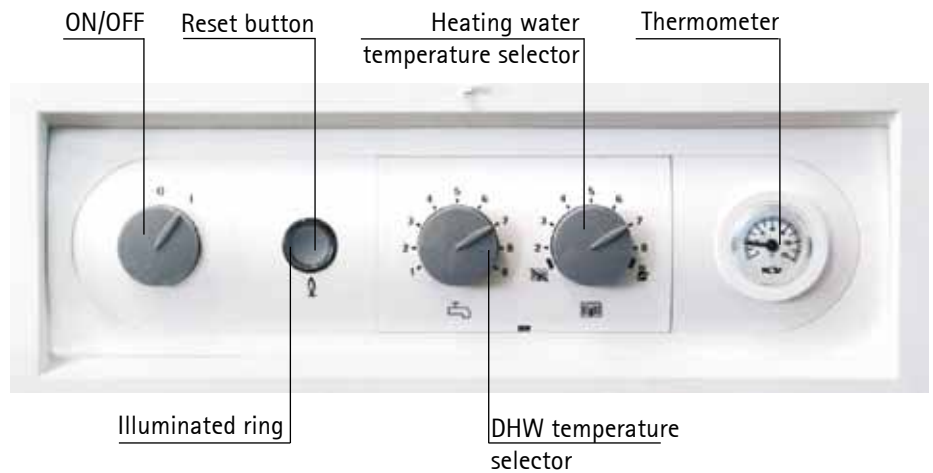
Delivered condition:
Gas condensing boiler, fully encased, assembled and wired, packed on a single pallet

Specification



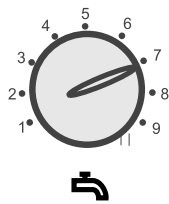
Gas condensing boiler	MGK	130	170	210	250	300
Rated output at 80/60°C	kW	117	156	194	233	275
Rated output at 50/30°C	kW	126	167	208	250	294
Rated thermal load	kW	120	160	200	240	280
Lowest output (modulating) at 80/60°C	kW	23	27	34	39	45
Lowest output (modulating) at 50/30°C	kW	24	30	37	44	49
Lowest thermal load (modulating)	kW	23	28	35	41	46
Modulation range load	%	19-100	17-100	17-100	17-100	17-100
Flue outlet	mm	160	160	160	160	200
Combustion air supply (accessories)	Ømm	160	160	160	160	160
Condensate drain	Ømm	25	25	25	25	25
Heating flow external diameter	G	1 1/2"	2"	2"	2"	2"
Heating return external diameter	G	1 1/2"	2"	2"	2"	2"
Gas connection	R	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Balanced flue system	Typ	B23, B33, C33; C43, C53, C63, C83	B23, B33, C33; C43, C53, C63, C83	B23, B33, C33; C43, C53, C63, C83	B23, B33, C33; C43, C53, C63, C83	B23, B33, C33; C43, C53, C63, C83
Gas category		II ₂ ELL3P	II ₂ ELL3P	II ₂ ELL3P	II ₂ ELL3P	II ₂ ELL3P
Gas supply value:						
Natural gas E (H = 9,5 kWh/m ³ = 34,2 MJ/m ³)	m ³ /h	13,1	16,8	21	25,2	29,4
Natural gas LL (H = 8,6 kWh/m ³ = 31,0 MJ/m ³)	m ³ /h	14,6	18,6	23,3	27,9	32,6
LGP P (H = 12,8 kWh/kg = 46,1 MJ/kg)	kg/h	9,7	12,5	15,6	18,7	21,8
Gasanschlussdruck:						
Natural gas E and natural gas LL	mbar	20	20	20	20	20
LGP P	mbar	50	50	50	50	50
Standard efficiency at 40/30 °C (Hi / Hs)	%	110/99	110/99	110/99	110/99	110/99
Standard efficiency at 75/60 °C (Hi / Hs)	%	107/96	107/96	107/96	107/97	108/97
Efficiency at rated load at 80/60 °C (Hi / Hs)	%	99/89	99/89	99/89	99/89	99/89
Efficiency at 30% partial load and TR=30 °C (Hi / Hs)	%	109/98	109/98	109/98	109/98	109/98
Boiler water content	Ltr.	12	15,4	16	20	22
Heating water pressure drop (at Δt = 20K)	mbar	95	100	115	135	160
Max. permissible boiler pressure	bar	6	6	6	6	6
Max. permissible flow temperature	°C	90	90	90	90	90
Available gas fan draught	Pa	10-200	10-150	10-150	10-150	10-150
Flue gas temperature 80/60-50/30 with Q _{max}	°C	65-45	65-45	65-45	65-45	65-45
Flue gas temperature 80/60-50/30 with Q _{min}	°C	55-35	55-35	55-35	55-35	55-35
Flue gas mass flow rate	g/s	56,7	72,6	90,8	108,9	127,1
Flue gas value category to DVGW 635		G52	G52	G52	G52	G52
Condensate volume at 40/30°C	Ltr./h	12	16	20	24	28
Condensate pH value		ca. 4,0	ca. 4,0	ca. 4,0	ca. 4,0	ca. 4,0
Power consumption	W	30-200	45-280	45-280	45-280	45-280
Protection		IP40D	IP40D	IP40D	IP40D	IP40D
Power supply		230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Weight	kg	195	250	271	292	313
CE-designation		0085BR0117	0063BQ3805	0063BQ3805	0063BQ3805	0063BQ3805

Control unit



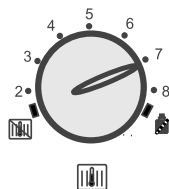
Illuminated ring for status indication

Display	Explanation
Flashing green	Stand-by (power supply ON, burner OFF)
Constant green	Heat demand: pump running, burner OFF
Flashing yellow	Emissions test mode
Constant yellow	Burner ON, flame steady
Flashing red	Fault



DHW temperature selector

The setting range 1 - 9 corresponds to a cylinder temperature of 15 to 65 °C. Combined with a control thermostat, the adjustment at the DHW temperature selector is disabled; instead the temperature is selected at the boiler control thermostat.



Heating water temperature selector

The setting range 2 - 8 corresponds to a heating water temperature of 20 to 75 °C. Combined with a control thermostat, the adjustment at the heating water temperature selector is disabled.

The temperature is selected at the boiler control thermostat.

Setting




Winter mode (position 2 to 8)

The circulation pump operates in heating mode.




Summer mode

Switch in position  circulation pump OFF (heating OFF), only DHW heating is active, frost protection and anti-seizing pump protection are active, i.e. the circulation pump operates for approx. 30 seconds once every 24 hours.



Emissions test mode

Turning the switch into position  boiler operates at maximum output. The illuminated ring flashes yellow for 15 minutes or until the maximum flow temperature is exceeded.



Thermometer

The heating water temperature is displayed.



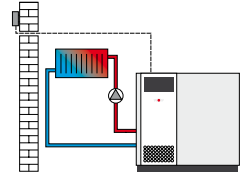
Standard controller; part of the standard delivery of the gas condensing boiler

Two-wire eBUS cable



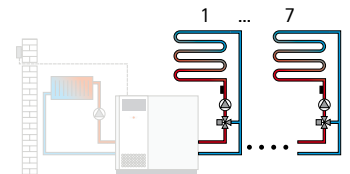
BM programming module (incl. outside temperature sensor) as weather-compensated control thermostat

- Time programs for DHW and central heating
- LCD with background illumination
- Easy plain text guide through the menus
- Control by rotary selector with key function
- Four function keys for frequently used functions (heating, DHW, setback, help)
- Installation either inside the boiler control unit or, as remote control, in a wall mounting base
- Option for mixer module MM
- Only one programming unit is required for multi-boiler systems
- May be extended with mixer module MM (up to 7 mixer circuits)



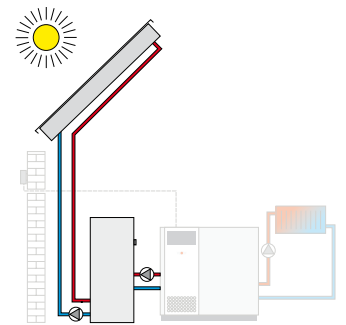
MM mixer module

- Extension module for regulating one mixer circuit
- Weather-compensated flow temperature control
- Easy controller configuration by selecting one of the preset system versions
- BM programming module to clip into boiler, or extendable with wall mounting base as remote control
- Rast-5 connection technology
- Incl. flow temperature sensor



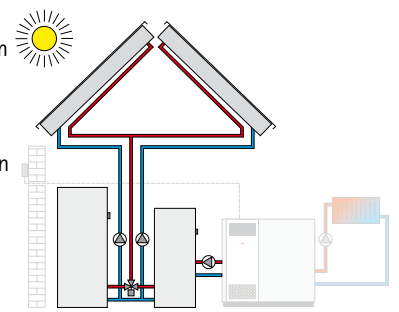
Solar module SM1

- Extension module for the regulation of one solar circuit
- In conjunction with Wolf boilers, greater energy savings through intelligent cylinder reheating, i.e. blocking cylinder reheating when there is sufficient solar yield
- Temperature differential controller for one heat consumer
- Maximum cylinder temperature limit
- Display of the set and actual values on the BM programming module
- Integral hours run meter
- Optional connection of heat meters
- Rast-5 connection technology
- Incl. collector sensor and cylinder sensor, each with sensor well



Solar module SM2

- Extension module for the regulation of a solar system including up to 2 cylinders and 2 collector fields, incl. 1 collector sensor, 1 cylinder sensor, each with sensor well
- Easy configuration of the controller through selection of pre-defined system options
- In conjunction with Wolf boilers, greater energy savings through intelligent cylinder reheating, i.e. blocking cylinder reheating when there is sufficient solar yield
- Heat meter function
- Display of the set and actual values on the BM programming module
- eBus interface with automatic energy management
- Rast-5 connection technology



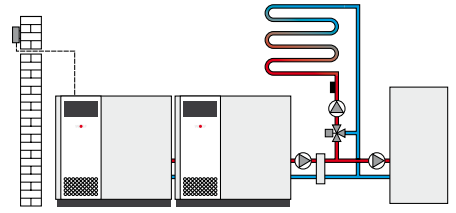
Control accessories

Two-wire eBUS cable



Cascade module KM

- Extension module for control of systems with low loss header or cascade configuration
- Applicable for controls of condensing gas boilers (4 appliances)
- Easy configuration of the controller through selection of pre-defined system options
- Suitable for regulating one mixer circuit
- Programming module BM may either be plugged in or used as remote control with wall mounting base
- 0-10V input for building control network systems, fault signal output 230V
- eBus interface with automatic energy management
- Rast-5 connection technology



Radio clock (DCF 77 signal) with outside temperature sensor for automatic time adjustment.



Radio clock (DCF 77 signal) for automatic time adjustment.



External wireless sensor

(only in conjunction with a receiver for external wireless sensor and remote control, part no. 27 44 209)



Wireless receiver for wireless outside temperature sensor and wireless remote control
Incl. radio clock (DCF 77 signal)



Wireless remote control

(only in conjunction with a receiver for external wireless sensor and remote control)
Max. one wireless remote control per mixer circuit.



ISM 4 - LON interface module

for communication between the control unit and the building management system applying the LON standard network variables



ISM 1 - RS232 interface module (Remote service system)

for direct or remote access to the control system via PC and for transferring fault text messages. Consisting of: Interface module ISM1 and remote service software „WRS-Soft“



ISM 2 - USB/eBUS interface module

for direct access via PC to the control unit and for transferring fault messages as SMS, comprising: Interface module ISM2 and software "WRS-Soft".

Item.	Unit	Unit price	Total
<p>Gas condensing boiler MGK to DIN EN 279, 437, 483, 677, and current EC Directives, for hot water heating systems with heating circuit pumps to DIN EN 12828 for open or balanced flue operation, factory-fitted for natural gas E/H, optional adjustment to natural gas LL, or conversion to LPG P. High performance heat exchanger made from a robust aluminium/silicon alloy with high resistance to corrosion. Cylindrical premix gas burner for extremely clean combustion. Gas/air: mixer for modulatng operation between 17% and 100%; standard efficiency up to 110%. Connections for combustion air inlet, flue gas, gas as well as heating flow and return are routed through the top of the boiler. The boiler is fully fitted with a high-grade, powder-coated sheet steel casing. Boiler typ: MGK..... Width x Height x Depth: mm x 1300 mm x 600 mm Output range: kW Weight:kg Make: Wolf</p> <p>Control unit Basic control unit including burner control unit, electronic ignition, ionisation flame monitoring and variable speed fan control, fully wired and integrated into the boiler; prepared for combination with weather-compensated thermostats. Boiler pumps may be directly connected.</p> <p>Control accessories</p> <p>BM programming module Weather-compensated control thermostat with time programs for DHW and central heating, weather-compensated heating water temperature, incl. outside temperature sensor, may be extended with mixer module MM (up to 7 mixer circuits)</p> <p>MM mixer module Extension module for regulating one mixer circuit weather-compensated, heating water and flow temperature, incl. flow sensor</p> <p>Solar module SM1 Extension module for regulating one solar circuit. Temperature differential controller for one heat consumer, incl. collector sensor and cylinder sensor, each with sensor well.</p> <p>Solar module SM2 Extension module for regulating one solar heating system with up to two cylinders and two collector field. Easy configuration of the controller through selection of pre-defined system options, incl. collector sensor and cylinder sensor, each with sensor well.</p> <p>Cascade module KM Extension module for regulating systems with low loss header or cascades with up to 4 oil fired condensing boilers.</p> <p>Radio clock module with outside temperature sensor</p> <p>Radio clock module</p> <p>Wireless outside sensor (only in conjunction with the receiver for wireless outside sensor, part no. 27 44 209)</p> <p>Receiver for wireless outside sensor incl. DCF (radio clock)</p> <p>ISM 4 -LON interface module for communication between the control unit and the building management system applying the LON standard network variables</p> <p>WRS - remote service system Telecontrol switching contact 2-channel with speech control</p> <p>Flue gas system</p> <p>Ventilation air inlet for balanced flue operation</p> <p>Flue gas system Ø 160 up to Ø 315 made from polypropylene</p> <p>Flue gas system Ø 200 made from stainless steel</p> <p>Accessories</p> <p>Condensate lifting system, fully wired; may be integrated into the boiler</p> <p>Neutralising system with fixing clips, may be integrated into the boiler</p> <p>Assembly kit for supply air / energy saving damper, for flue gas in overpressure cascade systems, may be integrated into the boiler</p> <p>MGK-Twin-system kit, casing for two MGK boilers standing back to back</p> <p>Supply air filter to prevent the burner from being contaminated during the construction phase</p>			



The comprehensive equipment range from system supplier Wolf offers the ideal solution for commercial and industrial buildings, for new build and for modernisation projects alike. The range of Wolf control units fulfils every need where heating convenience is concerned. The products are easy to operate, energy-efficient and reliable. Photovoltaic and solar heating systems can be quickly integrated into existing systems. All Wolf products can be easily and rapidly commissioned and maintained.

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The competence brand for energy saving systems

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