Hoval

CATALOGUE

Gas

1.4.2026

Hoval | Responsibility for energy and environment

Wall-hanging gas condensing boilers

Hoval TopGas® combi — **21/18, 26/23, 32/28 kW**

Hoval TopGas® classic — **12-30 kW**

Hoval TopGas® max — **50-150 kW**

Floor-standing gas condensing boilers

Hoval UltraGas® — **15-100 kW**

Hoval UltraGas® 2 — **125-1550 kW**

Hoval UltraGas® 2 D — **250-3100 kW**

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CATALOGUE

Hoval TopGas® combi

Wall-hanging gas condensing boiler with integrated water heating TopGas® combi (21/18, 26/23, 32/28)

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Table of contents

Hoval TopGas® combi
(21/18, 26/23, 32/28)

Wall-hanging gas condensing boiler
- With condensing boiler technology
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Heat exchanger made of corrosion resistant aluminium alloy with integrated forced flow copper coil:
  flue gas side: aluminium
  water side: copper
- Hot water is produced with the aid of a second copper coil integrated in the boiler.
- Integrated:
  - high-efficiency pump
  - water pressure sensor
  - hand aspirator
  - flue gas temperature limiter
- Pre-mixing surface burner made of stainless steel
  - Modulating with gas/air group control
  - Automatic ignition
  - Ionisation guard
- Wall-hanging gas condensing boiler fully clad with white varnished steel plates

Basic boiler control panel
- Gas firing sequence controller with monitoring unit
- Modulating burner control
- Main switch “I/O”
- Operation and fault indication

Optional
- Gas valves

Delivery
- Wall-hanging gas condensing boiler fully clad
- Siphon and mounting material in package Wall-hanging gas condensing boiler

Heating controller set RS-OT
- For 1 heating circuit without mixing operation
- Weather-controlled regulation for continuously adjustable decreased boiler water temperature
- With room temperature sensor with switch-in facility
- Located in boiler room or living room
- Outdoor sensor
- Immersion sensor (calorifier sensor)

Cannot be installed in the boiler control panel! Only wall mounting possible!

Model range

TopGas® combi type		Nominal heat output 50/30 °C kW		Hot water output 45 °C dm³/10 min
(21/18)	A	5.9-18.6	A	60
(26/23)	A	7.6-23.4	A	80
(32/28)	A	7.8-27.1	A	124
	A+++ → D		A+ → F	

Energy efficiency class of the compound system with control.

Wall-hanging gas condensing boiler

Boiler permissions
Hoval TopGas® combi (21/18, 26/23, 32/28):
CE product ID No. 0063BQ3155

TopGas® combi (21/18, 26/23, 32/28)

Heat exchanger made of corrosion-free aluminium alloy with integrated forced flow copper coil. Hot water is produced with the aid of a copper coil integrated in the boiler.
With a modulating, pre-mixing surface burner made of stainless steel. Including basic boiler control and RS-OT controller, fully clad.

TopGas® combi type		Nominal heat output at 50/30 °C kW		Hot water output at 45 °C dm³/10 min	Part No.
(21/18)		5.9-18.6		60	7014 106
(26/23)		7.6-23.4		80	7014 107
(32/28)		7.8-27.1		124	7014 108

Energy efficiency class
see “Description”

Wall-hanging gas condensing boiler as above but without controller.

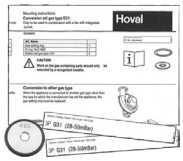
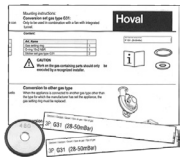
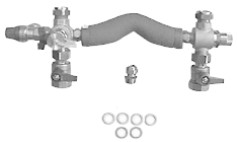
TopGas® combi type		Nominal heat output at 50/30 °C kW		Hot water output at 45 °C dm³/10 min	Part No.
(21/18)		5.9-18.6		60	7013 539
(26/23)		7.6-23.4		80	7013 540
(32/28)		7.8-27.1		124	7013 541

Hoval TopGas® combi may only be operated where the water hardness is less than 15 °dH (german degrees of hardness).

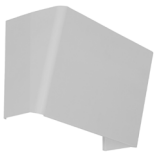
Energy efficiency class
see “Description”

Notice
The RS-OT control cannot be installed in the boiler! Only wall mounting possible!

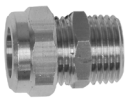
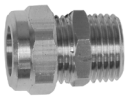
Accessories

		Part No.
	**Conversion kit for propane** for TopGas® combi (21/18), TopGas® classic (24) no external main gas valve possible!	2057 298
	**Konversion kit for propane** for TopGas® combi (26/23,32/28), TopGas® classic (30) No external main gas valve possible!	2057 299
	**Simple flue gas connecting piece E80** for separate conduction of flue gas and combustion air	2029 057
	**Backflow check valve** for TopGas® classic (12-30), TopGas® combi for preventing the emergence of flue gas from the boiler for use with cascades or with multi-use of flue gas lines	2063 018
	**Automatic, lockable quick air vent ⅜″** with removable cover for inspection Casing and cover made of brass CW617N Float made of polyethylene Seal between tank and cover with reinforced polyamide seal Connection G ⅜″ DIN-ISO228/1 Maximum operating pressure: 12 bar Maximum operating temperature: 160 °C Also suitable for water with additives (glycol up to 50 %) With automatic shut-off valve with air breaker made of brass CW617N Seal made of FKM, air breaker made of heat-resistant polymer Spring made of stainless steel	2054 183
	**Visible console for preinstallation** for preinstallation of gas, heating flow and return, cold and hot water connections Possible with all mounting frames or directly on the wall!	2025 779
	**Connection set 3** TopGas® classic (12-30), TopGas® combi (21/18, 26/23, 32/28) without calorifier without/with mounting frame Consisting of: flow fitting, return flow fitting with integrated bypass valve, safety valve 3 bar Filling/drain valve, diaphragm pressure expansion tank connection, 2 ball stop valves Inner bore for heating flow/return flow Rp ¾″ Compression fitting for gas connection	2001 257

Accessories

		Part No.
	**Extension set sanitary tube** for TopGas® combi essential for installation of connection set 3 2 pieces	6016 874
	**Mounting frame MR50 without diaphragm pressure expansion tank** For increasing the space to wall in order to simplify installation (e.g. flue gas duct directly on wall). Not essential except for connection set above.	
	TopGas® combi (21/18)	2029 696
	TopGas® combi (26/23)	2029 701
	TopGas® combi (32/28)	2029 702
	**Mounting frame MR110 with diaphragm pressure expansion tank and corrugated hose** for connection to connection set 3. Diaphragm pressure expansion tank with connection set bottom on site! Frame for fastening the Hoval TopGas® combi with built-in diaphragm pressure expansion tank and connection hose. Content 12 l/pre-pressure 0.75 bar	
	TopGas® combi (21/18)	6016 863
	TopGas® combi (26/23)	6016 864
	TopGas® combi (32/28)	6016 865
	**Cover** for TopGas® classic (12-30), TopGas® combi (21/18,26/23,32/28) to cover the connection range gas Heating supply and return in combination with connection set 3 Combination with/without mounting frame MR50/MR110 possible	2029 787
	**Flow temperature monitor** for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover.	
	Clamp-on flow temperature monitor RAK-TW1000S with retaining strap, without cable and plug.	242 902
	**Gas valve, passage DN 15, R ½"** with thermally releasing cut-off device	2012 075
	**Gas valve, corner version DN 15, R ½"** with thermally releasing cut-off device	2012 076

Accessories

		Part No.
	**Compression fitting (R ½" x 15)** For gas valve when no connection set or finery panel is used for pre-installation.	2001 824
	**Compression fitting (R ¾" x 22)** For flow/return when no connection set or finery panel is used for pre-installation.	2006 330
	**Sludge separator made of technopolymer with magnet: DM PO 1"** for horizontal and vertical pipelines with threaded connections IT (ISO 228-1) for operating media: water, glycol solutions Maximum glycol content: 30 % Max. operating pressure: 3 bar Operating temperature range: 0 ... 90 °C Magnetic strength: 2 x 0.3 T Optionally with insulating half shells Kv 10.5 m³/h Materials Casing: PA66G30 Sludge separator cover: PA66G30 Upper cap: brass EN 12164 CW614N Bleeder screw: Brass EN 12164 CW614N T-nut for T-piece: PPSG40 T-piece: brass EN 1982 CB 753S Seals: EPDM Drain valve with hose connection: Brass EN 12165 CW617N Weight: 1.5 kg	2054 376
	**Insulation for sludge separator DM PO 1"** 10 mm insulating caps made of PE-X foam Thermal conductivity 0.035 W/mK Fire resistance (DIN 4102): class B2	2085 524
	Additional sludge separators see "Various system components"	
	**Heating controller set RS-OT** (Not for mixing operation!) For 1 heating circuit without mixing operation Flow temperature control controlled by atmospheric conditions with outdoor sensor, immersion sensor (calorifier sensor) and overridable room temperature sensor. Can be implemented as a room temperature control without outdoor sensor. Only wall mounting possible!	6020 566

Services

Services and associated scope of services
see separate catalogue “Hoval Services”

Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.

Part No.

TopGas® combi (21/18, 26/23, 32/28)

Type			(21/18)	(26/23)	(32/28)
• Nominal heat output at 80/60 °C, natural gas		kW	5.4-17.8	6.9-22.8	7.1-26.3
• Nominal heat output at 50/30 °C, natural gas		kW	5.9-18.6	7.6-23.4	7.8-27.1
• Nominal heat output at 80/60 °C, propane [1]		kW	5.7-17.8	7.3-22.8	7.3-26.3
• Nominal heat output at 50/30 °C, propane [1]		kW	6.3-18.6	8.0-23.4	8.0-27.4
• Nominal heat input with natural gas [2]		kW	5.6-18.7	7.1-23.7	7.2-27.3
• Nominal heat input domestic water heating, natural gas [2]		kW	5.6-22.1	7.1-28.0	7.5-32.7
• Nominal heat input with propane [1]		kW	5.9-18.7	7.5-23.7	7.5-27.3
• Operating pressure heating min./max. (PMS)		bar	1/3	1/3	1/3
• Operating temperature max. (T_{max})		°C	85	85	85
• Boiler water content ($V_{(H20)}$)		l	1.4	1.7	2.0
• Flow resistance boiler				see diagram	
• Minimum circulation water quantity		l/h	180	180	180
• Boiler weight (without water content, incl. cladding)		kg	30	33	36
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV)		%	95.4/85.9	96.2/86.7	96.5/86.9
• Boiler efficiency at 30 % partial load operation (EN 15502) (NCV/GCV)		%	107.1/96.5	107.9/97.2	108.5/97.7
• Room heating energy efficiency					
- without control	ηs	%	91	92	93
- with control	ηs	%	93	94	95
- with control and room sensor	ηs	%	95	96	97
• Water heating energy efficiency	ηwh	%	83 (L)	85 (XL)	85 (XL)
• NOx class (EN 15502)			-	-	-
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	27	34	51
• O_2 content in flue gas at min./max. nominal heat output		%	5.5/5.1	5.5/5.1	5.5/5.1
• Heat loss in standby mode		Watt	38	38	38
• Dimensions			see table of dimensions		
• Gas flow pressure min./max.					
- Natural gas E/LL		mbar	18-50	18-50	18-50
- Propane		mbar	28-50	28-50	28-50
• Gas connection values at 15 °C/1013 mbar:					
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.97 kWh/m^3		m^3/h	0.56-1.88	0.71-2.38	0.72-2.74
- Natural gas LL – (Wo = 12.4 kWh/m^3) NCV = 8.57 kWh/m^3		m^3/h	0.56-1.88	0.71-2.38	0.72-2.74
- Propane [1] (NCV = 25.9 kWh/m^3)		m^3/h	0.23-0.72	0.29-0.92	0.29-1.05
• Operating voltage		V/Hz	230/50	230/50	230/50
• Electrical power consumption (incl. pump) min./max.		Watt	15/80	15/80	15/80
• Standby		Watt	0	2	2
• Type of protection [3]		IP	X4D	X4D	X4D
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40
• Sound power level					
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	45	45	45
• Condensate quantity (natural gas) at 50/30 °C		l/h	1.8	2.2	2.6
• pH value of the condensate		approx.	4.2	4.2	4.2
• Construction type			B23, B33, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)		
• Flue gas system					
- Temperature class			T 120	T 120	T 120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	31.0	39.3	45.3
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	8.4	10.6	10.8
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	85	85	85
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	64	64	64
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	32	32	32
- Max. permissible temperature of the combustion air		°C	50	50	50
- Flow rate combustion air		Nm^3/h	33.3	42.2	49.2
- Maximum supply pressure for combustion air supply and flue gas line		Pa	75	75	75
- Maximum draught/depression at flue gas outlet		Pa	−50	−50	−50

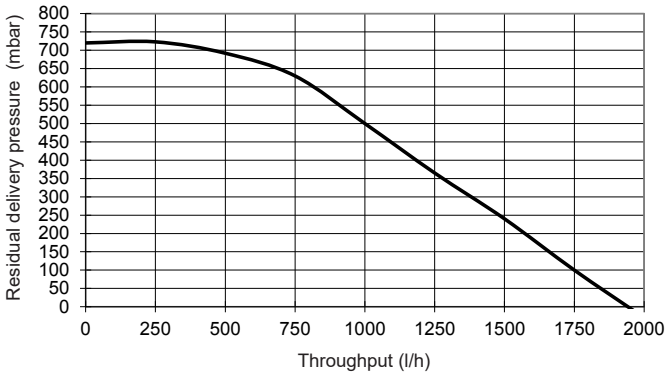
[1] Data related to NCV. TopGas® combi can also be operated with propane.

[2] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without new settings.

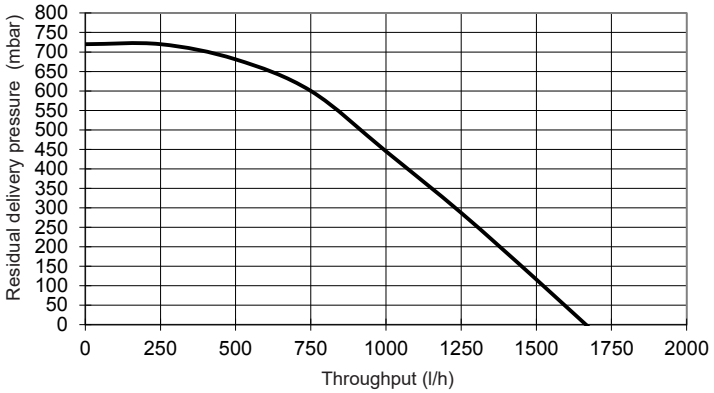
[3] For construction types B23 and B33, type of protection IP20

Maximum residual delivery pressure of heating pump

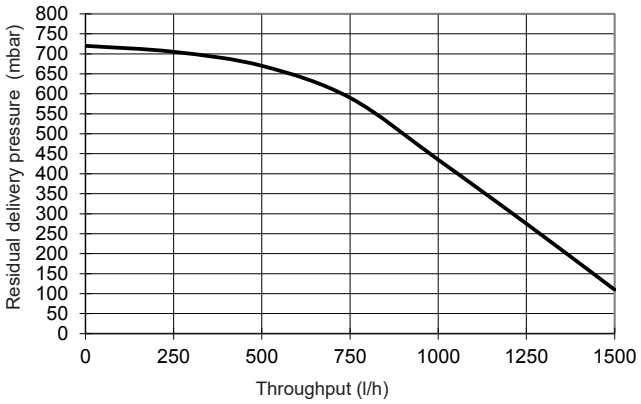
TopGas® combi (21/18)



TopGas® combi (26/23)



TopGas® combi (32/28)



Hot water output with TopGas® combi

TopGas® combi type	Hot water output dm³/10 min [1] 40 °C	Hot water output dm³/h [2] 40 °C	Hot water output dm³/10 min [1] 45 °C	Hot water output dm³/h [2] 45 °C	Max. flow rate through boiler dm³/10 min	Number of flats [3]	Stand-by deficiency qB (70 °C) Watt
(21/18) [4]	97	579	60	360	60	1	60
(26/23) [4]	126	759	80	480	80	1	80
(32/28) [4]	145	869	124	745	95	1	95

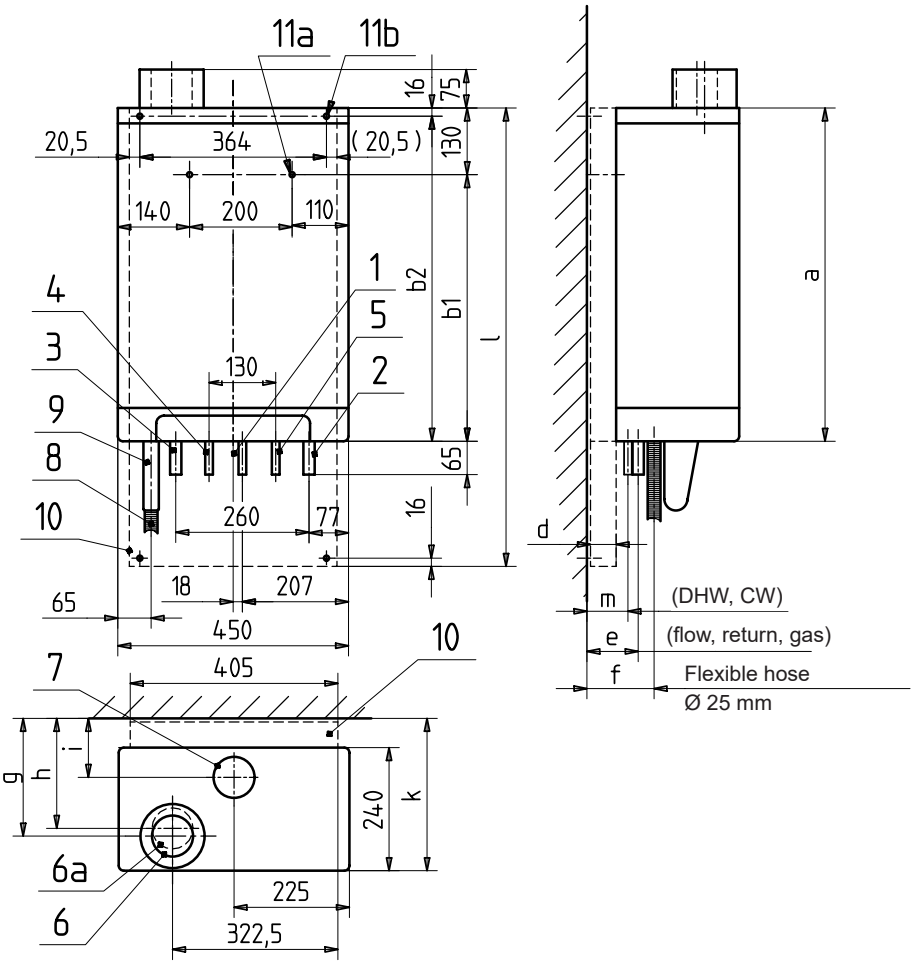
[1] Hot water peak performance in 10 min.
Value can only be attained by addition of cold water to the boiler!
[2] Hot water output per hour.
Value can only be attained by addition of cold water to the boiler!
[3] Flat (3-4 rooms with 3-4 people, 1 bathtub with approx. 150 litres, 1 washbasin, 1 sink)
[4] Data indicated for hot water output valid at input pressure (domestic water/sanitary side) of 2 bar!

Notice
TopGas® combi may only be operated where the water hardness is less than 15 °dH (German degrees of hardness).

TopGas® combi (21/18, 26/23, 32/28)

Minimum spaces
(Dimensions in mm)

- Sideways 50 mm
- Space to ceiling dependent on the flue gas system
- Front 500 mm



1 Gas connection Ø 15 mm (for compression fitting)
2 Return heating Ø 22 mm (for compression fitting)
3 Flow heating Ø 22 mm (for compression fitting)
4 Domestic hot water (DHW) Ø 15 mm (for compression fitting)
5 Cold water (CW) Ø 15 mm (for clamping ring)
6 Concentrical flue gas/combustion air connection C80/125 including measuring opening
6a Single combustion air connection E80 (optional)
7 Connection for external combustion air supply Ø 80 mm (option)
8 Condensate connection Ø 32 mm (hose Ø 25/21 mm)
9 Siphon
10 Mounting frame, width 50 mm or 110 mm with diaphragm pressure expansion tank optional, see Accessories

11a Drill hole Ø 10 mm without mounting frame
11b Drill hole Ø 10 mm with mounting frame

TopGas® combi type	a	b1	b2	d	e	f	g	h	i	k	l	m
(21/18)	590	460		0	50	75	185	170	65	247	-	30
(21/18) with mounting frame (MR50)	590		574	50	100	125	235	220	115	297	834	80
(21/18) with mounting frame with diaphragm pressure expansion tank (MR110)	590		574	110	160	185	295	280	175	357	834	140
(26/23)	650	520		0	50	75	185	170	65	247	-	30
(26/23) with mounting frame (MR50)	650		634	50	100	125	235	220	115	297	894	80
(26/23) with mounting frame with diaphragm pressure expansion tank (MR110)	650		634	110	160	185	295	280	175	357	894	140
(32/28)	710	580		0	50	75	185	170	65	247	-	30
(32/28) with mounting frame (MR50)	710		694	50	100	125	235	220	115	297	954	80
(32/28) with mounting frame with diaphragm pressure expansion tank (MR110)	710		694	110	160	185	295	280	175	357	954	140

Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water can be both fully demineralised and also merely softened.

Heating water

- In the case of **full demineralisation of the filling and replacement water**, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.
- In the case of **softening the filling and replacement water**, the following conditions must be complied with:
  - Electrical conductivity of the heating water for operation with water containing salts: > 100 µS/cm to ≤ 1500 µS/cm
  - pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up) must be equipped with a system separation.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Domestic water quality

TopGas® combi may only be operated where the domestic water quality is less than 13 d°H (german degrees of hardness).

Heating room

Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. wash-, dryer-, work room, hairdressers and so on).
Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. For direct combustion air supply (LAS system), a separator C80/125 -> E80 PP can be used.

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-dependent operation*:
  A minimal ventilation outlet of at least 150 cm^2 or 2 x 75 cm^2 cross-section is necessary for of boiler output up to 50 kW. For each further kW output 2 cm^2 more cross-section must be provided.
- *Room air-independent operation with separate combustion air pipe to the boiler*:
  0.8 cm^2 per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.

Gas connection

Commissioning

- Start-up is to be carried out only by a specialist.
- Burner setting values according to the installation instructions.

Manual gas shut-off valve and gas filter

Immediately in front of the boiler a manual gas shut-off device (valve) must be installed according to relevant regulations. Should the local regulations or conditions demand this, an approved gas filter must be installed in the gas supply pipe between the gas tap (thermally releasing) and the boiler in order to prevent malfunction due to foreign particles being carried along with the gas.

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.
- A gas pressure controller to reduce the boiler inlet pressure must be installed on-site for propane.

Gas pressure

Necessary gas flow pressure at the boiler inlet: natural gas min. 18 mbar, max. 50 mbar. Propane min. 28 mbar, max. 50 mbar.

Sludge separator

Installation of a sludge separator with magnetic ring in the gas boiler return is recommended.

Minimum heating water circulation quantity

- Depending on the boiler type, different minimum circulating water quantities are required through the boiler. For details, see the corresponding data sheets.
- During burner operation, the circulating pump must be constantly in operation and the minimum heating water circulation quantity must be guaranteed.
- After each burner switch-off, the circulating pump must be in operation for at least 2 minutes (is guaranteed by the boiler controller).

Boiler on the top storey of the building

If the gas boiler TopGas® combi is built in in a roof heating centre, an external water pressure switch must be provided.

Condensate drainage

- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas line can be discharged via the boiler. A condensate trap is no longer needed in the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic:
    PVC, PE, PP, ABS and UP

Diaphragm pressure expansion tank

- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The diaphragm pressure expansion tank has to be installed at the diaphragm pressure expansion tank connection (pump intake side) (see “Dimensions”).
- Starting from 70 °C an intermediate tank is necessary.

Flue gas system

- Gas boilers must be connected to a certified and approved flue gas system such as flue gas lines.
- Flue gas lines must be gas-, condensate- and over pressure-tight.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. temperature class T120.
- A flue gas temperature limiter is integrated into the boiler.

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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2026 - 04 | Subject to modifications

Your Hoval partner

Hoval

CATALOGUE

Hoval TopGas® classic

Wall-hanging gas condensing boiler TopGas® classic (12-30)

Hoval | Responsibility for energy and environment

Table of contents

Hoval TopGas® classic (12-30)

Wall-hanging gas condensing boiler
- With condensing boiler technology
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Heat exchanger made of corrosion resistant aluminium alloy with integrated forced flow copper coil;
  heating gas side: aluminium
  water side: copper
- Minimal water circulation necessary (see technical data).
- Integrated:
  - speed-controlled high-efficiency pump
  - water pressure sensor
  - hand aspirator
  - flue gas temperature limiter
- Pre-mixing surface burner made of stainless steel
  - Modulating with gas/air group control
  - Automatic ignition
  - Ionisation guard
- Wall-hanging gas condensing boiler fully clad with varnished white steel plates

Basic boiler control panel
- Gas firing sequence controller with monitoring unit
- Modulating burner control
- Main switch “0/1”
- Operation and fault indication
- Regulation of hot water production by means of sensor or by thermostatic demand.
- For connecting a maximum of 1 room control device or 1 remote control with room sensor.

Incl. control, optionally in two different versions:
- RS-OT controller
- TopTronic® E controller

Optional
- Free-standing calorifier TopVal (130,160)
- Gas valve
- With mounting frame
- With mounting frame and diaphragm pressure expansion tank
- Connection set

Delivery
- Wall-hanging gas condensing boiler fully clad
- Mounting material
- Instruction package
- Appliance handbook

RS-OT controller
- For 1 heating circuit without mixing operation
- Controlled by atmospheric conditions for gliding boiler water temperature
- With integrated overplugable room temperature sensor
- Located in boiler/living room
- Outdoor sensor
- Immersion sensor (calorifier sensor)

Cannot be installed in the boiler control panel! Only wall mounting possible!

Model range

TopGas® classic type		Nominal heat output 40/30 °C kW
(12)	A	3.8-12.0
(18)	A	5.7-18.0
(24)	A	7.7-24.0
(30)	A	9.2-30.0

A⁺⁺⁺ → D

Energy efficiency class of the compound system with control

Delivery
- Wall-hanging gas condensing boiler fully clad
- Control separately packed, mounting on-site

TopTronic® E controller
As supplement for basic boiler control panel
Cannot be installed in the boiler control panel! Only wall mounting possible!

Control panel
- Colour touchscreen 4.3 inch
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module
- Colour touchscreen 4.3 inch
- Simple, intuitive operating concept
- Display of the most important operating statuses
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with online HovalConnect)
- Adaptation of the heating strategy based on the weather forecast (with online HovalConnect)

TopTronic® E basic module heat generator TTE-WEZ
- Control functions integrated for
  - 1 heating/cooling circuit with mixer
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit
  - bivalent and cascade management
- RAST 5 basic plug set
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- Cable set ZE2 for connecting the TopTronic® E control to the basic boiler control panel

Wall casing with control module cut-out G-510 BM
- Suitable for installing
  - 1 basic module plus 1 module expansion or
  - 1 basic module plus 1 controller module or
  - 2 controller modules plus 1 module expansion or
  - 1 controller module plus 2 module expansions or
  - 3 controller modules

Options for TopTronic® E controller
- Can be expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be networked with a total of up to 16 controller modules:
  - heating circuit/hot water module
  - solar module
  - buffer module
  - measuring module

No additional module expansions or controller modules can be installed in the boiler control panel!

The supplementary plug set must be ordered in order to use expanded controller functions.

Further information about the TopTronic® E see “Controls”

Delivery
- Wall-hanging gas condensing boiler fully clad
- Control and wall casing separately packed, mounting on-site

Floor-mounted/free-standing calorifier TopVal (130,160)
- Water heater with fixed, smooth pipe enamelled stainless steel heat exchanger.
- Floor-mounted calorifier for TopGas® classic (12-30)
- Magnesium protection anode
- Thermal insulation using HCFC free PU foam, with foil jacket, white

Delivery
- Calorifier and thermal insulation completely installed

Calorifier CombiVal ERW (200), white
- Calorifier made of steel, enamelled inside.
- Smooth pipe heat exchanger enamelled, built in.
- Free-standing calorifier for TopGas® classic (12-30)
- Magnesium protection anode integrated.
- Flange for electric heating element.
- Thermal insulation made of polyurethane foamed on the calorifier, dismantable foil jacket, white, completely mounted.
- Pocket welded in including thermometer

On request
- Electric heating element

Delivery
- Calorifier and thermal insulation completely installed (foil jacket can be removed for installation)

Wall-hanging gas condensing boilers

Hoval TopGas® classic (12-30)

incl. RS-OT controller

Heat exchanger made of corrosion-proof aluminium alloy with integrated copper meander with forced flow. With modulating, pre-mixing surface burner made of stainless steel. Including basic boiler control panel and control RS-OT, fully clad.

TopGas® classic type	Nominal heat output 50/30 °C kW	Part No.
(12)	3.8-12.0	7014 088
(18)	5.7-18.0	7014 099
(24)	7.7-24.0	7014 100
(30)	9.2-30.0	7014 101

Boiler permissions

Hoval TopGas® classic (12-30):
SVGW certificate 06-073-4
CE product ID No. 0063BQ3155

Hoval TopVal (130,160):
SVGW certificate 0709-5264

Control cannot be installed in the boiler controller! Only wall installation possible!

Energy efficiency class
see “Description”

Hoval TopGas® classic (12-30)

incl. TopTronic® E controller

Version as above, but with TopTronic® E control in a separate wall casing WG-510 BM.

TopGas® classic type	Nominal heat output 50/30 °C kW	Part No.
(12)	3.8-12.0	7014 102
(18)	5.7-18.0	7014 103
(24)	7.7-24.0	7014 104
(30)	9.2-30.0	7014 105

Control cannot be installed in the boiler controller! Only wall installation possible!

Energy efficiency class
see “Description”

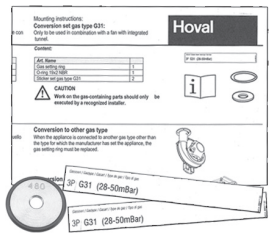
Hoval TopGas® classic (12-30)

Design as above but without controller.

TopGas® classic type	Nominal heat output 50/30 °C kW	Part No.
(12)	3.8-12.0	7013 515
(18)	5.7-18.0	7013 516
(24)	7.7-24.0	7013 517
(30)	9.2-30.0	7013 518

Energy efficiency class
see “Description”

Accessories



Modification set for propane
no external main gas valve possible!

TopGas® classic type	min. output kW (80/60 °C)	Part No.
(12)	3.5	2037 926
(18)	5.8	2057 295
(24)	7.4	2057 298
(30)	9.3	2057 299

Backflow check valve
for TopGas® classic (12-30),
TopGas® combi
for preventing the emergence
of flue gas from the boiler
for use with cascades or with
multi-use of flue gas lines

Part No. 2063 018

Simple flue gas connecting piece E80
for separate conduction of flue gas and
combustion air

Part No. 2029 057

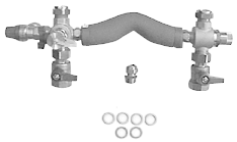
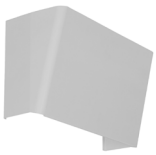
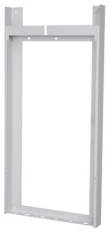
Automatic, lockable
quick air vent ⅜"
with removable cover for inspection
Casing and cover made of brass CW617N
Float made of polyethylene
Seal between tank and cover
with reinforced polyamide seal
Connection G ⅜" DIN-ISO228/1
Maximum operating pressure: 12 bar
Maximum operating temperature: 160 °C
Also suitable for water with additives
(glycol up to 50 %)
With automatic shut-off valve with
air breaker made of brass CW617N
Seal made of FKM, air breaker made of
heat-resistant polymer
Spring made of stainless steel

Part No. 2054 183

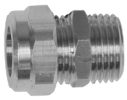
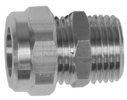
Visible console for preinstallation
for preinstallation of gas, heating flow
and return, cold and hot water
connections
Possible with all mounting frames or
directly on the wall!

Part No. 2025 779

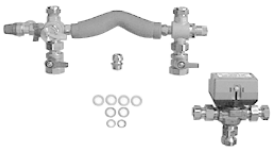
Accessories

		Part No.
	**Connection set 3** TopGas® classic (12-30), TopGas® combi (21/18, 26/23, 32/28) without calorifier without/with mounting frame Consisting of: flow fitting, return flow fitting with integrated bypass valve, safety valve 3 bar Filling/drain valve, diaphragm pressure expansion tank connection, 2 ball stop valves Inner bore for heating flow/return flow Rp ¾″ Compression fitting for gas connection	2001 257
	**Cover** for TopGas® classic (12-30), TopGas® combi (21/18,26/23,32/28) to cover the connection range gas Heating supply and return in combination with connection set 3 Combination with/without mounting frame MR50/MR110 possible	2029 787
	**Mounting frame MR50 without diaphragm pressure expansion tank** For increasing the space to wall in order to simplify installation (e.g. flue gas duct direct on wall). Not essential.	
	TopGas® classic (12)	2029 696
	TopGas® classic (18)	2029 701
	TopGas® classic (24,30)	2029 702
	**Mounting frame MR110 with diaphragm pressure expansion tank and corrugated hose** for connection to the connection set 3, 4 or 10. Frame for fastening the TopGas® classic with built-in diaphragm pressure expansion tank and connection hose. Content 12 l/pre-pressure 0.75 bar	
	TopGas® classic (12)	6016 863
	TopGas® classic (18)	6016 864
	TopGas® classic (24,30)	6016 865
	**Connection set 10** for Hoval TopGas® classic (12-30) and floor-mounted TopVal calorifier without/with mounting frame MR50/MR110 Consisting of: Flow fitting, return fitting with integrated overflow valve, Safety valve approx. 3 bar Filling/drain valve, diaphragm pressure expansion tank connection, 3-way valve Rp ¾″ 2 shut-off ball valves heating flow/return, internal thread Rp ¾″ Squeezing ring screw connection for gas connection	2025 577

Accessories

		Part No.
	**Gas valve, passage DN 15, R ½″** with thermally releasing cut-off device	2012 075
	**Gas valve, corner version DN 15, R ½″** with thermally releasing cut-off device	2012 076
	**Compression fitting** **(R ½″ x 15)** For gas valve when no connection set or finery panel is used for pre-installation.	2001 824
	**Compression fitting** **(R ¾″ x 22)** For flow/return when no connection set or finery panel is used for pre-installation.	2006 330
	**Sludge separator made of technopolymer with magnet: DM PO 1″** for horizontal and vertical pipelines with threaded connections IT (ISO 228-1) for operating media: water, glycol solutions Maximum glycol content: 30 % Max. operating pressure: 3 bar Operating temperature range: 0 ... 90 °C Magnetic strength: 2 x 0.3 T Optionally with insulating half shells Kv 10.5 m³/h Materials Casing: PA66G30 Sludge separator cover: PA66G30 Upper cap: brass EN 12164 CW614N Bleeder screw: Brass EN 12164 CW614N T-nut for T-piece: PPSG40 T-piece: brass EN 1982 CB 753S Seals: EPDM Drain valve with hose connection: Brass EN 12165 CW617N Weight: 1.5 kg	2054 376
	**Insulation for sludge separator DM PO 1″** 10 mm insulating caps made of PE-X foam Thermal conductivity 0.035 W/mK Fire resistance (DIN 4102): class B2	2085 524
	Additional sludge separators see “Various system components”	
	**3-way switching valve VC 4012 ¾″** for calorifier external thread ¾″ 230 V/50 Hz single wire control running time: 7 s incl. 1 m cable	6016 891

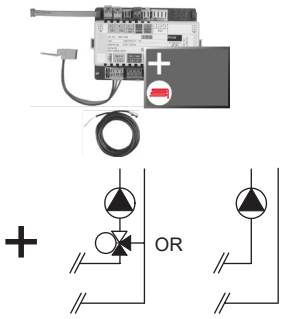
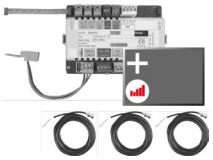
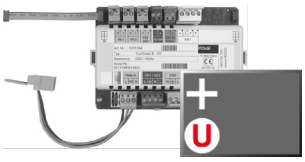
Free-standing calorifier

		Part No.
 B A⁺ → F	**Calorifier TopVal (130) round** made of steel, inside enamel painted, with permanently installed coil 0.96 m² and magnesium sacrificial anode Useful volume: 119 l Operating/test pressure: 10/13 bar (SVGW 6/13 bar) Operating temperature max.: 95 °C Foil jacket made of synthetic material, RAL 9010, pure white	6037 757
 B A⁺ → F	**Calorifier TopVal (160) round** made of steel, inside enamel painted, with permanently installed coil 1.01 m² and magnesium sacrificial anode Useful volume: 150 l Operating/test pressure: 10/13 bar (SVGW 6/13 bar) Operating temperature max.: 95 °C Foil jacket made of synthetic material, RAL 9010, pure white	6037 758
	**Connection set 4** for TopGas® classic (12-30) and free standing calorifier CombiVal with/without mounting frame MR50/MR110 Consisting of: flow fitting, return flow fitting with integrated bypass valve Safety valve 3 bar Filling/drain valve, diaphragm pressure expansion tank connection 3-way valve Rp ¾″ 2 ball stop valves Inner bore for heating flow/return flow Rp ¾″ Compression fitting for gas connection	2025 576
 B A⁺ → F	**Calorifier with thermal insulation** **Hoval CombiVal ERW (200) white** made from steel, enamelled on the inside With built-in enamelled plain-tube heat exchanger Magnesium protection anode built in Thermal insulation made of polyurethane rigid foam, foam-lined at the calorifier, removable foil jacket, colour white Technical data: Volume: 196 dm³ Energy efficiency class: B Inspection port flange Ø 180/120 mm Heating surface coil: 0.95 m² Operating temperature: max. 95 °C Operating pressure: max. 10 bar (SVGW 6 bar) Test pressure: 13 bar (SVGW 12 bar) Dimensions (H): 1464 mm, Ø 600 mm Tilting dimension: 1583 mm Weight: 77 kg Delivery: Calorifier, thermal insulation and thermometer mounted packaged and delivered SVGW No. 0503–4950	7015 961

Diaphgragm pressure expansion tanks, heating armature groups and wall distributors
see “Various system components”

TopTronic® E module expansions

for TopTronic® E basic module heat generator

	Part No.
	6034 576
TopTronic® E module expansion heating circuit TTE-FE HK Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module	
Notice The supplementary plug set may have to be ordered to implement functions differing from the standard!	
	6037 062
TopTronic® E module expansion heating circuit incl. energy balancing TTE-FE HK-EBZ Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module	
Notice The flow rate sensor set must be ordered as well.	
	6034 575
TopTronic® E module expansion Universal TTE-FE UNI Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module	
Notice Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented.	
Further information see “Controls” – “Hoval TopTronic® E module expansions” chapter	

Flow rate sensor sets
Plastic casing

Size	Connection inches	Flow rate l/min	Part No.
DN 8	G ¾″	0.9-15	6038 526
DN 10	G ¾″	1.8-32	6038 507
DN 15	G 1″	3.5-50	6038 508
DN 20	G 1¼″	5-85	6038 509
DN 25	G 1½″	9-150	6038 510

Brass casing

Size	Connection inches	Flow rate l/min	Part No.
DN 10	G 1″	2-40	6042 949
DN 32	G 1½″	14-240	6042 950

Accessories for TopTronic® E

		Part No.
	**TopTronic® E controller modules**	
	TTE-HK/WW TopTronic® E heating circuit/ hot water module	6034 571
	TTE-SOL TopTronic® E solar module	6037 058
	TTE-PS TopTronic® E buffer module	6037 057
	TTE-MWA TopTronic® E measuring module	6034 574
	**Supplementary plug set**	
	for basic module heat generator TTE-WEZ	6034 499
	for controller modules and module expansion TTE-FE HK	6034 503
	**TopTronic® E room control modules**	
	TTE-RBM TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070
	**Enhanced language package TopTronic® E** one SD card required per control module Consisting of the following languages: HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA,NL	6039 253
	**HovalConnect**	
	HovalConnect LAN	6049 496
	HovalConnect WLAN	6049 498
	HovalConnect Modbus	6049 501
	HovalConnect KNX	6049 593
	TopTronic® E interface modules	
	GLT module 0-10 V	6034 578
	**TopTronic® E sensors**	
	AF/2P/K Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
	TF/2P/5/6T Immersion sensor, L = 5.0 m	2055 888
	ALF/2P/4/T Contact sensor, L = 4.0 m	2056 775
	TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m	2056 776
	**Bivalent switch**	
	for various release or switching functions	
	Bivalent switch 1-piece	2056 858
	Bivalent switch 2-piece	2061 826
	**System casing**	
	System casing 182 mm	6038 551
	System casing 254 mm	6038 552
	**TopTronic® E wall casing**	
	WG-190 Wall casing small	6052 983
	WG-360 Wall casing medium	6052 984
	WG-360 BM Wall casing medium with control module cut-out	6052 985
	WG-510 Wall casing large	6052 986
	WG-510 BM Wall casing large with control module cut-out	6052 987

Further information
see “Controls”

	Part No.
 **Flow temperature monitor** for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover	
Clamp-on flow temperature monitor RAK-TW1000S with retaining strap, without cable and plug	242 902
 **BMS module 0-10 V/OT – OpenTherm (building management system)** no control unit TopTronic® E or RS-OT necessary power supply via OT bus Temp. control external with 0-10 V 0-1.0 V: no request 1.0-9.5 V: 0 ... 100 °C Cannot be installed in boiler control panel: - TopGas® classic (12-30) Can be installed in boiler control panel: - TopGas® classic (35-120)	6016 725
TopGas® classic (12-30) without controller on request	
 **Heating controller set RS-OT** (Not for mixing operation!) For 1 heating circuit without mixing operation Flow temperature control controlled by atmospheric conditions with outdoor sensor, immersion sensor (calorifier sensor) and overridable room temperature sensor. Can be implemented as a room temperature control without outdoor sensor. Only wall mounting possible!	6020 566
 **Immersion sensor TF/12N/2.5/6T, L = 2.5 m** for gas boiler with RS-OT Cable length: 2.5 m Sensor sleeve diameter: 6 x 50 mm, dewpoint-proof, operating temperature: −20 ... 105 °C, protection class: IP67	2056 791

Services

 **Services and associated scope of services** see separate catalogue “Hoval Services”	
Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.	

TopGas® classic (12-30)

Type			(12)	(18)	(24)	(30)
• Nominal heat output at 80/60 °C, natural gas		kW	3.4-11.5	5.3-17.2	7.0-22.9	8.7-28.5
• Nominal heat output at 50/30 °C, natural gas		kW	3.8-12.0	5.7-18.0	7.7-24.0	9.2-30.0
• Nominal heat output at 80/60 °C, propane [1]		kW	3.5-11.5	5.8-17.3	7.4-22.9	9.2-28.5
• Nominal heat output at 50/30 °C, propane [1]		kW	3.4-12.0	6.3-18.0	8.0-24.0	9.6-30.0
• Nominal heat input with natural gas [2]		kW	3.5-11.8	5.3-17.8	7.1-23.5	8.8-28.9
• Nominal heat input with propane [1]		kW	3.6-11.8	5.9-17.8	7.5-23.5	9.3-28.9
• Operating pressure heating min./max. (PMS)		bar	1/3	1/3	1/3	1/3
• Operating temperature max. (T_{max})		°C	85	85	85	85
• Boiler water content ($V_{(H20)}$)		l	1.4	1.7	2.0	2.0
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	180	180	180	180
• Boiler weight (without water content, incl. cladding)		kg	32	35	38	40
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV)		%	97.7/88.0	96.9/87.3	97.4/87.7	98.4/88.6
• Boiler efficiency at 30 % partial load operation (EN 15502) (NCV/GCV)		%	108.8/98.0	108.3/97.6	108.9/98.1	108.3/97.6
• Room heating energy efficiency						
- without control	ηs	%	92	92	93	93
- with control	ηs	%	94	94	95	95
- with control and room sensor	ηs	%	96	96	97	97
• NOx class (EN 15502)			-	-	-	-
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	27	27	24	53
• O_2 content in flue gas at min./max. nominal heat output		%	5.5/5.1	5.5/5.1	5.5/5.1	5.5/5.1
• Heat loss in standby mode		Watt	38	38	38	38
• Dimensions			see table of dimensions			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-50	17.4-50	17.4-50	17.4-50
- Propane		mbar	28-50	28-50	28-50	28-50
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.97 kWh/m³		m³/h	0.35-1.18	0.53-1.79	0.71-2.36	0.88-2.90
- Natural gas LL – (Wo = 12.4 kWh/m³) NCV = 8.57 kWh/m³		m³/h	0.41-1.38	0.62-2.08	0.83-2.74	1.03-3.37
- Propane [1] (NCV = 25.9 kWh/m³)		m³/h	0.14-0.46	0.23-0.69	0.29-0.91	0.36-1.12
• Operating voltage		V/Hz	230/50	230/50	230/50	230/50
• Electrical power consumption (incl. pump) min./max.		Watt	15/80	15/80	15/80	15/80
• Stand-by		Watt	2	2	2	2
• Type of protection [3]		IP	X4D	X4D	X4D	X4D
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	50	50	50	50
• Condensate quantity (natural gas) at 50/30 °C		l/h	1.1	1.6	2.1	2.7
• pH value of the condensate		approx.	4.2	4.2	4.2	4.2
• Construction type			B23, B33, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)			
• Flue gas system						
- Temperature class			T 120	T 120	T 120	T 120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	19.6	29.5	39.0	49.0
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	5.4	8.0	10.6	13.2
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	78	78	78	70
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	57	57	57	51
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	32	32	32	32
- Max. permissible temperature of the combustion air		°C	50	50	50	50
- Flow rate combustion air		Nm³/h	14.5	21.9	28.9	35.6
- Maximum supply pressure for combustion air supply and flue gas line		Pa	75	75	75	75
- Maximum draught/depression at flue gas outlet		Pa	−50	−50	−50	−50

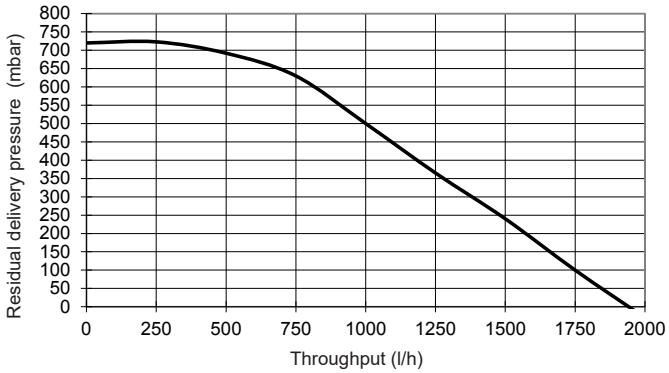
[1] Data related to NCV. TopGas® classic is also suitable for propane/butane (liquid gas) mixtures.

[2] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m³ is possible without new settings.

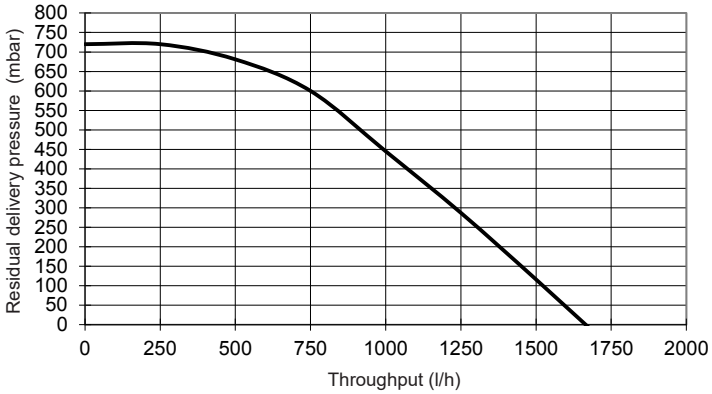
[3] For construction types B23 and B33, type of protection IP20

Maximum residual delivery pressure of heating pump

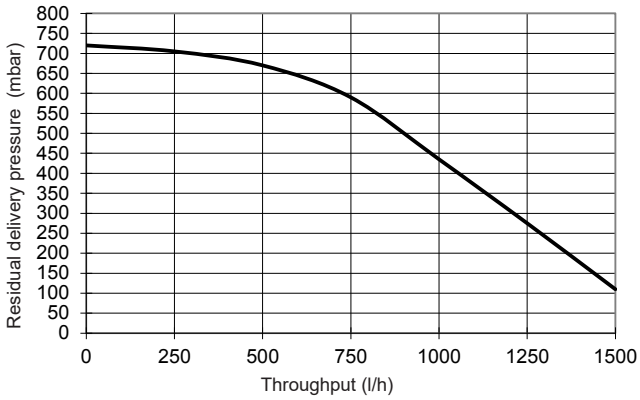
TopGas® classic (12)



TopGas® classic (18)



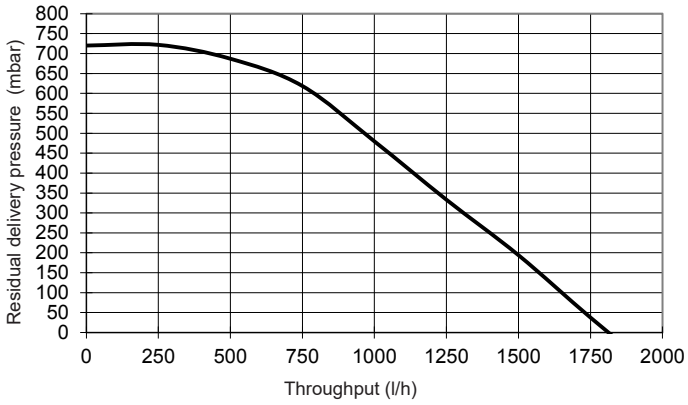
TopGas® classic (24,30)



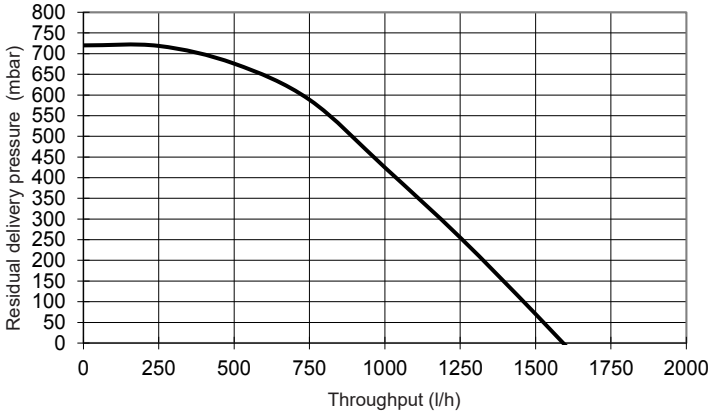
Maximum residual delivery pressure of heating pump TopGas® classic with connection set 4 or connection set 10

(reversing valve included in the set)

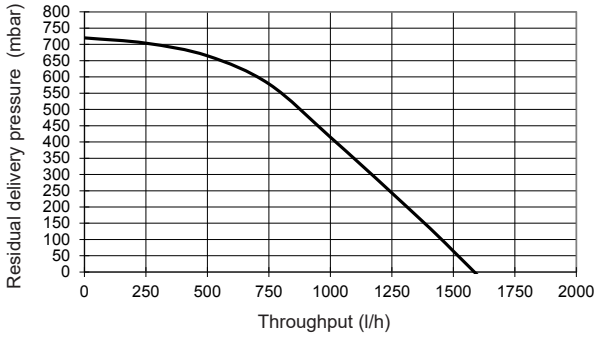
TopGas® classic (12)



TopGas® classic (18)



TopGas® classic (24,30)



Calorifier TopVal (130,160) and CombiVal ERW (200)

Type			TopVal (130)	TopVal (160)	CombiVal ERW (200)
• Capacity		dm³	119	150	196
• Operating pressure/test pressure		bar	10/13	10/13	10/13
• Max. operating temperature		°C	95	95	95
• Fire protection class			B2	B2	B2
• Heat loss at 65 °C		W	43	51	49
• Weight		kg	53	56	77
• Dimensions	Diameter	mm	590	590	600
	Height	mm	869	1036	1464
Heating register (built-in)					
• Heating surface		m²	0.96	1.01	0.95
• Heating water		dm³	6.7	7.1	6.4
• Flow resistance [1]		z-value	22	22	7
• Operating pressure/test pressure		bar	8/13	8/13	8/13
• Max. operating temperature		°C	95	95	110

[1] Flow resistance boiler in mbar = flow rate (m³/h)² x z

Hot water output TopVal, CombiVal with TopGas® classic, heating flow 80 °C

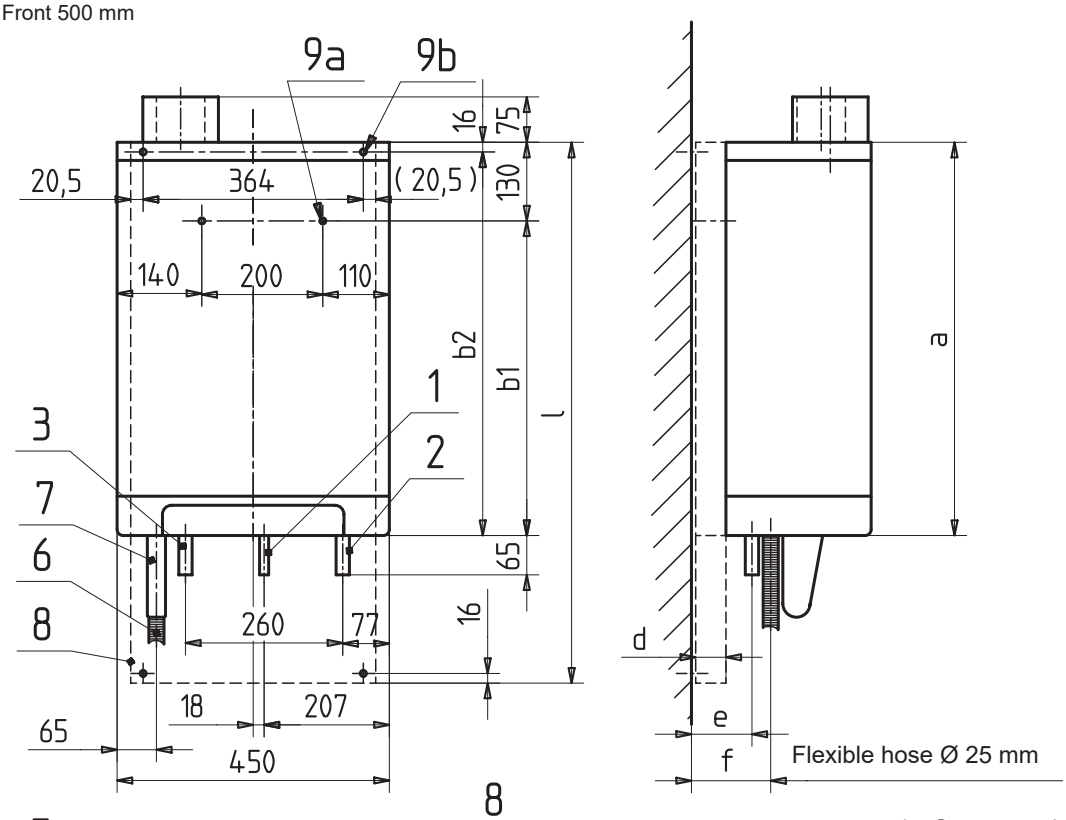
Boiler type		Calorifier type		Hot water output dm³/10 min [1] 45 °C	Hot water output dm³/h [2] 45 °C	Number [3] of flats
classic	(12)	TopVal	(130)	166	267	1
	(18)		(130)	179	411	1
	(24)		(130)	190	546	1
	(30)		(130)	198	610	1
classic	(12)	TopVal	(160)	199	267	1
	(18)		(160)	212	411	1-2
	(24)		(160)	223	546	1-2
	(30)		(160)	232	610	1-2
classic	(12)	CombiVal ERW	(200)	243	267	1-2
	(18)		(200)	256	411	1-2
	(24)		(200)	267	546	2
	(30)		(200)	276	610	2

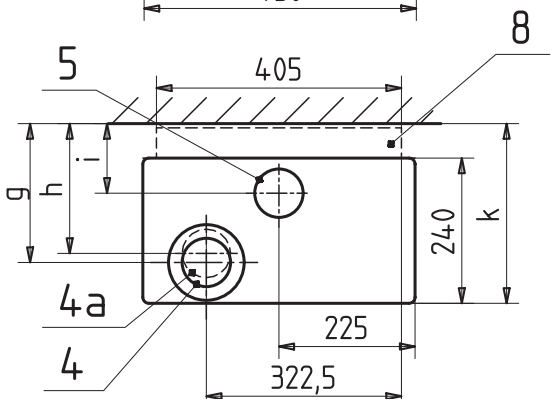
[1] Hot water peak performance in 10 min
[2] Hot water output per hour
[3] Flat (3-4 rooms with 3-4 people, 1 bathtub with approx. 150 litres, 1 washbasin, 1 sink)

TopGas® classic (12-30)

Minimal spaces
(Dimensions in mm)

- Sideways 50 mm
- Space to ceiling dependent on the used flue gas system
- Front 500 mm



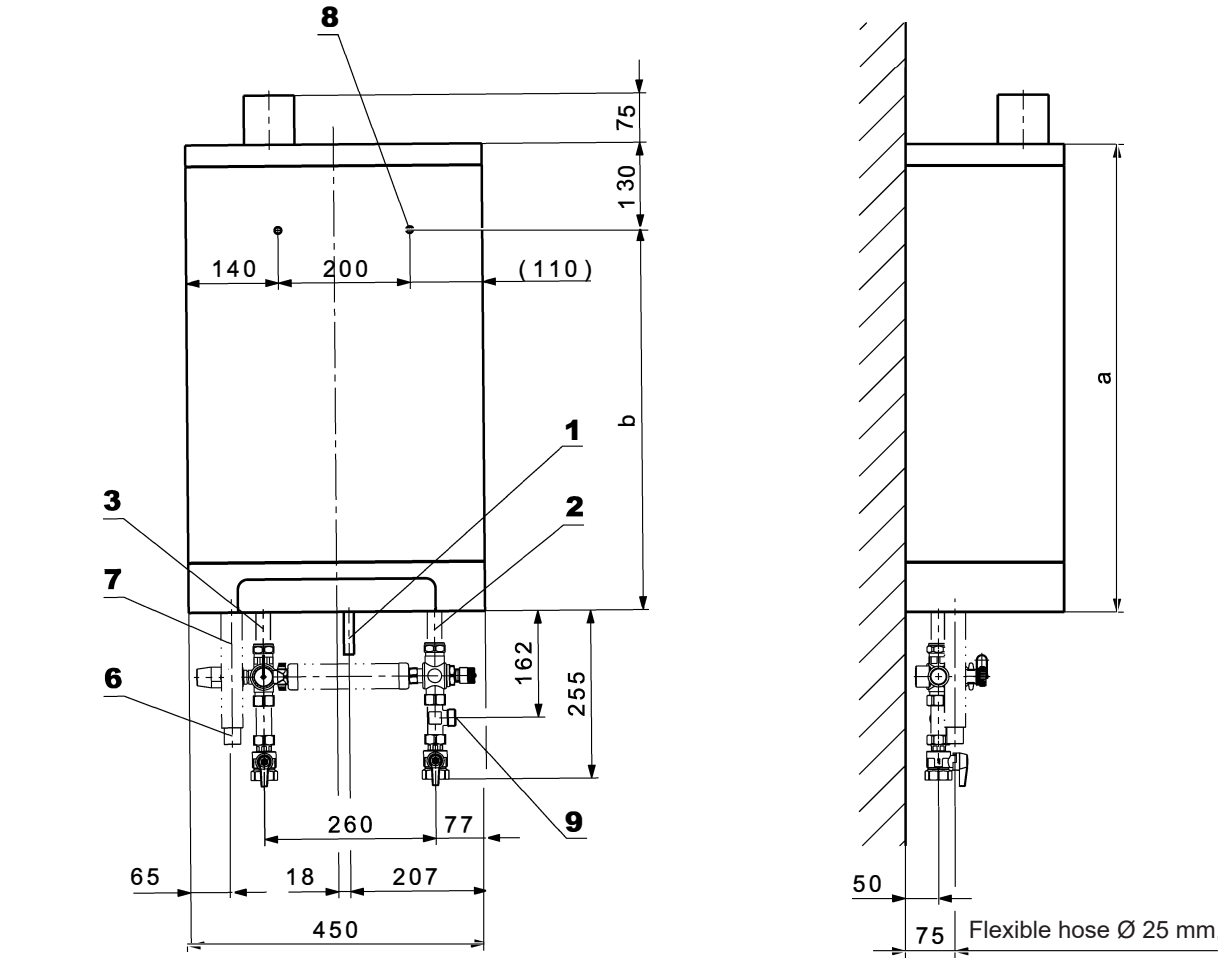


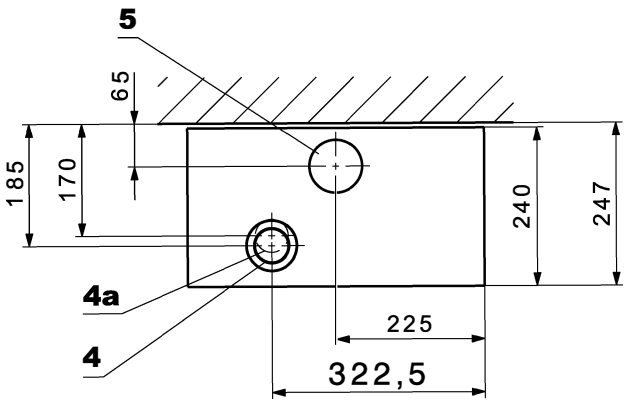
1 Gas connection Ø 15 mm (for compression fitting)
2 Return heating/calorifier Ø 22 mm (for compression fitting)
3 Flow heating/calorifier Ø 22 mm (for compression fitting)
4 Concentrical flue gas/combustion air connection C80/125 including measuring opening
4a Single flue gas connection E80, (optional), see Accessories
5 Connection for external combustion air supply Ø 80 mm (option)
6 Condensate drain Ø 32 mm (hose Ø 25/21 mm)
7 Siphon
8 Mounting frame, 50 mm or 110 mm with diaphragm pressure expansion tank optionally, see Accessories
9a Drill hole Ø 10 mm without mounting frame
9b Drill hole Ø 10 mm with mounting frame

TopGas® classic type	a	b1	b2	d	e	f	g	h	i	k	l
(12)	590	460		0	50	75	185	170	65	247	–
(12) with mounting frame (MR50)	590		574	50	100	125	235	220	115	297	834
(12) with mounting frame with diaphragm pressure expansion tank (MR110)	590		574	110	160	185	295	280	175	357	834
(18)	650	520		0	50	75	185	170	65	247	–
(18) with mounting frame (MR50)	650		634	50	100	125	235	220	115	297	894
(18) with mounting frame with diaphragm pressure expansion tank (MR110)	650		634	110	160	185	295	280	175	357	894
(24,30)	710	580		0	50	75	185	170	65	247	–
(24,30) with mounting frame (MR50)	710		694	50	100	125	235	220	115	297	954
(24,30) with mounting frame with diaphragm pressure expansion tank (MR110)	710		694	110	160	185	295	280	175	357	954

TopGas® classic (12-30) with connection set 3 without mounting frame

Minimal spaces
(Dimensions in mm)
- Sideways 50 mm
- Space to ceiling dependent on the used flue gas system
- Front 500 mm



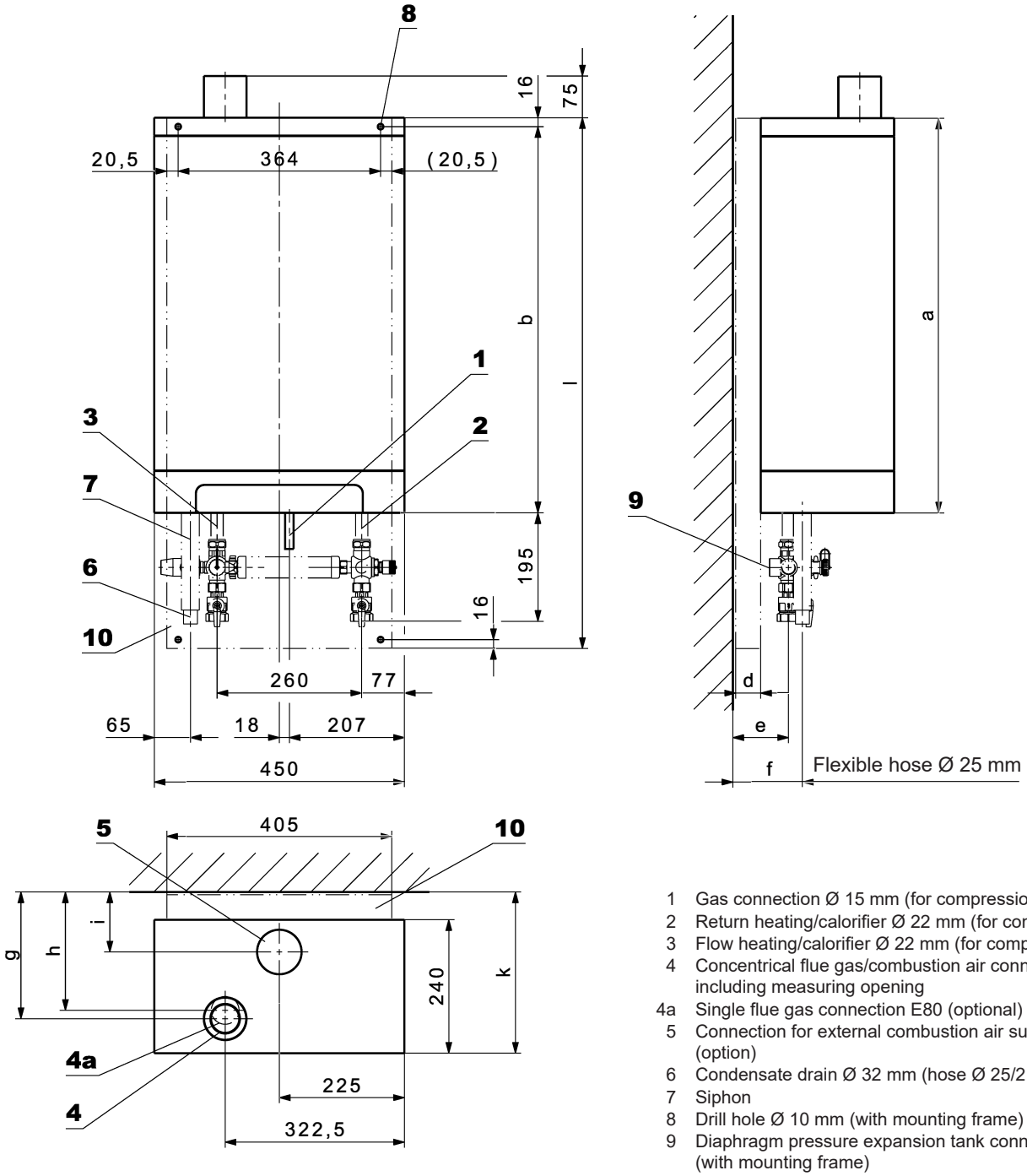


1 Gas connection Ø 15 mm (for compression fitting)
2 Return heating/calorifier Ø 22 mm (for compression fitting)
3 Flow heating/calorifier Ø 22 mm (for compression fitting)
4 Concentrical flue gas/combustion air connection C80/125 including measuring opening
4a Single flue gas connection E80 (optional)
5 Connection for external combustion air supply Ø 80 mm (option)
6 Condensate drain Ø 32 mm (hose Ø 25/21 mm)
7 Siphon
8 Drill hole Ø 10 mm (without mounting frame)
9 Diaphragm pressure expansion tank connection (without mounting frame)

TopGas® classic type	a	b
(12)	590	460
(18)	650	520
(24,30)	710	580

TopGas® classic (12-30) with connection set 3 and mounting frame

Minimal spaces
(Dimensions in mm)
- Sideways 50 mm
- Space to ceiling dependent on the used flue gas system
- Front 500 mm



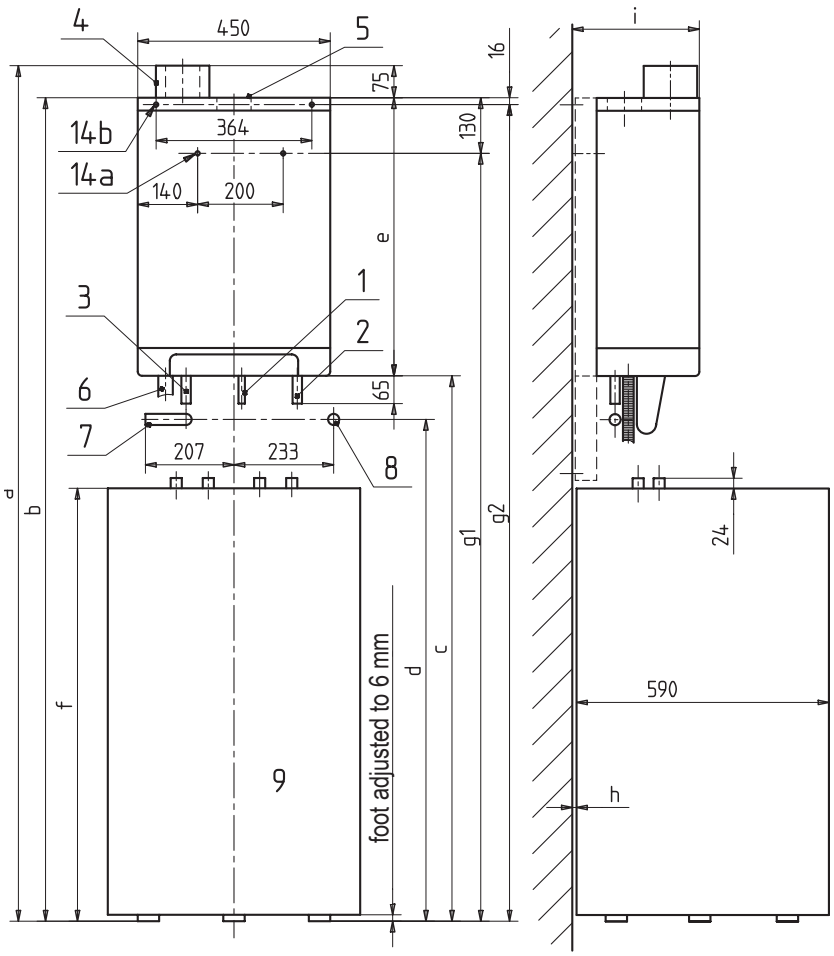
1 Gas connection Ø 15 mm (for compression fitting)
2 Return heating/calorifier Ø 22 mm (for compression fitting)
3 Flow heating/calorifier Ø 22 mm (for compression fitting)
4 Concentrical flue gas/combustion air connection C80/125 including measuring opening
4a Single flue gas connection E80 (optional)
5 Connection for external combustion air supply Ø 80 mm (option)
6 Condensate drain Ø 32 mm (hose Ø 25/21 mm)
7 Siphon
8 Drill hole Ø 10 mm (with mounting frame)
9 Diaphragm pressure expansion tank connection (with mounting frame)
10 Mounting frame 50 mm or 110 mm (optional)

TopGas® classic type	a	b	d	e	f	g	h	i	k	l
(12) with mounting frame (MR50)	590	574	50	100	125	235	220	115	297	834
(12) with mounting frame with diaphragm pressure expansion tank (MR110)	590	574	110	160	185	295	280	175	357	834
(18) with mounting frame (MR50)	650	634	50	100	125	235	220	115	297	894
(18) with mounting frame with diaphragm pressure expansion tank (MR110)	650	634	110	160	185	295	280	175	357	894
(24,30) with mounting frame (MR50)	710	694	50	100	125	235	220	115	297	954
(24,30) with mounting frame with diaphragm pressure expansion tank (MR110)	710	694	110	160	185	295	280	175	357	954

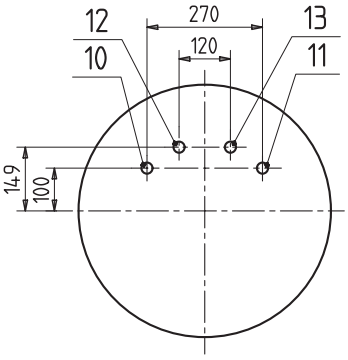
TopGas® classic (12-30) with calorifier TopVal (130,160) placed below

Minimal spaces
(Dimensions in mm)
- Sideways 50 mm
- Space to ceiling dependent on the flue gas system
- Front 500 mm

CombiVal ERW (200)
see Calorifiers



View from the top without TopGas®



1 Gas connection Ø 15 mm (for compression fitting, on site)
2 Return heating/calorifier Ø 22 mm (for compression fitting, on site)
3 Flow heating/calorifier Ø 22 mm (for compression fitting, on site)
4 Concentrical flue gas/combustion air connection C80/125 including measurement vents
5 Connection for external combustion air supply Ø 80 mm (option)
6 Condensate drain Ø 32 mm
7 Connection position laterally flow heating Rp ¾″
8 Connection positions behind return heating Rp ¾″
9 Calorifier TopVal (130,160)
10 Flow heating/calorifier G ¾″ ET
11 Return heating/calorifier G ¾″ ET
12 Hot water R ¾″ ET
13 Cold water R ¾″ ET

14a Drill hole Ø 10 mm without mounting frame
14b Drill hole Ø 10 mm with mounting frame

TopGas® classic with TopVal 130

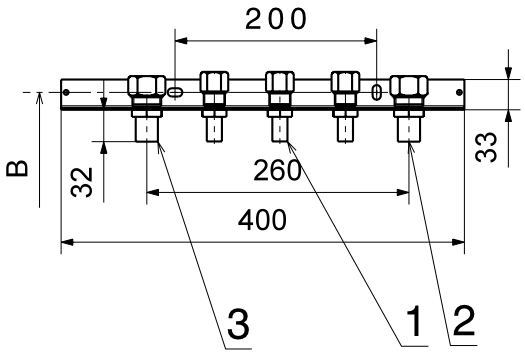
TopGas® classic type	a	b	c	d	e	f	g1	g2	h	i
(12)	1775	1700	1108	950	590	860	1570	–	10	247
(12) with mounting frame (MR50)	1775	1700	1108	950	590	860	–	1684	60	297
(12) with mounting frame with diaphragm pressure expansion tank (MR110)	1823	1748	1156	998	590	860	–	1732	10	357
(18)	1835	1760	1108	950	650	860	1630	–	10	247
(18) with mounting frame (MR50)	1835	1760	1108	950	650	860	–	1744	60	297
(18) with mounting frame with diaphragm pressure expansion tank (MR110)	1883	1808	1156	998	650	860	–	1792	10	357
(24,30)	1895	1820	1108	950	710	860	1690	–	10	247
(24,30) with mounting frame (MR50)	1895	1820	1108	950	710	860	–	1804	60	297
(24,30) with mounting frame with diaphragm pressure expansion tank (MR110)	1943	1868	1156	998	710	860	–	1852	10	357

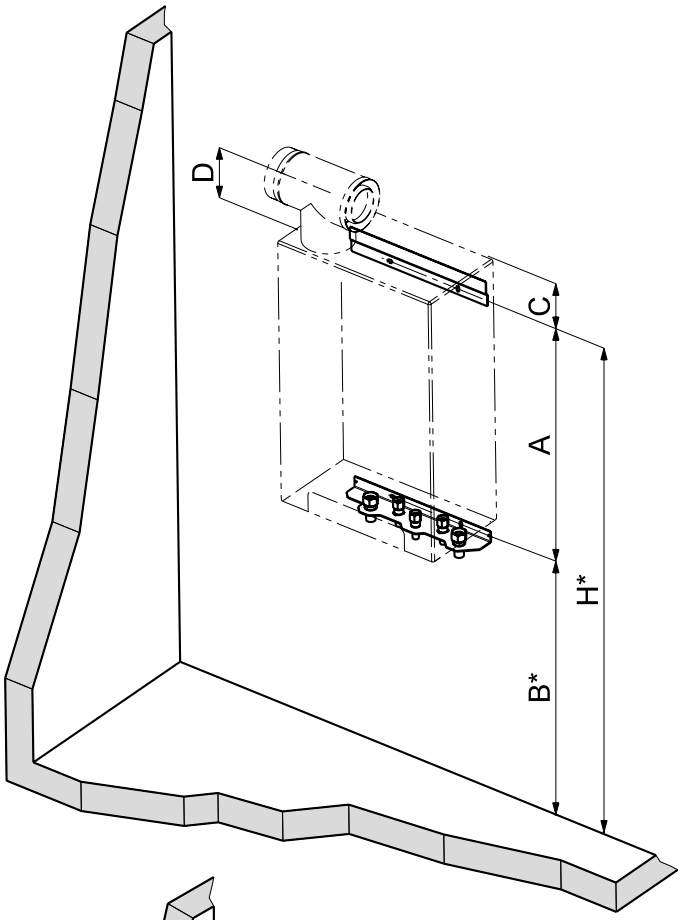
TopGas® classic with TopVal 160

TopGas® classic type	a	b	c	d	e	f	g1	g2	h	i
(12)	1942	1867	1275	1115	590	1027	1737	–	10	247
(12) with mounting frame (MR50)	1942	1867	1275	1115	590	1027	–	1851	60	297
(12) with mounting frame with diaphragm pressure expansion tank (MR110)	1990	1915	1323	1163	590	1027	–	1899	10	357
(18)	2002	1927	1275	1115	650	1027	1797	–	10	247
(18) with mounting frame (MR50)	2002	1927	1275	1115	650	1027	–	1911	60	297
(18) with mounting frame with diaphragm pressure expansion tank (MR110)	2050	1975	1323	1163	650	1027	–	1959	10	357
(24,30)	2062	1987	1275	1115	710	1027	1857	–	10	247
(24,30) with mounting frame (MR50)	2062	1987	1275	1115	710	1027	–	1971	60	297
(24,30) with mounting frame with diaphragm pressure expansion tank (MR110)	2110	2035	1323	1163	710	1027	–	2020	10	357

Measures for drill holes and visible console for preinstallation without mounting frame

(Dimensions in mm)





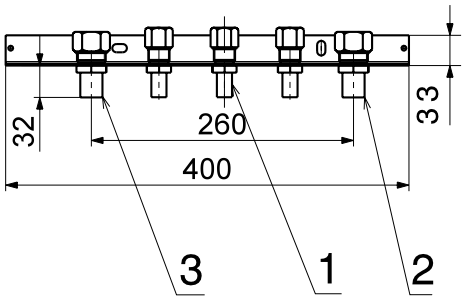
1 Gas connection Ø 15 mm (for compression fitting, on site)
2 Return heating/calorifier (for compression fitting, on site)
3 Flow heating/calorifier (for compression fitting, on site)

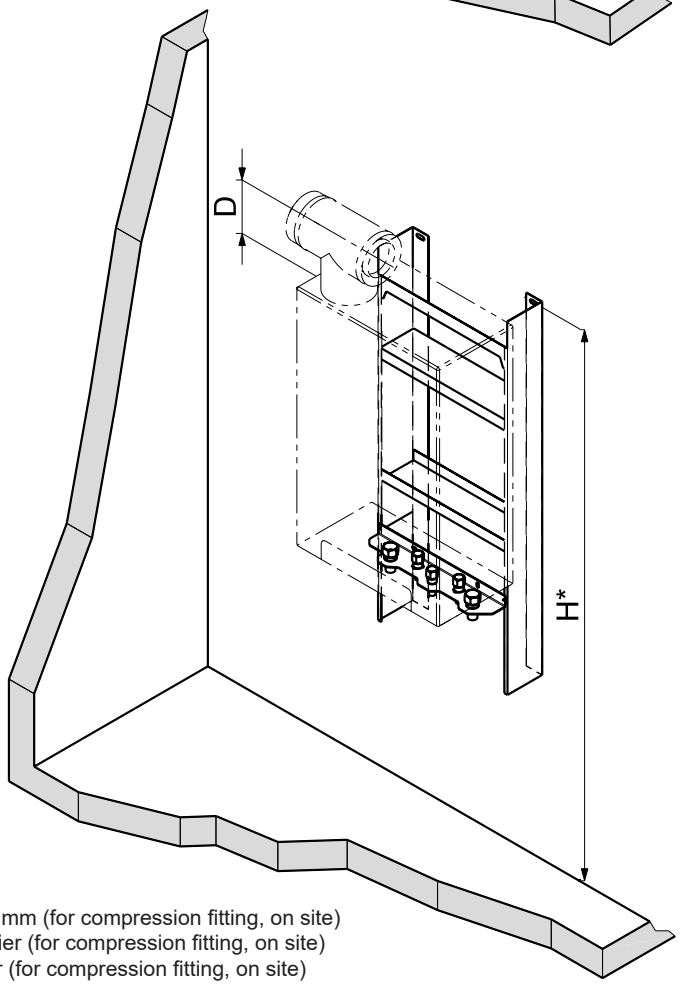
TopGas® classic type	TopVal type	A	B*	H*	C	D
(12)	(130)	518	1052	1570	130	175
	(160)	518	1219	1737	130	175
(18)	(130)	578	1052	1630	130	175
	(160)	578	1219	1797	130	175
(24,30)	(130)	638	1052	1690	130	175
	(160)	638	1219	1857	130	175

* Measures for drill hole

Visible console for preinstallation with mounting frame

(Dimensions in mm)





With mounting frame MR50

TopGas® classic type	TopVal type	H *	D
(12)	(130)	1684	175
	(160)	1851	175
(18)	(130)	1744	175
	(160)	1911	175
(24,30)	(130)	1804	175
	(160)	1971	175

With mounting frame MR110 with diaphragm pressure expansion tank

TopGas® classic type	TopVal type	H *	D
(12)	(130)	1732	175
	(160)	1899	175
(18)	(130)	1792	175
	(160)	1959	175
(24,30)	(130)	1852	175
	(160)	2020	175

* Measures for drill hole

1 Gas connection Ø 15 mm (for compression fitting, on site)
2 Return heating/calorifier (for compression fitting, on site)
3 Flow heating/calorifier (for compression fitting, on site)

Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water can be both fully demineralised and also merely softened.

Heating water

- In the case of **full demineralisation of the filling and replacement water**, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.

- In the case of **softening the filling and replacement water**, the following conditions must be complied with:
  - Electrical conductivity of the heating water for operation with water containing salts: > 100 µS/cm to ≤ 1500 µS/cm
  - pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up) must be equipped with a system separation.
- In the case of bivalent heating systems, the values of the heat generator with the strictest requirement for water quality must be complied with.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Heating room

Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. wash-, dryer-, work room, hairdressers and so on).
Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. For direct combustion air supply (LAS system), a separator C80/125 -> E80 PP can be used.

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-independent operation with separate combustion air pipe to the boiler*:
  0.8 cm^2 per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.
- *Room air-dependent operation*:
  A minimal ventilation outlet of at least 150 cm^2 or 2 x 75 cm^2 cross-section is necessary for of boiler output up to 50 kW. For each further kW output 2 cm^2 more cross-section must be provided.

Gas connection

Commissioning

- Initial commissioning is only allowed to be carried out by a qualified installer.
- Burner setting values according to the installation instructions.

Manual gas shut-off valve and gas filter

Immediately in front of the boiler a manual gas shut-off device (valve) must be installed according to relevant regulations. Should the local regulations or conditions demand this, an approved gas filter must be installed in the gas supply pipe between the gas tap (thermally releasing) and the boiler in order to prevent malfunction due to foreign particles being carried along with the gas.

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.
- A gas pressure controller to reduce the boiler inlet pressure must be installed on site for propane.

Gas pressure

Necessary gas flow pressure at the boiler inlet: natural gas min. 17.4 mbar, max. 50 mbar. Propane min. 28 mbar, max. 50 mbar.

Sludge separator

Installation of a sludge separator with magnetic ring in the gas boiler return is recommended.

Minimum heating water circulation quantity

- Depending on the boiler type, different minimum circulating water quantities are required through the boiler. For details, see the corresponding data sheets.
- During burner operation, the circulating pump must be constantly in operation and the minimum heating water circulation quantity must be guaranteed.
- After each burner switch-off, the circulating pump must be in operation for at least 2 minutes (is guaranteed by the boiler controller).

Heating boiler in the attic

If the gas boiler TopGas® classic is built-in in a roof control room, an external water pressure guard must be provided.

Condensate drainage

- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas line can be discharged via the boiler. A condensate trap is no longer needed in the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic:
    PVC, PE, PP, ABS and UP

Diaphragm pressure expansion tank

- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The diaphragm pressure expansion tank has to be installed at the diaphragm pressure expansion tank connection (pump intake side) (see “Dimensions”).
- Starting from 70 °C an intermediate tank is necessary.

Flue gas system

- Gas boilers must be connected to a certified and approved flue gas system such as flue gas lines.
- Flue gas lines must be gas-, condensate- and overpressure-tight.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. temperature class T120.
- A flue gas temperature limiter is integrated into the boiler.

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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2026 - 04 | Subject to modifications

Your Hoval partner

Hoval

CATALOGUE

Hoval TopGas® max

Wall-hanging gas condensing boiler TopGas® max (50-150)

Hoval | Responsibility for energy and environment

Table of contents

Hoval TopGas® max (50-150)

Wall-hanging gas condensing boiler
- With condensing boiler technology
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Heat exchanger made of stainless steel
- Built-in:
  - water pressure guard for water shortage protection
  - flue gas temperature sensor with flue gas limiter function
  - automatic quick aspirator
- Integrated backflow check valve on the combustion air side
- Pre-mixing surface burner made of stainless steel
  - Modulating with gas/air group control
  - Automatic ignition
  - Ionisation guard
- Minimum circulation water quantity required (see “Technical data”; appropriate hydraulic measures must be taken)
- Wall-hanging gas condensing boiler fully clad with coated white steel plates

Basic boiler control panel
- Automatic function device with monitoring unit
- Modulating burner control
- Operation and fault indication

Option
- Propane
- Free-standing calorifier

Delivery
- Wall-hanging gas condensing boiler fully clad with fastening material for wall installation

Model range

TopGas® max type		Nominal heat output 50/30 °C kW
(50)	A	9.1-49.9
(65)	A	14.9-69.9
(100)		22.3-99.9
(125)		26.3-125.3
(150)		29.8-150.4

A^{+++} → D

Energy efficiency class of the compound system with control

TopGas® max M

with integrated automatic function device LMS14 including control panel

Control panel
- Digital screen display
- Pushbuttons and rotary knob for operation
- Fault signalling lamp
- Information display

Control functions
- Control functions integrated for
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit

Operating mode selection
- Heating curve setting
- Hot water temperature setting
- Day programs/week programs
- Frost protection function
- Display of fault messages
- Error acknowledgement key
- Chimney sweep function key (safety temperature limiter test)

Options for controller
- Can be expanded with:
  - Room control unit
  - Cascade module
- Can be networked with up to 8 automatic function devices in total

Delivery
- Heating controller set separately packed, mounting on site

TopGas® max C

without control panel with integrated cascade module
For TopGas® max C (cascade) in combination with the TopGas® max M
Up to 7 TopGas® max C can be networked with the LMS14 of the TopGas® max M.

Delivery
Cascade module separately packed, installation on-site

Notice
Observe the notices on water quality, see “Engineering”!

Modbus connection

to TopTronic® E.
For controlling the TopGas® max M by the TopTronic® E using a temperature signal.
Various data points are transferred from the LMS14 automatic function device to the TopTronic® E.
(Modbus module see Accessories).

BMS connection 0-10 V

(building management system)
For control of the TopGas® max as part of a building management system
Temperature or performance control
external with 0-10 V
Integrated in the boiler

Wall-hanging gas condensing boiler

Hoval TopGas® max M (50-150)

Stainless steel heat exchanger with modulating stainless steel burner and automatic function device LMS14 and control panel fully clad.

TopGas® max M type	Nominal heat output 50/30 °C kW	Part No.
(50)	9.1-49.9	7019 687
(65)	14.9-69.9	7019 688
(100)	22.3-99.9	7019 689
(125)	26.3-125.3	7019 690
(150)	29.8-150.4	7019 691

Permission boiler

TopGas® max M (50-150):
CE product ID No. CE-0085CS0419

Energy efficiency class
see “Description”

Notice
TopGas® max M:
The cascade module must also be ordered for cascade integration.

Hoval TopGas® max C (50-150)

Stainless steel heat exchanger with modulating stainless steel burner with automatic function device LMS14 without control panel with cascade module fully clad.

TopGas® max C type	Nominal heat output 50/30 °C kW	Part No.
(50)	9.1-49.9	7019 692
(65)	14.9-69.9	7019 693
(100)	22.3-99.9	7019 694
(125)	26.3-125.3	7019 695
(150)	29.8-150.4	7019 696

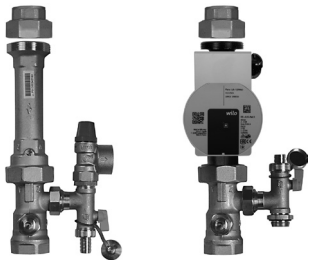
Permission boiler

TopGas® max C (50-150):
CE product ID No. CE-0085CS0419

Energy efficiency class
see “Description”

Accessories

	Part No.
Konversion kit for propane for TopGas® max (15-150)	6064 330



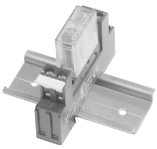
Connection set AS32-TG
consisting of:
Return:
- Shut-off valve with union nut 2″ side output with boiler fill and drain valve and connection nozzle G ¾″ (external) for connecting a diaphragm pressure expansion tank
- Speed-controlled high-efficiency pump, various versions

Flow:
- Fitting piece (180 mm) G 2″ with integrated non-return flap
- Shut-off valve with union nut 2″ and side outflow with safety valve DN 20, 3 bar up to 100 kW incl. boiler filling/draining valve

Connection set/pump type	Speed control	Part No.
AS 32 TG max SPS-I 10 for TopGas® max (50)	•	6064 405
AS 32 TG max SPS-I 12 for TopGas® max (65)	•	6064 406
AS 40 TG max SPS-I 12 for TopGas® max (100, 125)	•	6064 407

Speed control legend

PWM1 or PM1	PWM control signal heating



System component SB-R1K (relay) — 6013 064
For universal implementation
Relay with switchover contact 230 V/10 A
Without casing
Consisting of:
- relay R1K
- support/snap track (8 cm)
- incl. fastenings for installation

in boiler controller or wall casing

Notice
The boiler circuit pump must not be connected to the automatic function device LMS14. The circulating pump must be electrically connected on site via a suitable relay. Installation of the relay in a wall casing.

Connection set AS32-2/H — on request
for compact mounting
of all required fittings
of a direct circuit
consisting of:
2 thermometer ball valves
Wall bracket included separately
Connection T-piece DN 32
in the return flow for connecting the sludge separator bottom and
the diaphragm pressure expansion tank
on the side on connection set
installation option
for an overflow valve
incl. non-return valve

Diaphragm pressure expansion tanks, heating armature groups and wall distributors
see “Various system components”

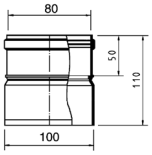
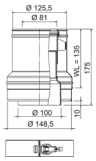
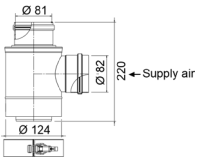
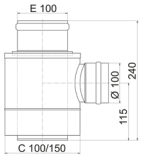
Accessories

		Part No.
	**Gas filter 70612/6b Rp ¾″** with instrument glands up/downstream of the filter cartridge (dia.: 9 mm) pore size of filter cartridge < 50 µm Max. pressure differential 10 mbar Max. inlet pressure 100 mbar	2007 995
	**Gas filter mod. 70602/6b Rp 1″** with instrument glands up/downstream of the filter cartridge (dia.: 9 mm) pore size of filter cartridge < 50 µm Max. pressure differential 10 mbar Max. inlet pressure 100 mbar	2007 996
	**Gas valve, passage DN 15, R ½″** with thermally releasing cut-off device	2012 075
	**Gas valve, passage DN 20, R ¾″** with thermally releasing cut-off device	2012 077
	**Gas valve, corner version DN 15, R ½″** with thermally releasing cut-off device	2012 076
	**Gas valve, corner version DN 20, R ¾″** with thermally releasing cut-off device	2012 078
	**Sludge separator DM with magnet** made of technopolymer (PO) or brass with insulation (MS)	

Type	Connection	Flow rate at 1.2 m/s flow speed	k_v value	
	inches	m^3/h	m^3/h	
DM PO	Rp 1¼″	2.1	10.5	2085 523
DM MS	Rp 1½″	5.4	63.2	2085 527
DM MS	Rp 2″	8.2	70.0	2085 528

Additional sludge separators
see “Various system components”

Heating armature group, wall distributor and safety group
see “Various system components”

		Part No.
	**Insulation for sludge separator DM PO 1¼"** 10 mm insulating caps made of PE-X foam Thermal conductivity 0.035 W/mK Fire resistance (DIN 4102): class B2	2086 031
	**Reducing part E100 -> E80 PP**	2015 245
	**Concentric reducing part C100/150 -> C80/125 PP** Painted white	2025 334
	**Separating piece C80/125 -> 2 x E80 PP** for room air independent operation for separate conduction of flue gas and combustion air.	2010 174
	**Separating piece C100/150 -> 2 x E100 PP** for UltraOil® (35,50), TopGas® classic (35-80), UltraGas® (50-100) for separate conduction of flue gas and combustion air (LAS system) Recommendation: If the air inlet at the facade is near a noise sensitive place (window of bedroom, terrace etc.), we recommend to use a sound absorber at the direct combustion air inlet.	2015 244

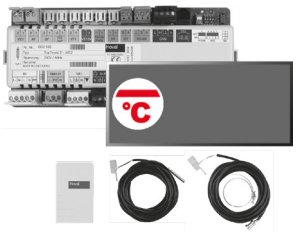
Boiler controller with heating controller set

		Part No.
	**Room control unit** QAA74 Digital multifunctional room unit with display and rotary pushbutton for LMS14 Basic display: - Status bar with operating states - Flow and return temperature - Outdoor temperature - Domestic water temperature - System information Setting possibilities: Heating: - Operating mode - Comfort setpoint temperature - Time program Domestic water: - Operating mode - Nominal setpoint - Time program	2085 440
	**Room station** QAA55 Room temperature display Remote control of the heating for automatic function device LMS14 Setting possibilities: - Operating mode - Room set value - Temporary change of time program (party key) With activated room influence: - Variable influence of the room temperature on the heating curve - Switch-on and off time optimization - Room-controlled rapid heat-up - Automatic heating curve adaptation - Room thermostat function	2085 450
	**Cascade module OCI345** Module for the data connection of the individual boilers for cascades and for the bus connection to the room station **Notice** TopGas® max C: The cascade module is already included in the scope of delivery. TopGas® max M: The cascade module must also be ordered for cascade integration.	2085 452
	**Modbus module OCI351** Module for controlling the TopGas® max M by the TopTronic® E via a temperature setting. For installation in the TopGas® max M	2085 886
	**Mixer circuit module set** Module for controlling a mixer circuit. Consisting of mixer circuit module, system casing for wall installation and ribbon cable (length: 1 m)	6066 063

		Part No.
	**Contact sensor NTC 10k** as flow sensor or cascade sensor for installation on pipes (diameter of 15 to 50 mm) for LMS14 or mixer circuit module	2085 453
	**Outdoor sensor** Outdoor sensor with NTC 1k for recording the outdoor temperature for LMS14	2085 454
	**Immersion sensor TF/NTC 10k/2/5** for calorifier or low loss header for LMS14 Temperature sensor NTC 10k Cable length: 2 m Immersion sleeve: 5 x 40 mm Operating temperature: 0 … 95 °C	2085 455
	**Immersion sensor TF/NTC 10k/1.5/5** Solar sensor for TopGas® max M with the automatic function device LMS14 Temperature sensor NTC 10k Cable length: 1.5 m Immersion sleeve: 5 x 40 mm Operating temperature: −30 … 200 °C	2085 456

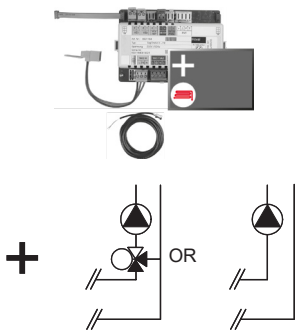
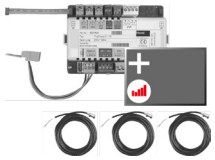
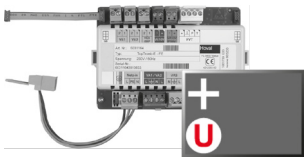
Heating controller set TopTronic® E ZE1

Notice
The TopTronic® E can communicate with the TopGas® max M via a Modbus connection or a 0-10 V connection.

	Part No.
	
TopTronic® E basic module heat generator TTE-WEZ Controller module for control of heat generators and the corresponding consumers with integrated control functions for: - Heat generator management - Additional heat generator management - Cascade management - 1 heating/cooling circuit without mixer - 1 heating/cooling circuit with mixer - 1 hot water charging circuit - var. additional functions Consisting of: - Fitting accessories - 1 outdoor sensor AF/2P/K - 1 immersion sensor TF/2P/5/6T/S1 L = 5.0 with plug, - 1 contact sensor ALF/2P/4/T/S1 L = 4.0 m with plug, - Basic plug set for basic module	6037 053
Notice If the basic module is used without Hoval heat generator then a TopTronic® E control module must be ordered separately!	
For RS-OT and TopTronic® E ZE1	
	
Flow temperature monitor for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover	
Clamp-on flow temperature monitor RAK-TW1000S with retaining strap, without cable and plug	242 902

TopTronic® E module expansions

for TopTronic® E basic module heat generator

		Part No.
	**TopTronic® E module expansion heating circuit TTE-FE HK** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module **Notice** The supplementary plug set may have to be ordered to implement functions differing from the standard!	6034 576
	**TopTronic® E module expansion heating circuit incl. energy balancing TTE-FE HK-EBZ** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module **Notice** The flow rate sensor set must be ordered as well.	6037 062
	**TopTronic® E module expansion Universal TTE-FE UNI** Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module **Notice** Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented. **Further information** see “Controls” – “Hoval TopTronic® E module expansions” chapter	6034 575

Flow rate sensor sets
Plastic casing

Size	Connection inches	Flow rate l/min	Part No.
DN 8	G ¾″	0.9-15	6038 526
DN 10	G ¾″	1.8-32	6038 507
DN 15	G 1″	3.5-50	6038 508
DN 20	G 1¼″	5-85	6038 509
DN 25	G 1½″	9-150	6038 510

Brass casing

Size	Connection inches	Flow rate l/min	Part No.
DN 10	G 1″	2-40	6042 949
DN 32	G 1½″	14-240	6042 950

Accessories for TopTronic® E

		Part No.
	**TopTronic® E controller modules**	
	TTE-HK/WW TopTronic® E heating circuit/ hot water module	6034 571
	TTE-SOL TopTronic® E solar module	6037 058
	TTE-PS TopTronic® E buffer module	6037 057
	TTE-MWA TopTronic® E measuring module	6034 574
	**Supplementary plug set**	
	for basic module heat generator TTE-WEZ	6034 499
	for controller modules and module expansion TTE-FE HK	6034 503
	Notice The supplementary plug set for the basic module heat generator (TTE-WEZ) is required for activation via the basic module heat generator TTE-WEZ with 0-10 V.	
	**TopTronic® E room control modules**	
	TTE-RBM TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070
	**Enhanced language package TopTronic® E**	6039 253
	one SD card required per control module Consisting of the following languages: HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA, NL	
	**HovalConnect**	
	HovalConnect LAN	6049 496
	HovalConnect WLAN	6049 498
	HovalConnect Modbus	6049 501
	HovalConnect KNX	6049 593
	TopTronic® E interface modules	
	GLT module 0-10 V	6034 578
	**TopTronic® E sensors**	
	AF/2P/K Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
	TF/2P/5/6T Immersion sensor, L = 5.0 m	2055 888
	ALF/2P/4/T Contact sensor, L = 4.0 m	2056 775
	TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m	2056 776
	**Bivalent switch**	
	for various release or switching functions	
	Bivalent switch 1-piece	2056 858
	Bivalent switch 2-piece	2061 826
	**System casing**	
	System casing 182 mm	6038 551
	System casing 254 mm	6038 552
	**TopTronic® E wall casing**	
	WG-190 Wall casing small	6052 983
	WG-360 Wall casing medium	6052 984
	WG-360 BM Wall casing medium with control module cut-out	6052 985
	WG-510 Wall casing large	6052 986
	WG-510 BM Wall casing large with control module cut-out	6052 987

Further information
see “Controls”

Services

Services and associated scope of services
see separate catalogue “Hoval Services”

Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.

Part No.

Hoval TopGas® max (50-150)

Type			(50)	(65)	(100)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	7.8-45.9	13.0-66.4	19.4-92.9
• Nominal heat output at 50/30 °C, natural gas [1]		kW	9.1-49.9	14.9-69.9	22.3-99.9
• Nominal heat output at 80/60 °C, propane [2]		kW	7.8-45.3	13.0-66.2	19.4-92.0
• Nominal heat output at 50/30 °C, propane [2]		kW	9.1-49.9	14.9-69.9	22.3-99.9
• Nominal heat input with natural gas [3]		kW	8.2-47.1	13.5-68.1	20.1-94.6
• Nominal heat input with propane [2]		kW	8.5-47.1	14.7-68.1	20.4-94.6
• Operating pressure heating min./max. (PMS)		bar	0.8-3	0.8-4.5	0.8-6
• Operating temperature max. (T_{max})		°C	90	90	90
• Boiler water content ($V_{(H20)}$)		l	3.0	4.5	6.5
• Flow resistance boiler		z value		see diagram	
• Minimum circulation water quantity		l/h	2000	2800	4100
• Boiler weight (without water content, incl. cladding)		kg	42	53	66
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	97.6/87.9	97.6/87.9	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	107.9/97.2	108.2/97.5	108.1/97.4
• Room heating energy efficiency (A+++ → D)	class		A	A	
- without control	ηs	%	92	92	92
- with control	ηs	%	94	94	94
- with control and room sensor	ηs	%	96	96	96
- annual energy consumption	Q_{HE}	GJ	83	124	177
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	37.8	28.1	26.4
• O_2 content in flue gas min./max. output		%	5.6/4.8	5.6/4.8	5.6/4.6
• Heat loss in standby mode		Watt	350	356	362
• Dimensions			see table of dimensions		
• Gas flow pressure min./max.					
- Natural gas E/LL		mbar	18-50	18-50	18-50
- Propane		mbar	37-50	37-50	37-50
• Gas connection values at 15 °C/1013 mbar:					
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.7 kWh/m³		m³/h	0.8-4.9	1.4-7.0	2.1-10.0
- Natural gas LL (G25) – (Wo = 12.4 kWh/m³) NCV = 8.13 kWh/m³		m³/h	1.0-5.8	1.7-8.4	2.5-11.9
- Propane (G31) (NCV = 24.4 kWh/m³) [2]		m³/h	0.3-1.9	0.6-2.8	0.8-4.0
• Operating voltage		V/Hz	230/50	230/50	230/50
• Electrical power consumption (incl. pump) min./max.		Watt	16/75	22/115	33/139
• Stand-by		Watt	4	4	4
• Type of protection		IP	X4D	X4D	X4D
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40
• Sound power level					
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	53	53	53
• Condensate quantity (natural gas) at 50/30 °C		l/h	4.5	6.6	9.3
• pH value of the condensate			4-6	4-6	4-6
• Construction type			B23P, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)		
• Flue gas system					
- Temperature class			T 120	T 120	T 120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	73	101	150
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	12	20	30
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	82.2	75.8	76.3
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	69.9	60.9	60.4
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	41	35.5	34.6
- Max. permissible temperature of the combustion air		°C	105	105	105
- Flow rate combustion air		Nm³/h	60	83	117
- Maximum supply pressure for combustion air supply and flue gas line		Pa	50	100	100
- Maximum draught/depression at flue gas outlet		Pa	−50	−50	−50

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100, an output reduction of up to 7 % is possible.

[2] Data related to NCV. TopGas® max is also suitable for propane/butane (liquid gas) mixtures.

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m³ is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval TopGas® max (50-150)

Type			(125)	(150)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	22.5-113.9	25.8-138.3
• Nominal heat output at 50/30 °C, natural gas [1]		kW	26.3-125.3	29.8-150.4
• Nominal heat output at 80/60 °C, propane [2]		kW	22.5-113.9	25.7-138.3
• Nominal heat output at 50/30 °C, propane [2]		kW	26.3-125.3	29.8-150.4
• Nominal heat input with natural gas [3]		kW	24.2-116	26.6-140.8
• Nominal heat input with propane [2]		kW	31.2-116	27.7-140.8
• Operating pressure heating min./max. (PMS)		bar	0.8-6	0.8-6
• Operating temperature max. (T_{max})		°C	90	90
• Boiler water content ($V_{(H20)}$)		l	8.0	9.5
• Flow resistance boiler		z value	see diagram	
• Minimum circulation water quantity		l/h	5200	5900
• Boiler weight (without water content, incl. cladding)		kg	74	89
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	107.8/97.1	107.9/97.2
• Room heating energy efficiency (A+++ → D)	class		0	0
- without control	ηs	%	92	92
- with control	ηs	%	94	94
- with control and room sensor	ηs	%	96	96
- annual energy consumption	Q_{HE}	GJ	213	257
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	42.9	34.1
• O_2 content in flue gas min./max. output		%	5.3/4.2	5.3/4.2
• Heat loss in standby mode		Watt	368	374
• Dimensions			see table of dimensions	
• Gas flow pressure min./max.				
- Natural gas E/LL		mbar	18-50	18-50
- Propane		mbar	37-50	37-50
• Gas connection values at 15 °C/1013 mbar:				
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.7 kWh/m³		m³/h	2.5-12.0	2.7-14.5
- Natural gas LL (G25) – (Wo = 12.4 kWh/m³) NCV = 8.13 kWh/m³		m³/h	3.0-14.3	3.3-17.3
- Propane (G31) (NCV = 24.4 kWh/m³) [2]		m³/h	1.3-4.8	1.1-5.8
• Operating voltage		V/Hz	230/50	230/50
• Electrical power consumption (incl. pump) min./max.		Watt	35/226	27/297
• Stand-by		Watt	3	4
• Type of protection		IP	X4D	X4D
• Permitted ambient temperature during operation		°C	5-40	5-40
• Sound power level				
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	51	51
• Condensate quantity (natural gas) at 50/30 °C		l/h	11.2	13.6
• pH value of the condensate			4-6	4-6
• Construction type			B23P, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)	
• Flue gas system				
- Temperature class			T 120	T 120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	182	208
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	35	40
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	76.7	73.0
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	59.9	59.7
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	33	30.6
- Max. permissible temperature of the combustion air		°C	105	105
- Flow rate combustion air		Nm³/h	141	171
- Maximum supply pressure for combustion air supply and flue gas line		Pa	150	200
- Maximum draught/depression at flue gas outlet		Pa	−50	−50

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100, an output reduction of up to 7 % is possible.

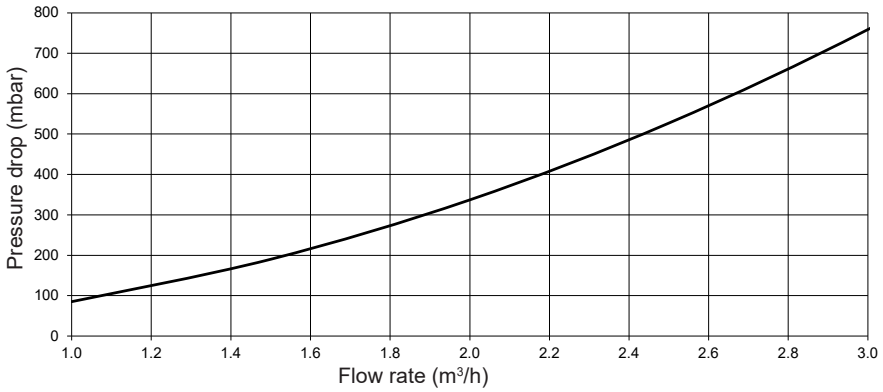
[2] Data related to NCV. TopGas® max is also suitable for propane/butane (liquid gas) mixtures.

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m³ is possible without resetting.

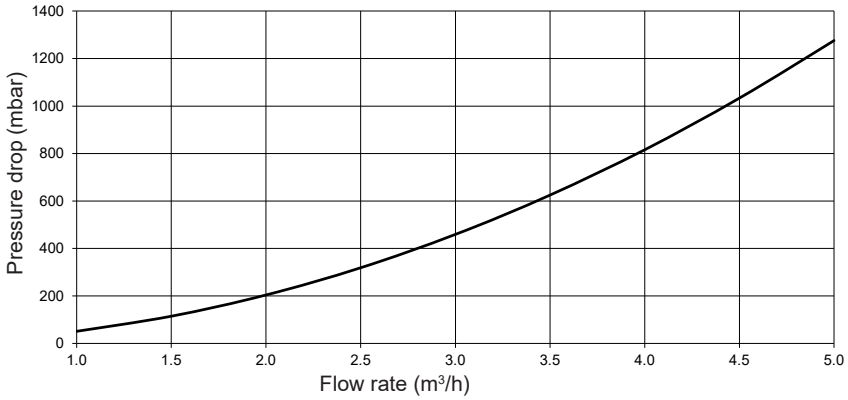
[4] Conversion acc. to EN 15502-1, Appendix J

Flow resistance on the heating water side

TopGas® max (50)

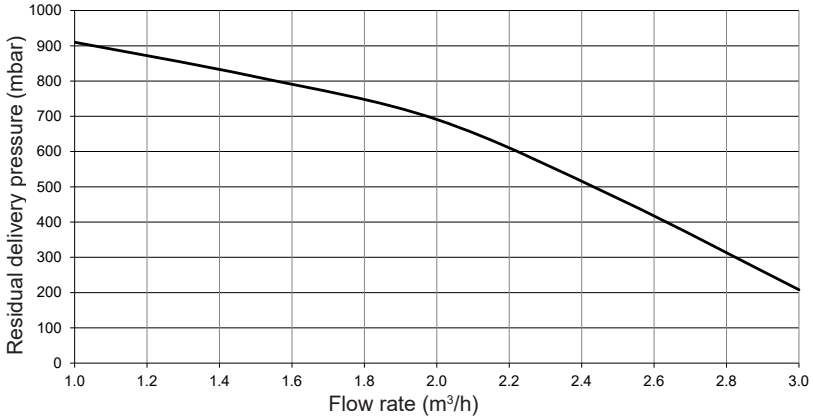


TopGas® max (65)



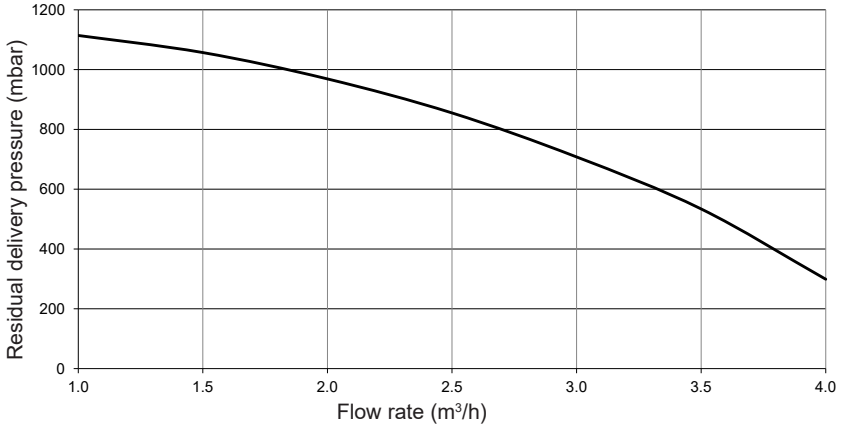
Maximum residual delivery pressure of heating pump with connection set AS32-TG max SPS-I 10

TopGas® max (50)



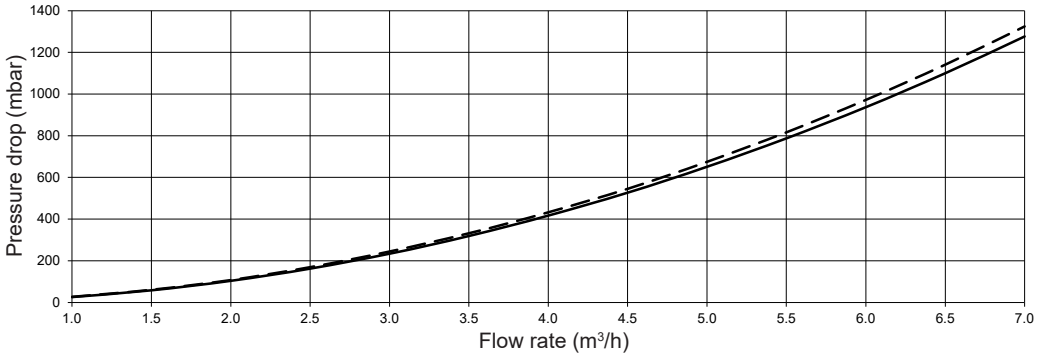
Maximum residual delivery pressure of heating pump with connection set AS32-TG max SPS-I 12

TopGas® max (65)

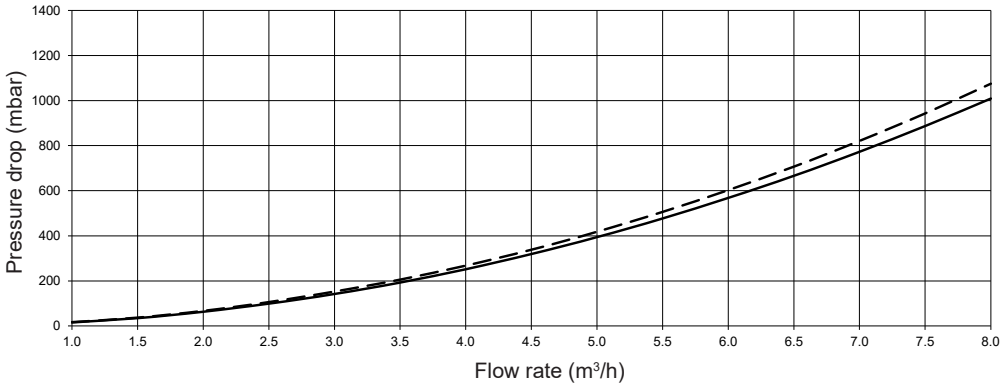


Flow resistance on the heating water side

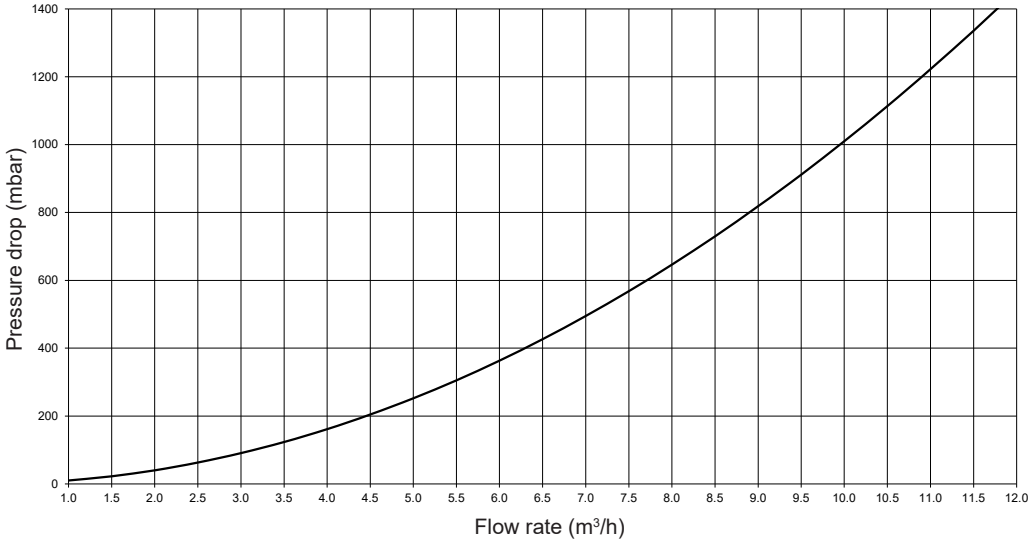
TopGas® max (100)



TopGas® max (125)

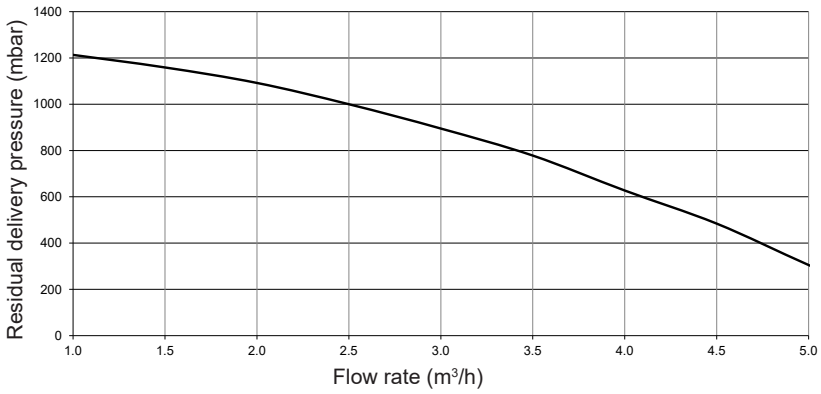


TopGas® max (150)



Maximum residual delivery pressure of heating pump with connection set AS40-TG max SPS-I 12

TopGas® max (100)



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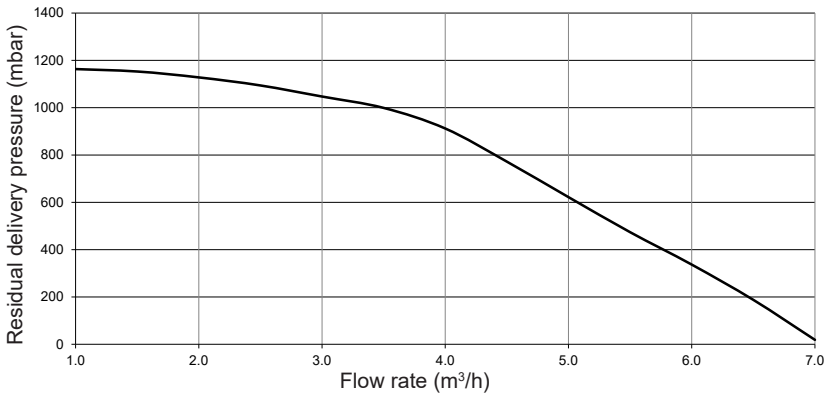
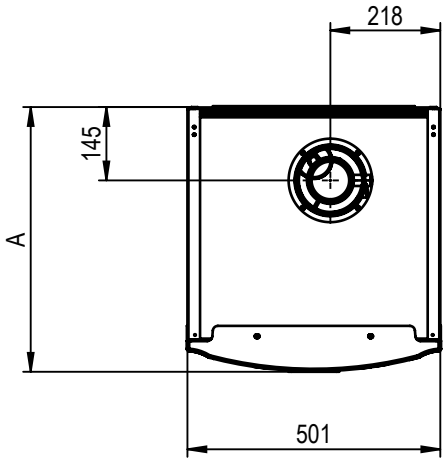
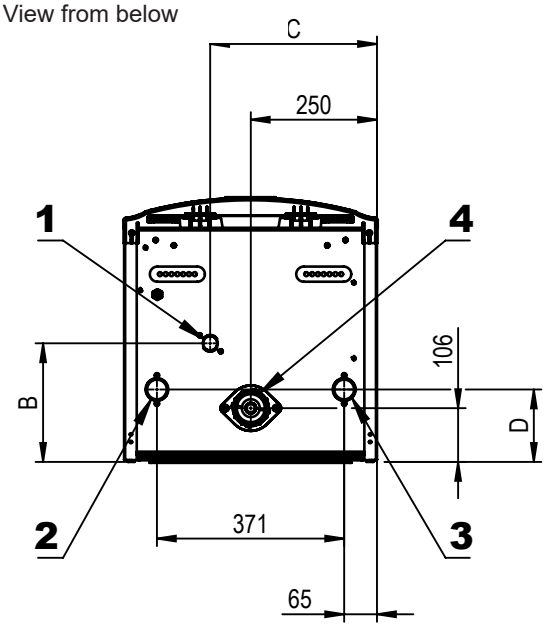


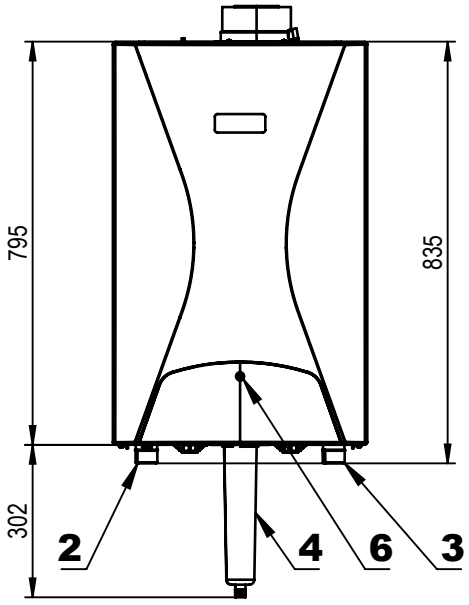
TopGas® max (50,65)

(Dimensions in mm)



View from below



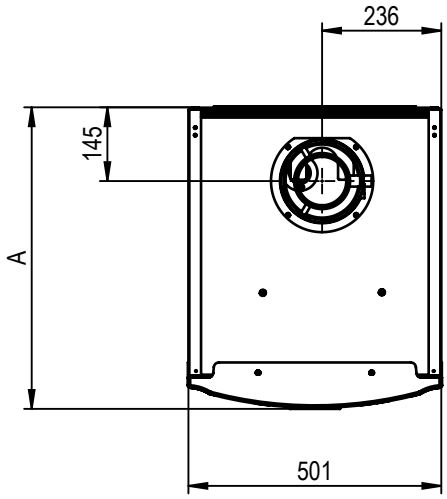


TopGas® max type	A	B	C	D
(50)	525	235	330	143
(65)	590	260	445	105

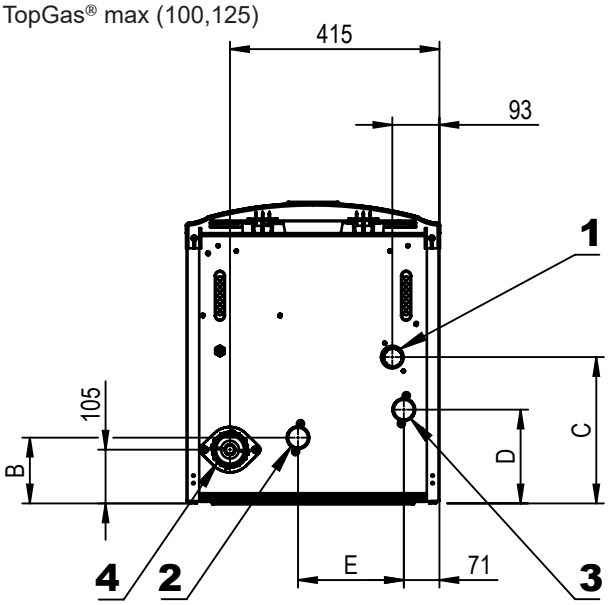
1	Gas connection	G ¾″
2	Flow heating	G 1¼″
3	Return heating	G 1¼″
4	Condensate drain	DN 20
5	Flue gas/combustion air connection	C80/125
6	Cover control panel	

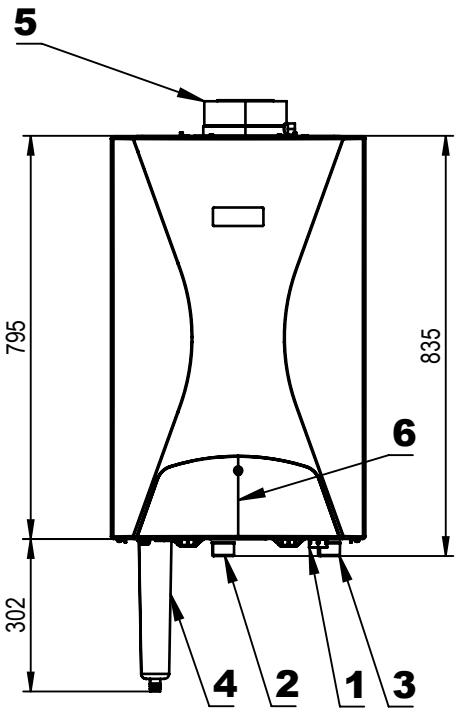
TopGas® max (100-150)

(Dimensions in mm)

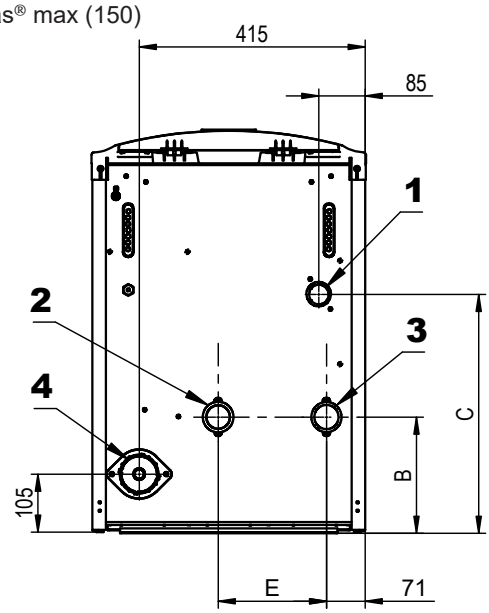


View from below
TopGas® max (100,125)





TopGas® max (150)

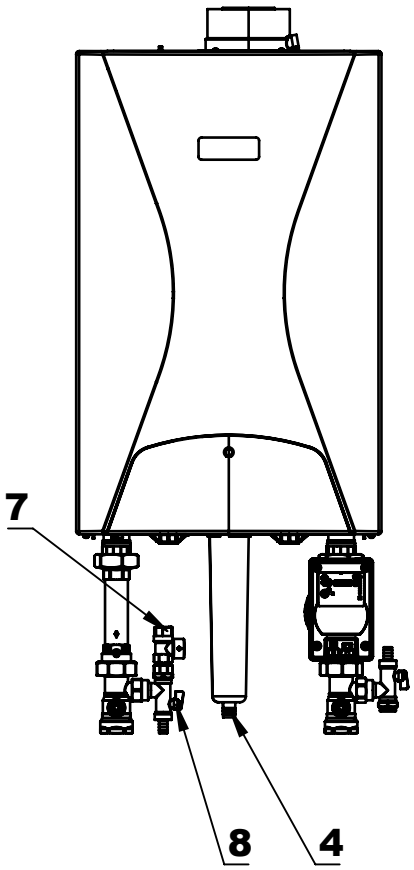


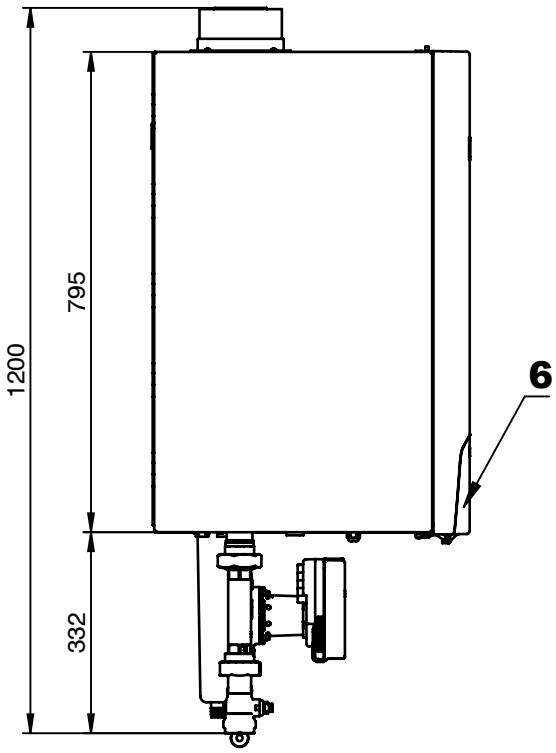
TopGas® max type	A	B	C	D	E
(100)	590	130	290	185	209
(125)	660	130	365	185	209
(150)	730	210	437	-	199

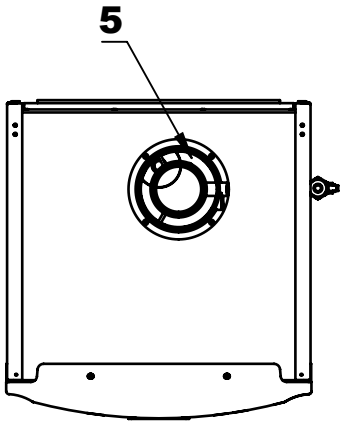
1	Gas connection	G 1″
2	Flow heating	G 1¼″
3	Return heating	G 1¼″
4	Condensate drain	DN 20
5	Flue gas/combustion air connection	C100/150
6	Cover control panel	

TopGas® max (50,65) with connection set DN 32

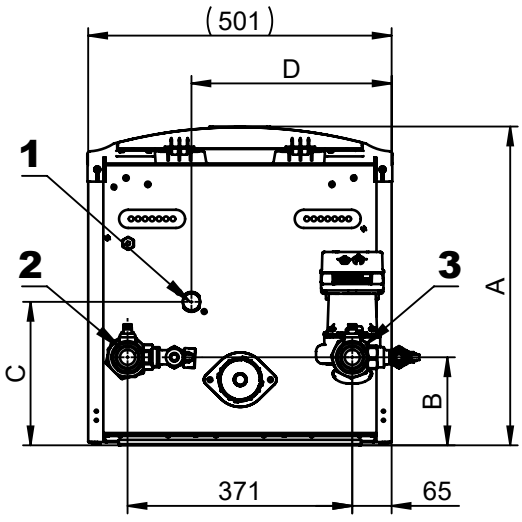
(Dimensions in mm)







View from below

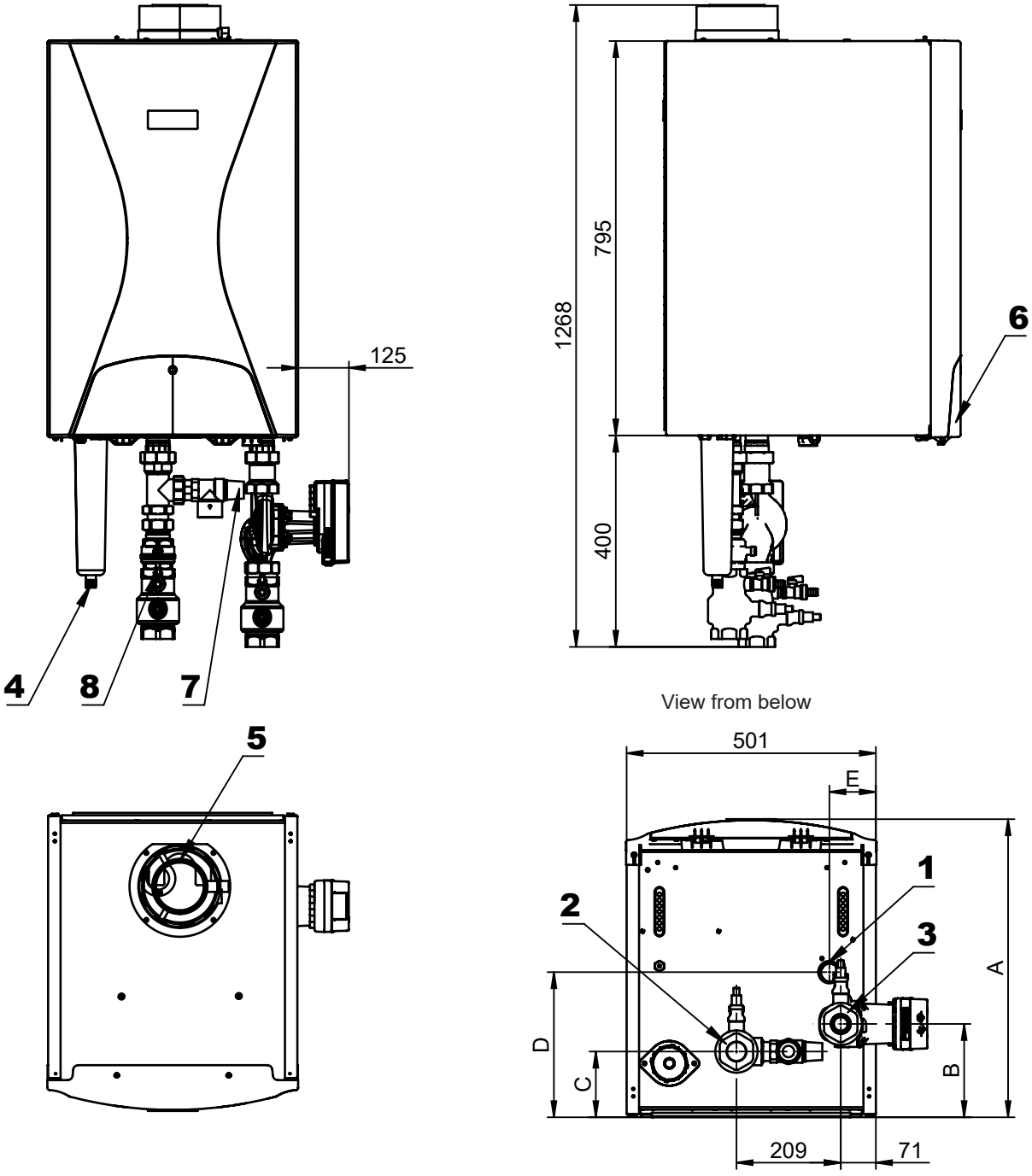


TopGas® max type	A	B	C	D
(50) with AS32-TG max SPS-I 10	525	143	235	330
(65) with AS32-TG max SPS-I 12	590	105	260	445

1 Gas connection G ¾″
2 Flow heating G 1¼″
3 Return heating G 1¼″
4 Condensate drain DN 20
5 LAS flue gas/combustion air connection C80/125
6 Cover control panel
7 Safety valve
8 KFE ball valve

TopGas® max (100,125) with connection set DN 40

(Dimensions in mm)



TopGas® max type	A	B	C	D	E
(100) with AS40-TG max SPS-I 12	590	185	130	290	93
(125) with AS40-TG max SPS-I 12	660	185	130	365	93

1	Gas connection	G1″
2	Flow heating	G 1¼″ (AS 1½″)
3	Return heating	G 1¼″ (AS 1½″)
4	Condensate drain	DN 20
5	LAS flue gas/combustion air connection	C100/150
6	Cover control panel	
7	Safety valve	
8	KFE ball valve	

Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water must be fully demineralised.

Heating water

- In the case of full demineralisation of the filling and replacement water, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.
- pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- The following systems must be equipped with **separate circuits**:
  - Systems operated with softened water.
  - Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up).
- In the case of bivalent heating systems, the values of the heat generator with the strictest requirement for water quality must be complied with.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Frost protection agent

Monopropylene glycol should be used as frost protection agent (e. g. Sentinel X500; Fernox Alphi 11). The proportion should be between 20 % and max. 30 %.

Heating room

Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. wash-, dryer-, work room, hairdressers and so on).
Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. For direct combustion air supply (LAS system), use the separator C80/125 -> E80 PP or C100/150 -> E100 PP.

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-independent operation with separate combustion air pipe to the boiler:*
  0.8 cm^2 per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.

- *Room air-dependent operation:*
  Minimum free cross-section of the opening into the open: 150 cm^2 or twice 75 cm^2 and additionally 2 cm^2 necessary for each kW of output over 50 kW for vent in to the open.

Gas connection

Commissioning

- Initial commissioning is only allowed to be carried out by a qualified installer.
- Burner setting values according to the installation instructions.

Manual gas shut-off valve and gas filter

Immediately in front of the boiler a manual gas shut-off device (valve) must be installed according to relevant regulations. Should the local regulations or conditions demand this, an approved gas filter must be installed in the gas supply pipe between the gas tap and the boiler in order to prevent malfunction due to foreign particles being carried along with the gas.

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.

Gas pressure natural gas:

- Necessary gas flow pressure at the boiler inlet: natural gas min. 18 mbar, max. 50 mbar

Propane gas pressure:

- For propane, a gas pressure regulator must be provided on site for reducing the pilot pressure on the boiler
- Required gas flow pressure at the boiler entry: propane min. 37 mbar, max. 50 mbar

Gas pressure regulator

- The installation of a gas pressure regulator is only necessary if the gas flow pressure in the gas network exceeds the maximum permissible gas flow pressure of the TopGas® max or if there are considerable fluctuations in the gas flow pressure.
- Pressure fluctuations in the gas network must be prevented by suitable measures (e.g. gas storage tanks or pressure regulators). The local conditions must be checked in each individual case.

Sludge separator

The installation of a sludge separator with magnetic ring is mandatory in the gas boiler return.

Minimum heating water circulation quantity

- Depending on the boiler type, different minimum circulating water quantities are required through the boiler. For details, see the corresponding data sheets.
- Due to the required minimum circulation water quantity, hydraulic decoupling between the primary circuit and the secondary circuit is required. This must be ensured by appropriate hydraulic measures, for example by installing a low loss header.
- During burner operation, the circulating pump must be constantly in operation and the minimum heating water circulation quantity must be guaranteed.
- After each burner switch-off, the circulating pump must be in operation for at least 2 minutes (is guaranteed by the boiler controller).

Heating boiler in the attic

A water pressure guard is built in in the boiler, which automatically turns the gas burner off in case of water shortage. Notice: Mount the diaphragm pressure expansion tank in the heating flow and the pump in the heating return. See also paragraph “diaphragm pressure expansion tank”!

Condensate drainage

- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas line can be discharged via the boiler. A condensate trap is no longer needed in the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic: PVC, PE, PP, ABS and UP

Diaphragm pressure expansion tank

- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The minimum inlet pressure in the diaphragm pressure expansion tank must be 1.2 bar and the minimum operating pressure in the boiler must be 1.5 bar.
- The pump must be connected in the heating return and the diaphragm pressure expansion tank must be connected on the pump suction side.
- If the aforementioned minimum operating pressure in the boiler of 1.5 bar cannot be maintained (e.g. roof heating centres), the diaphragm pressure expansion tank must be installed in the heating flow.
- Starting from 70 °C an additional intermediate tank is necessary.

Flue gas system

- The flue gas must be routed through a tested and approved flue gas line.
- Flue gas lines must be gas-, condensate- and over pressure-tight.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. temperature class T120.
- A flue gas temperature limiter is integrated into the boiler.

Allocation of gas filters for TopGas® max (50-150)

TopGas® max type	Gas throughput natural gas E m^3/h	Gas filter type	Dimension	Pressure drop gas filter (with clean filter) mbar
(50)	4.9	70612/6B	Rp ¾″	0.15
(65)	7.0	70612/6B	Rp ¾″	0.30
(100)	10.0	70602/6B	Rp 1″	0.15
(125)	12.0	70602/6B	Rp 1″	0.23
(150)	14.5	70602/6B	Rp 1″	0.30

It is essential to set the dimensions of the gas line!

Table “Standard values for flue gas line dimensions”

Boiler		Smooth-walled flue gas line	Number of bends 90° (flue gas + combustion air)			
TopGas® max type	Internal Ø flue gas outlet mm	Designation DN	Total pipe length in m (flue gas + combustion air) 1	2	3	4
(50)	80	100	30	30	30	13
(65)	80	100	30	30	30	17
(100)	100	130	30	30	30	30
(125)	100	130	30	30	30	30
(150)	100	130	30	30	30	30

Notice: A T-piece on the boiler connection fitting has already been taken into account for the flue gas line dimensioning. The values in the table “Standard values for flue gas line dimensions” are standard values for reference.
An exact calculation for the flue gas line must be made on site.
For chimney systems above 25 m effective height, negative pressure in the chimney is to be expected in some operating conditions. Therefore, we recommend an individual design of the chimney system and checking the individual pressure conditions.

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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Your Hoval partner

Hoval

CATALOGUE

Hoval UltraGas®

Floor-standing gas condensing boiler UltraGas® (15-100)

Hoval | Responsibility for energy and environment

Table of contents

Hoval UltraGas® (15-100)

Gas condensing boiler
- Steel boiler with condensation technology
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Combustion chamber made of stainless steel
- Maximal flue gas condensation through downstream heating surface made of **aluFer®** stainless steel bounded pipe; heating gas side: aluminium water side: stainless steel
- Thermal insulation with mineral wool mat
- Water pressure sensor (minimum and maximum pressure limiter integrated)
- Flue gas temperature sensor with flue gas limiter function
- Pre-mix burner
  - with blower and venturi
  - modulating operation
  - automatic ignition
  - ionisation guard
  - gas pressure monitor
- Gas boiler fully clad with steel plate, red powder-coated
- Heating connections to left and right for:
  - heating flow
  - high temperature return
  - low temperature return
- *UltraGas® (15-50):* Flue gas connection backwards to the top
- *UltraGas® (70,100):* concentrical supply air/flue gas connection, vertically upwards, horizontally to rear as option, see accessories and dimension sheet
- TopTronic® E controller installed
- Possibility of connecting an external gas solenoid valve with error output

Model range

UltraGas® type		Nominal heat output 50/30 °C kW
(15)	A	3.0-15.2
(20)	A	4.0-20.2
(27)	A	5.0-26.9
(35)	A	5.8-34.3
(50)	A	8.0-48.8
(70)	A	13.5-69.0
(100)		20.9-99.0

A⁺⁺⁺ → D

Energy efficiency class of the compound system with control.

TopTronic® E controller

Control panel
- Colour touchscreen 4.3 inch
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating statuses
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with online HovalConnect)
- Adaptation of the heating strategy based on the weather forecast (with online HovalConnect)

TopTronic® E basic module heat generator TTE-WEZ
- Control functions integrated for
  - 1 heating/cooling circuit with mixer
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit
  - bivalent and cascade management
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- RAST 5 basic plug set

Options for TopTronic® E controller
- Can be expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be networked with a total of up to 16 controller modules:
  - heating circuit/hot water module
  - solar module
  - buffer module
  - measuring module

Number of modules that can be additionally installed in the heat generator:
- 1 module expansion and 1 controller module **or**
- 2 controller modules

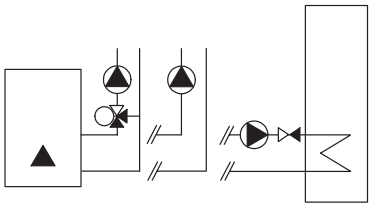
The supplementary plug set must be ordered in order to use expanded controller functions.

Further information about the TopTronic® E
see “Controls”

Optional
- For propane
- Free-standing calorifier see Calorifiers
- Flue gas systems

Delivery
- Floor-standing gas condensing boiler fully clad

Floor-standing gas condensing boiler



Boiler permissions
UltraGas® (15-100)

CE product ID No. CE-0085AQ0620

Hoval UltraGas® (15-100)

Floor-standing gas condensing boiler with built-in Hoval TopTronic® E control

Control functions integrated for
- 1 heating circuit with mixer
- 1 heating circuit without mixer
- 1 hot water charging circuit
- bivalent and cascade management

- Can be optionally expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be optionally networked with a total of up to 16 controller modules (incl. solar module)

Boiler made of steel with TopTronic® E control, combustion chamber made of stainless steel. Secondary heating surfaces made of **aluFer®** stainless steel composite pipe. Premix burner with blower. Modulating burner.

Delivery
Gas boiler fully clad

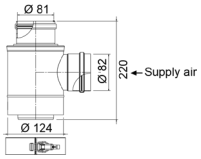
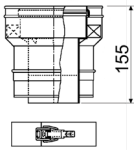
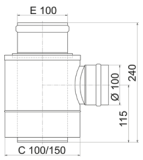
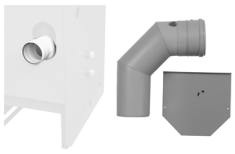
UltraGas® type	Nominal heat output 50/30 °C kW	Part No.
(15)	3.0-15.2	7013 300
(20)	4.0-20.2	7013 301
(27)	5.0-26.9	7013 302
(35)	5.8-34.3	7013 303
(50)	8.0-48.8	7013 304
(70)	13.5-69.0	7011 990
(100)	20.9-99.0	7011 991

Energy efficiency class
see “Description”

Conversion kit for propane 6047 605
for UltraGas® (15-70)

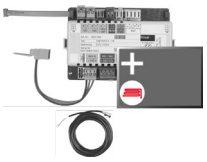
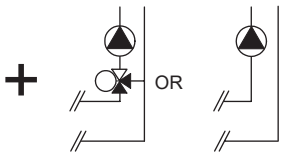
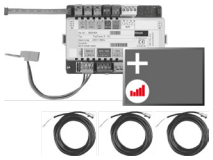
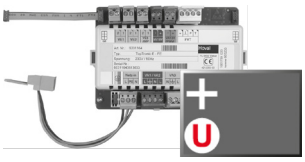
Conversion kit for propane 6047 609
for UltraGas® (100)

Accessories

		Part No.
	Necessary accessories for room air independent operation	
	**Connection set for room air independent operation without sound absorber** for UltraOil® (16-35), UltraGas® (15-50) Consisting of: corrugated pipe Ø 50 mm for combustion air supply to burner. Concentric boiler connection piece E80 -> C80/125 PP for flue gas and supply air. Necessary if no Hoval LAS flue gas line system is used	6027 510
In the UltraGas®, ventilation of the installation or boiler room must be guaranteed for operation INdependent from the room air.	For room air independent operation with separate combustion air duct (not concentrical).	
	**Separating piece C80/125 -> 2 x E80 PP** for room air independent operation for separate conduction of flue gas and combustion air.	2010 174
	**Adapter piece C80/125 -> C100/150 PP**	2018 533
	**Separating piece C100/150 -> 2 x E100 PP** for UltraOil® (35,50), TopGas® classic (35-80), UltraGas® (50-100) for separate conduction of flue gas and combustion air (LAS system) Recommendation: If the air inlet at the facade is near a noise sensitive place (window of bedroom, terrace etc.), we recommend to use a sound absorber at the direct combustion air inlet.	2015 244
	**Horizontal flue gas connection E100 PP** for UltraOil® (50), UltraGas® (70,100) for the conversion of the vertical flue gas connection (series delivery) to a horizontal to rear routed flue gas connection.	6016 933
	**Suction tube for combustion air** for UltraGas® (70) only necessary with horizontal and concentric flue gas connection (separate ducting of combustion air and flue gas). Connection “Horizontal flue gas connection E100 PP” essential, Ø 75 mm The boiler room must be ventilated.	6017 288

TopTronic® E module expansions

for TopTronic® E basic module heat generator

	Part No.
 	**TopTronic® E module expansion heating circuit TTE-FE HK** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module **Notice** The supplementary plug set may have to be ordered to implement functions differing from the standard!	6034 576
	**TopTronic® E module expansion heating circuit incl. energy balancing TTE-FE HK-EBZ** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module **Notice** The flow rate sensor set must be ordered as well.	6037 062
	**TopTronic® E module expansion Universal TTE-FE UNI** Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module **Notice** Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented. **Further information** see “Controls” – “Hoval TopTronic® E module expansions” chapter	6034 575

Flow rate sensor sets
Plastic casing

Size	Connection inches	Flow rate l/min	Part No.
DN 8	G ¾″	0.9-15	6038 526
DN 10	G ¾″	1.8-32	6038 507
DN 15	G 1″	3.5-50	6038 508
DN 20	G 1¼″	5-85	6038 509
DN 25	G 1½″	9-150	6038 510

Brass casing

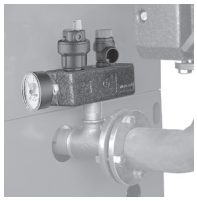
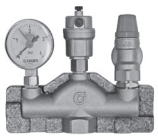
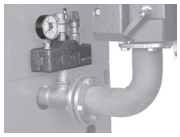
Size	Connection inches	Flow rate l/min	Part No.
DN 10	G 1″	2-40	6042 949
DN 32	G 1½″	14-240	6042 950

Accessories for TopTronic® E

		Part No.
	**TopTronic® E controller modules**	
	TTE-HK/WW TopTronic® E heating circuit/ hot water module	6034 571
	TTE-SOL TopTronic® E solar module	6037 058
	TTE-PS TopTronic® E buffer module	6037 057
	TTE-MWA TopTronic® E measuring module	6034 574
	**Supplementary plug set**	
	for basic module heat generator TTE-WEZ	6034 499
	for controller modules and module expansion TTE-FE HK	6034 503
	**TopTronic® E room control modules**	
	TTE-RBM TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070
	**Enhanced language package TopTronic® E** one SD card required per control module Consisting of the following languages: HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA, NL	6039 253
	**HovalConnect**	
	HovalConnect LAN	6049 496
	HovalConnect WLAN	6049 498
	HovalConnect Modbus	6049 501
	HovalConnect KNX	6049 593
	TopTronic® E interface modules	
	GLT module 0-10 V	6034 578
	**TopTronic® E sensors**	
	AF/2P/K Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
	TF/2P/5/6T Immersion sensor, L = 5.0 m	2055 888
	ALF/2P/4/T Contact sensor, L = 4.0 m	2056 775
	TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m	2056 776
	**Bivalent switch** for various release or switching functions	
	Bivalent switch 1-piece	2056 858
	Bivalent switch 2-piece	2061 826
	**System casing**	
	System casing 182 mm	6038 551
	System casing 254 mm	6038 552
	**TopTronic® E wall casing**	
	WG-190 Wall casing small	6052 983
	WG-360 Wall casing medium	6052 984
	WG-360 BM Wall casing medium with control module cut-out	6052 985
	WG-510 Wall casing large	6052 986
	WG-510 BM Wall casing large with control module cut-out	6052 987

Further information
see “Controls”

Accessories

	Part No.
 **Flow temperature monitor** for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover	
Clamp-on flow temperature monitor RAK-TW1000S with retaining strap, without cable and plug	242 902
Clamp-on flow temperature monitor set RAK-TW1000S with retaining strap, supplied with cable (4 m) and plug	6033 745
Immersion thermostat RAK-TW1000S Thermostat with immersion sleeve ½″ Depth of immersion 150 mm, nickel-plated brass	6010 082
 **CO monitor** For safety shut-off of the boiler on leakage of carbon monoxide incl. connection cable	6043 277
for UltraGas® (15-50)	
  Installation example **Safety set SGK15-PN3 IT 1″ insulated** Safety group made of composite material (glass fiber reinforced polyamide) complete with safety valve (3 bar), quick air vent and pressure gauge Connection IT 1″ (ISO228-1) with insulating caps Medium temperature range: 5 ... 90 °C Setting (pressure): 3 bar Area of application up to 50 kW	6063 905
for UltraGas® (70,100)	
  Installation example **Safety set SG20-1″** Area of application up to 100 kW complete with safety valve (3 bar) Pressure gauge and automatic aspirator with shut-off valve. Connection: DN 20-1″ internal thread	6014 390
 **Boiler socket** for UltraOil® (16-35), UltraGas® (15-50) to elevate the condensate drainage made of steel height 150 mm anthracite painted	6025 418

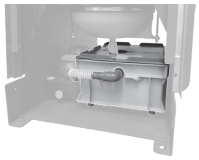
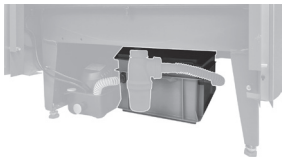
Accessories

Gas valve
with thermally releasing cut-off device

Type	Connection inches	Part No.
DN 15	R ½″	2012 075
DN 20	R ¾″	2012 077
DN 25	R 1″	2069 324

Gas filter 70612/6b Rp ¾″ — 2007 995
with instrument glands up/downstream
of the filter cartridge (dia.: 9 mm)
pore size of filter cartridge < 50 µm
Max. pressure differential 10 mbar
Max. inlet pressure 100 mbar

Gas filter mod. 70602/6b Rp 1″ — 2007 996
with instrument glands up/downstream
of the filter cartridge (dia.: 9 mm)
pore size of filter cartridge < 50 µm
Max. pressure differential 10 mbar
Max. inlet pressure 100 mbar

		Part No.
Condensate drain for Hoval UltraGas® (15-90)		
	**Condensate pump** For transporting condensate into a higher drainage duct Including connection lines Completely wired, cable and plug For connection to the boiler controller Delivery head: max. 5 m Can be combined with neutralisation box	6063 855
	**Neutralisation box** for transporting condensation water into a lower lying drainage duct incl. condensate neutralisation incl. neutralisation granulate 3 kg combinable with condensate pump can be mounted in boiler socket	6024 764
	**Neutralisation granulate** for neutralisation box Refill set volume 3 kg Life time of one filling: approx. 1 year, depending on amount of condensate	2028 906
Condensate drain for Hoval UltraGas® (70,100)		
	**Condensate pump** For transporting condensate into a higher drainage duct Including connection lines Completely wired, cable and plug For connection to the boiler controller Delivery head: max. 5 m Can be combined with neutralisation box	6063 855
	**Neutralisation box HNB-0400** for UltraOil (50), UltraOil (65,80), UltraGas (70,100) and UltraGas 2 (125-400) Condensate drain into a lower drainage duct Neutralisation granulate: 3 kg Connection hose: 2 m Service life up to 1 year, depending on the boiler operating mode Positioning: UltraOil (50), UltraOil (65, 80) and UltraGas (70, 100): can be installed in boiler base UltraGas 2 (125-400): behind the boiler or laterally	6054 792
	**Neutralisation granulate** for neutralisation box Refill set volume 3 kg Life time of one filling: approx. 1 year, depending on amount of condensate	2028 906

Boiler connection set

		Part No.
	**Connection set AS 25-S/NT/HT** for mounting a heating armature group HA25 for UltraOil® (16,20), UltraGas® (15,27) Rigid flow pipe and flexible return pipe Suitable for left or right connection Low/high temperature Connection set completely insulated For mounting a heating armature group HA20 an adapter set DN 20-DN 25 is required.	6017 055
	**Connection set AS 32-S/NT/HT** for mounting a heating armature group HA32 for UltraGas® (35,50) Rigid flow pipe and flexible return pipe with fastening material Suitable for left or right connection Low/high temperature Connection set completely insulated For mounting a heating armature group HA25 an adapter set DN 25-DN 32 is required.	6014 846
	**Connection set AS 40-S/NT/HT** for mounting a heating armature group HA40 for UltraOil® (50), UltraGas® (70,100) Rigid flow pipe and flexible return pipe with screw flange R 1½″ Suitable for left or right connection Low/high temperature Connection set completely insulated For mounting a heating armature group HA32 an adapter set DN 32-DN 40 is required.	6014 848
	**Connection set AS 25-LG** for mounting a Compact charging group LG-2 for UltraOil® (16-35), UltraGas® (15-27) Suitable for left or right connection Low-temperature return Connection set completely insulated made of flexible pipes	6034 818

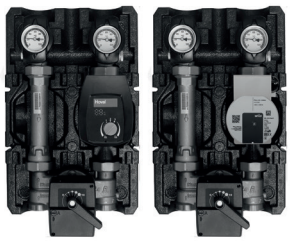
Heating armature groups

Heating armature group HA-3BM-R
with 3-way motor mixer and heat-insulating box.
Installation right (flow left)

HA group/pump	Speed control					EEI ≤	Part No.
		air					
DN 20 (¾")							
HA20-3BM-R/HSP 4	•			•	•	0.18	6051 715
HA20-3BM-R/HSP 6	•			•	•	0.20	6051 716
HA20-3BM-R/SPS-S 7	•	•		•	•	0.20	6049 541
HA20-3BM-R/SPS-S 8	•	•		•	•	0.20	6049 542
DN 25 (1")							
HA25-3BM-R/HSP 6	•			•	•	0.20	6051 717
HA25-3BM-R/SPS-S 7	•	•		•	•	0.20	6049 545
HA25-3BM-R/SPS-S 8	•	•		•	•	0.20	6049 546
HA25-3BM-R	without pump						6046 642
Pumps for HA25-3BM-R see "Circulating pumps". Pump installation dimensions 1½" x 180 mm							
DN 32 (1¼")							
HA32-3BM-R/SPS-S 7	•	•		•	•	0.20	6049 549
HA32-3BM-R/SPS-S 8	•	•		•	•	0.20	6049 550
HA32-3BM-R/SPS-I 8	•	•	•	•	•	0.20	6059 328
HA32-3BM-R/SPS-I 12 PM1	•		•	•		0.23	6064 606
HA32-3BM-R	without pump						6046 643
Pumps for HA32-3BM-R see "Circulating pumps". Pump installation dimensions 2" x 180 mm							
DN 40 (1½")							
HA40-3M-R/SPS-I 8	•		•	•	•	0.20	6059 327
HA40-3M-R/SPS-I 12 PM1	•		•	•		0.23	6064 581
HA40-3M-R	without pump						6014 867
Pumps for HA40-3M see "Circulating pumps". Pump installation dimensions DN 40/PN 6 x 250 mm							

Speed control legend	
Δp-v	Variable differential pressure
ENF	Vent function 10 min.
	PWM control signal heating
Δp-c	Constant differential pressure
	Constant rotational speed

Heating armature groups



Heating armature group HA-3BM-L
with 3-way motor mixer and heat-insulating box.
Installation left (flow right)

HA group/pump	Speed control					EEI ≤	Part No.
DN 20 (¾")							
HA20-3BM-L/HSP 4	•			•	•	0.18	6051 718
HA20-3BM-L/HSP 6	•			•	•	0.20	6051 719
HA20-3BM-L/SPS-S 7	•	•		•	•	0.20	6049 543
HA20-3BM-L/SPS-S 8	•	•		•	•	0.20	6049 544
DN 25 (1")							
HA25-3BM-L/HSP 6	•			•	•	0.20	6051 720
HA25-3BM-L/SPS-S 7	•	•		•	•	0.20	6049 547
HA25-3BM-L/SPS-S 8	•	•		•	•	0.20	6049 548
HA25-3BM-L	without pump						6046 644

Pumps for HA25-3BM-L
see "Circulating pumps".
Pump installation dimensions 1½" x 180 mm

DN 32 (1¼")							
HA32-3BM-L/SPS-S 7	•	•		•	•	0.20	6049 551
HA32-3BM-L/SPS-S 8	•	•		•	•	0.20	6049 552
HA32-3BM-L/SPS-I 8	•	•	•	•	•	0.20	6059 329
HA32-3BM-L/SPS-I 12 PM1	•		•	•		0.23	6064 607
HA32-3BM-L	without pump						6046 645

Pumps for HA32-3BM-L
see "Circulating pumps".
Pump installation dimensions 2" x 180 mm

Speed control legend	
Δp-v	Variable differential pressure
ENF	Vent function 10 min.
	PWM control signal heating
Δp-c	Constant differential pressure
	Constant rotational speed

Heating armature groups

Charging group LG-2
Heating armature group HA-2
For the connection of a side calorifier or as heating circuit without mixer, with heat-insulating box. Installation right (flow left).

Charging/HA group/pump	Speed control					EEI ≤	Part No.
DN 20 (¾")							
LG/HA20-2/HSP 4	•			•	•	0.18	6051 743
LG/HA20-2/HSP 6	•			•	•	0.20	6051 744
LG/HA20-2/SPS-S 7	•	•		•	•	0.20	6040 906
LG/HA20-2/SPS-S 8	•	•		•	•	0.20	6040 907
DN 25 (1")							
LG/HA25-2/HSP 6	•			•	•	0.20	6051 745
LG/HA25-2/SPS-S 7	•	•		•	•	0.20	6049 553
LG/HA25-2/SPS-S 8	•	•		•	•	0.20	6049 554
LG/HA25-2	without pump						6046 646

Pumps for LG/HA25-2
see "Circulating pumps".
Pump installation dimensions 1½" x 180 mm

DN 32 (1¼")							
LG/HA32-2/SPS-S 8	•	•		•	•	0.20	6049 555
LG/HA32-2/SPS-I 8	•	•	•	•	•	0.20	6059 330
LG/HA32-2	without pump						6046 647

Pumps for LG/ HA32-2
see "Circulating pumps".
Pump installation dimensions 2" x 180 mm

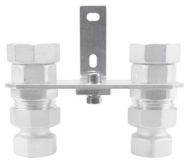
DN 40 (1½")							
HA40-2/SPS-I 8	•	•	•	•	•	0.20	6059 331
HA40-2/SPS-I 12 PM1	•		•	•		0.23	6064 603
HA40-2	without pump						6014 868

Pumps for HA40-2
see "Circulating pumps".
Pump installation dimensions DN 40/PN 6 x 250 mm

Compact charging group LG-2
With heat-insulating box for the direct installation on the CombiVal with 1"-nozzle, in the feed line or on the boiler.

Charging group/pump	Speed control					EEI ≤	Part No.
DN 25 (1")							
LG 25-Compact/HSP 4	•			•	•	0.18	6051 746
LG 25-Compact/HSP 6	•			•	•	0.20	6051 747
LG 25-Compact/SPS-S 7	•	•		•	•	0.20	6049 556

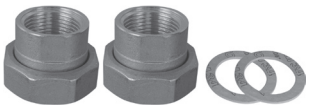
Speed control legend	
Δp-v	Variable differential pressure
ENF	Vent function 10 min.
	PWM control signal heating
Δp-c	Constant differential pressure
	Constant rotational speed



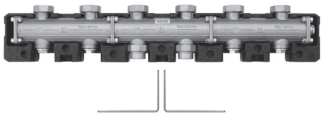
Wall brackets
for mounting a Hoval armature group on the wall

Type	Axle spacing	Connection top	Connection bottom	Wall clearance	Part No.
	mm	inches	inches	mm	
DN 20	90	Rp 1″	R 1″	70,85,100	6019 209
DN 25	125	Rp 1½″	R 1″	87-162	6019 210
DN 32	125	Rp 2″	R 1½″	142,167	6025 295

Standard pressure distributor WV-S 25-2/3 6031 809
DN 25 (1″)
wall distributor (not expandable) of brass
for 2 armature groups on the top,
with heat insulation made of EPP shells,
including brackets.

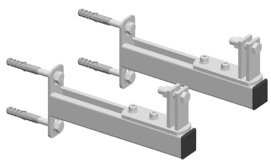


Screw fittings brass VSM21 6007 004
Version brass incl. seals
2 x screw fittings
External thread: G 1½″
Internal thread: Rp 1″



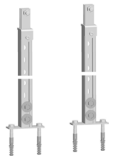
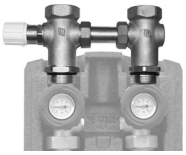
System pressure distributor expandable
Bronze wall distributor for 2 or 3 armature groups on top (expandable).
DN 20 without thermal insulation,
DN 25-50 with thermal insulation.
DN 20-32 including brackets,
DN 40/50 without brackets.
Variable connections boiler-side.
With separate components attachment of additional armature groups and conversion to pressureless operation possible.

Wall distributor type	HA groups	Part No.
DN 20 (¾″)		
WV-M 20-2	for 2 HA groups	6013 694
WV-M 20-3	for 3 HA groups	6013 695
DN 25 (1″)		
WV-M 25-2	for 2 HA groups	6046 648
WV-M 25-3	for 3 HA groups	6046 649
DN 32 (1¼″)		
WV-M 32-2	for 2 HA groups	6046 650
WV-M 32-3	for 3 HA groups	6046 651
DN 40 (1½″)		
WV-M 40-2	for 2 HA groups	6015 116
WV-M 40-3	for 3 HA groups	6015 117



Console for wall installation MKW-WV 40 6015 119
for installing a pressure distributor
WV-M 40 on the wall
Set (2 pieces)

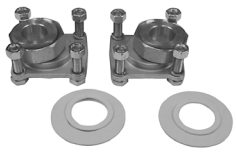
For wall distributors with more than 4 HA groups absolutely use console for floor installation!

	Part No.
 **Console for floor installation MKB-WV 40/50** for installing the pressure distributor WV-M 40 or WV-M 50 supported on the floor Set (2 pieces)	6015 120
For wall distributors with up to 4 HA groups 1 set, for wall distributors with 5 or more HA groups 2 sets necessary!	
 **Differential pressure relief valve** for installation in a HA group Casing and spring hood made of brass Spring made of stainless steel Seals made of EPDM Setting handle made of plastic with hexagon socket fastening screw Self-sealing with O-ring and screw connections Operating pressure: max. 10 bar Operating temperature: max. 110 °C Setting range: 0.1-0.6 bar	

Type	Thread on both sides	Connection		Dimens. between centre lines	
DN 20	½″	¾″ IT	¾″ ET	90 mm	6013 684
DN 25	1″	1″ IT	1″ ET	125 mm	6046 875
DN 32	1¼″	1¼″ IT	1¼″ ET	125 mm	6014 849

 **Adapter set DN 20-DN 25** for the installation of the HA group DN 20 to a wall distributor DN 25 or a connection set DN 25. Installation height: 120 mm	6013 693
 **Adapter set** for the installation of the HA group to a wall distributor	

Type	
DN 32-DN 25	6007 191
DN 25-DN 32	6006 954
DN 25-DN 40	6014 852

 **Adapter fitting DN 32-DN 40** for the installation of the HA group DN 32 to a wall distributor DN 40 or a connection set AS 40-S/NT/HT.	6014 863
Diaphragm pressure expansion tanks, Heating armature groups and Wall distributors see “Various system components”	
System modules see “Controls”	

Services

Services and associated scope of services
see separate catalogue “Hoval Services”

Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.

Part No.

Hoval UltraGas® (15-27)

Type			(15)	(20)	(27)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	3.0-14.3	3.8-18.7	4.5-25.0
• Nominal heat output at 50/30 °C, natural gas [1), 2)]		kW	3.0-15.2	4.0-20.2	5.0-26.9
• Nominal heat output at 80/60 °C, propane [3)]		kW	4.5-13.8	4.9-18.6	6.6-24.3
• Nominal heat output at 50/30 °C, propane [2)]		kW	4.8-15.3	5.2-20.7	7.3-27.0
• Nominal heat input with natural gas [4)]		kW	2.9-14.5	3.8-18.9	4.7-25.4
• Nominal heat input with propane [3)]		kW	4.7-14.3	5.1-19.3	6.8-25.2
• Operating pressure heating min./max. (PMS)		bar	1/3	1/3	1/3
• Operating temperature max. (T_{max})		°C	85	85	85
• Boiler water content ($V_{(H20)}$)		l	57	55	51
• Flow resistance boiler [5)]		z value	3.5	3.5	3.5
• Minimum circulation water quantity		l/h	-	-	-
• Boiler weight (without water content, incl. cladding)		kg	176	179	186
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV)		%	97.5/87.8	97.0/88.1	97.9/88.2
• Boiler efficiency at 30 % partial load operation (NCV/GCV)		%	107.9/97.2	108.0/97.3	108.0/97.3
• Room heating energy efficiency					
- without control	ηs	%	92	92	92
- with control	ηs	%	94	94	94
- with control and room sensor	ηs	%	96	96	96
• NOx class (EN 15502)			-	-	-
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	33	33	32
• O_2-content in flue gas at min./max. nominal heat output		%	5.5/5.1	5.5/5.1	5.5/5.1
• Heat loss in standby mode		Watt	160	160	160
Dimensions			see table of dimensions		
• Gas flow pressure min./max.					
- Natural gas E/LL		mbar	17.4-50	17.4-50	17.4-50
- Propane		mbar	37-50	37-50	37-50
• Gas connection values at 15 °C/1013 mbar:					
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.97 kWh/m^3		m^3/h	0.29-1.45	0.38-1.90	0.47-2.55
- Natural gas LL – (Wo = 12.4 kWh/m^3) NCV = 8.57 kWh/m^3		m^3/h	0.34-1.69	0.44-2.21	0.55-2.96
- Propane (NCV = 25.9 kWh/m^3)		m^3/h	0.18-0.55	0.20-0.75	0.26-0.97
• Operating voltage		V/Hz	230/50	230/50	230/50
• Electrical power consumption min./max.		Watt	20/44	22/62	20/56
• Stand-by		Watt	9	9	9
• Type of protection		IP	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40
• Sound power level					
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	57	62	66
- Flue gas noise radiated from the mouth (DIN 45635 Part 47) (room air dependent/independent of room air)		dB(A)	43	49	55
- Sound pressure level heating noise (depending on installation conditions) [6)]		dB(A)	50	56	59
• Condensate quantity (natural gas) at 40/30 °C		l/h	1.3	1.8	2.4
• pH value of the condensate		approx.	4.2	4.2	4.2
• Construction type			B23, B23P, C53, C63		
• Flue gas system					
- Temperature class			T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	23	31	42
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	4.7	6	7.1
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	62	63	64
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	45	45	45
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	31	31	31
- Max. permissible temperature of the combustion air		°C	50	50	50
- Flow rate combustion air		Nm^3/h	17	23	31
- Maximum supply pressure for combustion air supply and flue gas line		Pa	100	100	100
- Maximum draught/depression at flue gas outlet		Pa	−30	−30	−30

[1)] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100, an output reduction of up to 7 % is possible.

[2)] Factory measurements

[3)] Data related to NCV.

[4)] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible (readjustment might be necessary).

[5)] Flow resistance boiler in mbar = flow rate $(m^3/h)^2$ x z; resp. see diagrams

[6)] Compare notice at “Engineering”.

Hoval UltraGas® (35-100)

Type			(35)	(50)	(70)	(100)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	5.2-33.0	7.5-46.0	12.1-64.5	19.0-92.0
• Nominal heat output at 50/30 °C, natural gas [1), 2)]		kW	5.8-34.3	8.0-48.8	13.5-69.0	20.9-99.0
• Nominal heat output at 80/60 °C, propane [3]		kW	6.9-32.2	9.9-45.5	15.4-63.3	23.0-92.0
• Nominal heat output at 50/30 °C, propane [2]		kW	7.6-34.3	10.9-49.9	17.1-69.0	25.0-99.0
• Nominal heat input with natural gas [4]		kW	5.4-33.3	7.7-46.9	12.5-65.5	19.6-94.1
• Nominal heat input with propane [3]		kW	7.2-33.4	10.2-47.2	16.0-65.5	23.8-94.1
• Operating pressure heating min./max. (PMS)		bar	1/3	1/3	1/4	1/4
• Operating temperature max. (T_{max})		°C	85	85	85	85
• Boiler water content ($V_{(H20)}$)		l	81	75	157	144
• Flow resistance boiler [5]		z value	1.1	1.1	1.5	1.5
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water content, incl. cladding)		kg	205	217	302	331
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV)		%	97.9/88.2	98.0/88.3	98.0/88.3	97.6/87.9
• Boiler efficiency at 30 % partial load operation (NCV/GCV)		%	108.1/97.4	108.1/97.4	108.1/97.4	108.1/97.4
• Room heating energy efficiency						
- without control	ηs	%	92	92	92	92
- with control	ηs	%	94	94	94	94
- with control and room sensor	ηs	%	96	96	96	96
• NOx class (EN 15502)			-	-	-	-
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	26	28	28	29
• O_2-content in flue gas at min./max. nominal heat output		%	5.5/5.1	5.5/5.1	5.5/5.1	5.5/5.1
• Heat loss in standby mode		Watt	220	220	290	290
Dimensions			see table of dimensions			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-50	17.4-50	17.4-50	17.4-50
- Propane		mbar	37-50	37-50	37-50	37-50
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.97 kWh/m³		m³/h	0.54-3.34	0.77-4.70	1.25-6.57	1.97-9.44
- Natural gas LL – (Wo = 12.4 kWh/m³) NCV = 8.57 kWh/m³		m³/h	0.63-3.89	0.90-5.47	1.46-7.64	2.29-10.98
- Propane (NCV = 25.9 kWh/m³)		m³/h	0.28-1.29	0.39-1.82	0.62-2.53	0.92-3.63
• Operating voltage		V/Hz	230/50	230/50	230/50	230/50
• Electrical power consumption min./max.		Watt	24/95	26/119	25/91	21/230
• Stand-by		Watt	9	9	9	9
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 Part 1) (room air dependent)		dB(A)	62	60	64	67
- Flue gas noise radiated from the mouth (DIN 45635 Part 47) (room air dependent/independent of room air)		dB(A)	55	58	55	59
- Sound pressure level heating noise (depending on installation conditions) [6]		dB(A)	55	53	57	59
• Condensate quantity (natural gas) at 40/30 °C		l/h	3.1	4.4	6.2	8.9
• pH value of the condensate		approx.	4.2	4.2	4.2	4.2
• Construction type			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	55	78	109	157
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	8.1	11.6	18.8	29.5
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	65	68	63	65
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	46	46	43	44
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	31	31	31	32
- Max. permissible temperature of the combustion air		°C	50	50	50	50
- Flow rate combustion air		Nm³/h	41	58	81	117
- Maximum supply pressure for combustion air supply and flue gas line		Pa	120	120	130	130
- Maximum draught/depression at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100, an output reduction of up to 7 % is possible.

[2] Factory measurements

[3] Data related to NCV.

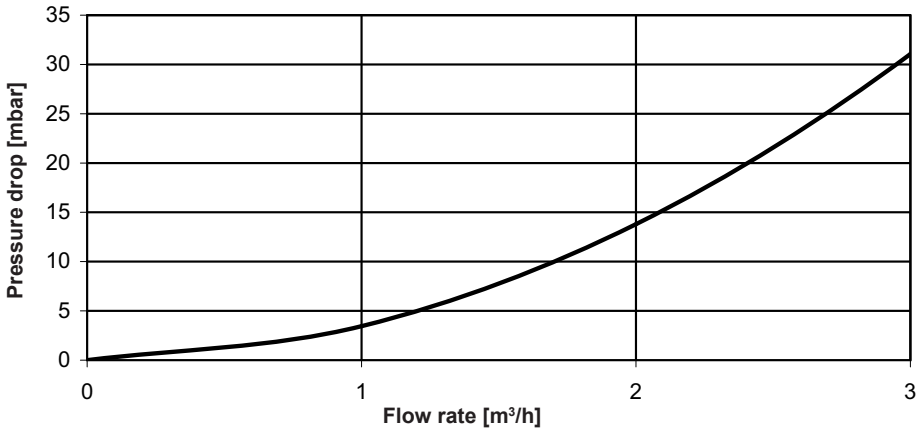
[4] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m³ is possible (readjustment might be necessary).

[5] Flow resistance boiler in mbar = flow rate $(m^3/h)^2$ x z; resp. see diagrams

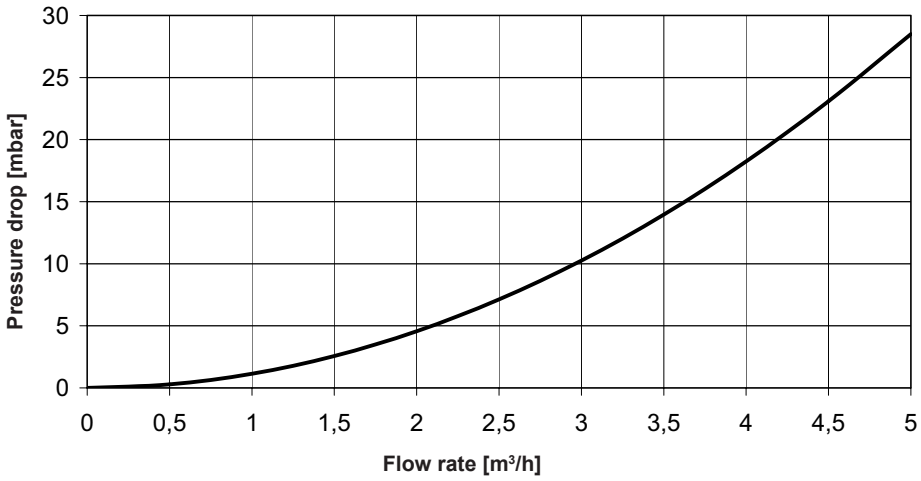
[6] Compare notice at “Engineering”.

Flow resistance on the heating water side

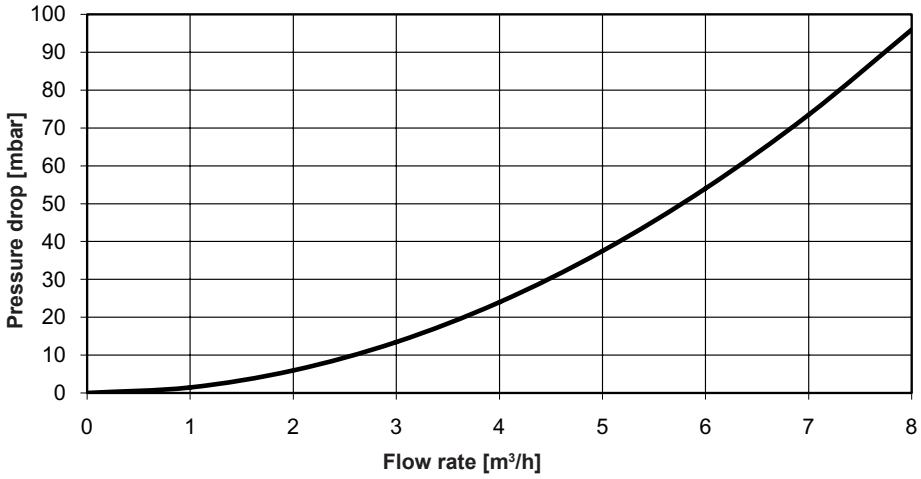
UltraGas® (15-27)



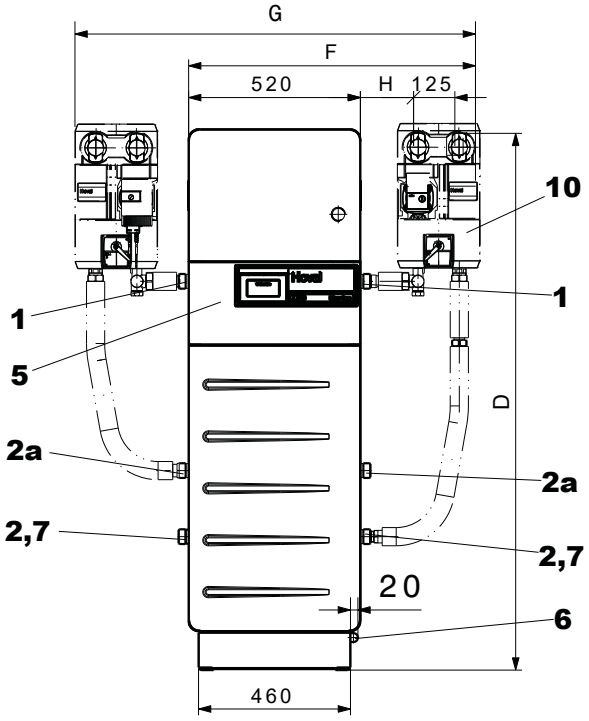
UltraGas® (35,50)

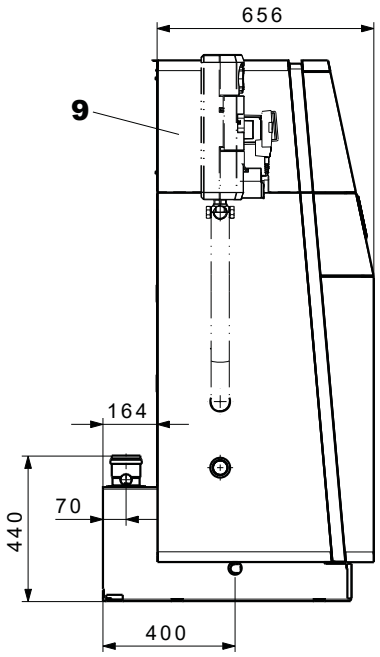


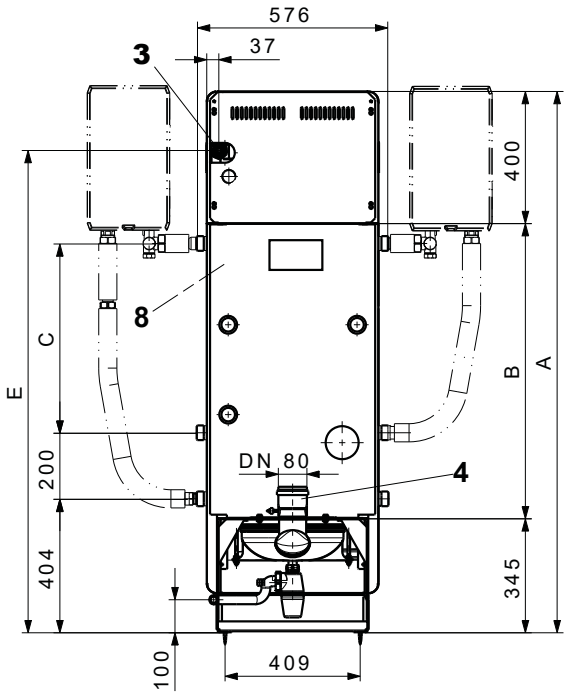
UltraGas® (70,100)

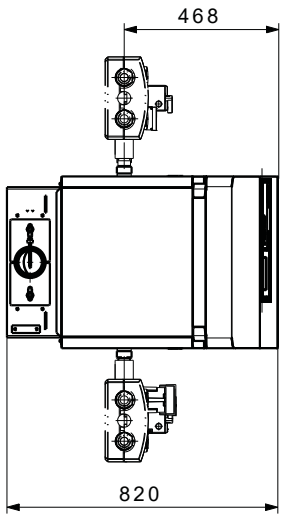


UltraGas® (15-27) with connection set AS25-S/NT/HT and armature group HA25
UltraGas® (35,50) with connection set AS32-S/NT/HT and armature group HA32
(Dimensions in mm)







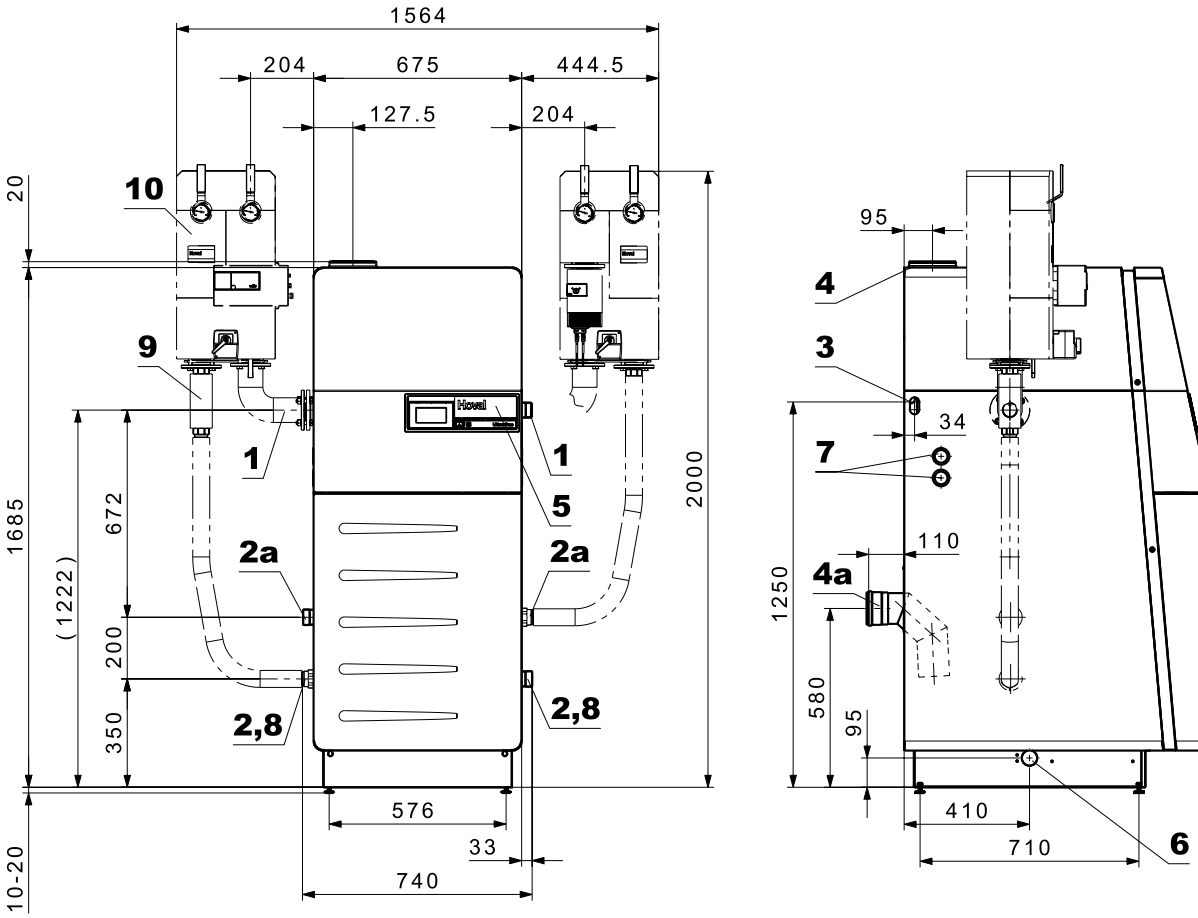


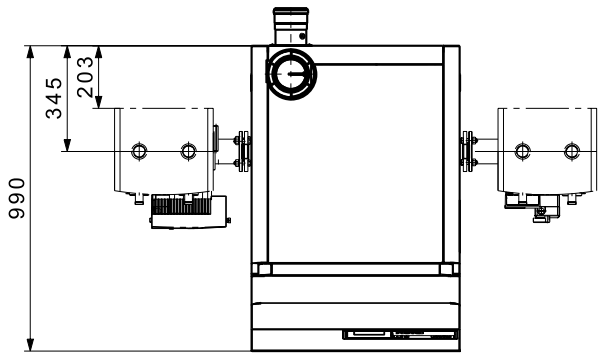
Type	A	B	C	D	E	F	G	H
UltraGas® (15-27)	1400	655	333	1330	1220	852	1184	144
UltraGas® (35,50)	1640	895	573	1620	1460	930	1340	222

Type UltraGas®		(15-27)	(35,50)
1	Flow heating/safety flow	R 1″	R 1 ¼″
2	Low-temperature return	R 1″	R 1 ¼″
2a	High-temperature return	R 1″	R 1 ¼″
3	Gas connection	Rp ¾″	Rp ¾″
4	Flue gas outlet	DN 80	DN 80
5	Control panel		
6	Condensate drain (left or right) incl. siphon (DN 25) and 2 m PVC passage tube inner Ø 19 x 4 mm		
7	Drain		
8	Electric cable entry point		
9	Sound attenuation cowl		
10	Heating armature group or charging group (option)		

Hoval UltraGas® (70,100) with connection set AS40-S/NT/HT and armature group HA40

(Dimensions in mm)

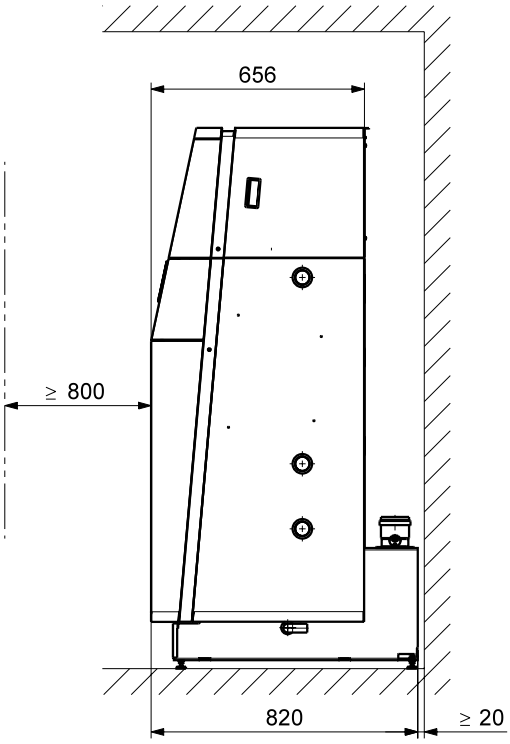


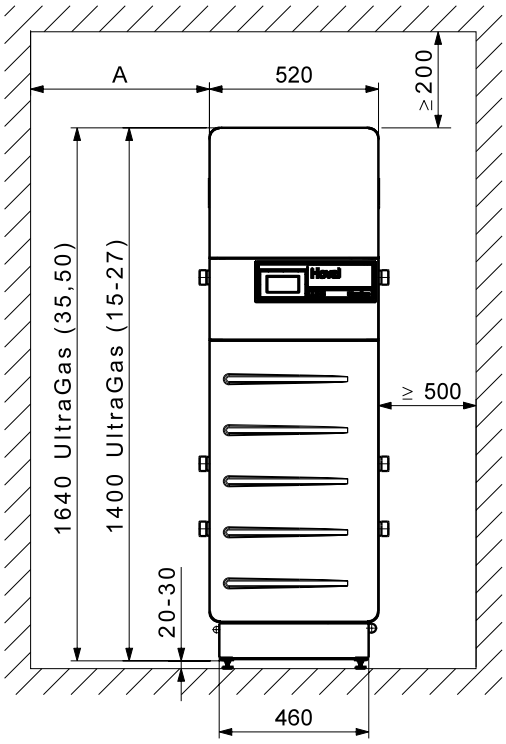


Type UltraGas®		(70)	(100)
1	Flow heating/safety flow	R 1½″	R 1½″
2	Low-temperature return	R 1½″	R 1½″
2a	High-temperature return	R 1½″	R 1½″
3	Duct for the gas pipe left or right	R ¾″	R ¾″
4	Concentrical supply air/flue gas connection	C100/150	C100/150
4a	Combustion air connection to the back (option)	E 100	E 100
5	Control panel		
6	Condensate drain (left or right) incl. siphon (DN 25) and 2 m PVC passage tube inner Ø 19 x 4 mm		
7	Electrical connection left or right		
8	Drain		
9	Connection set (option)		
10	Heating armature group or charging group (option)		

Space requirement
(Dimensions in mm)

UltraGas® (15-50)



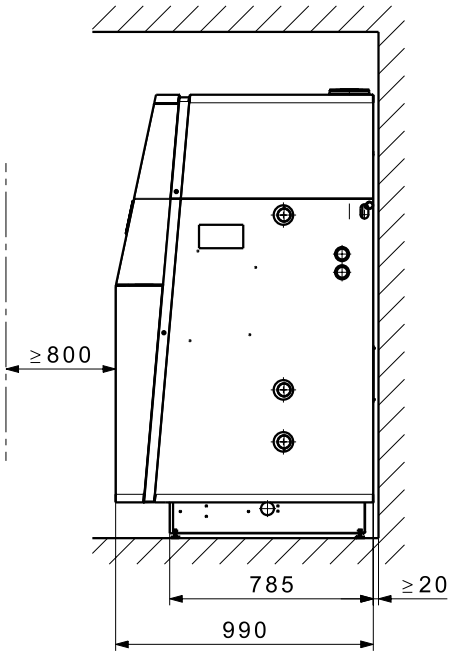


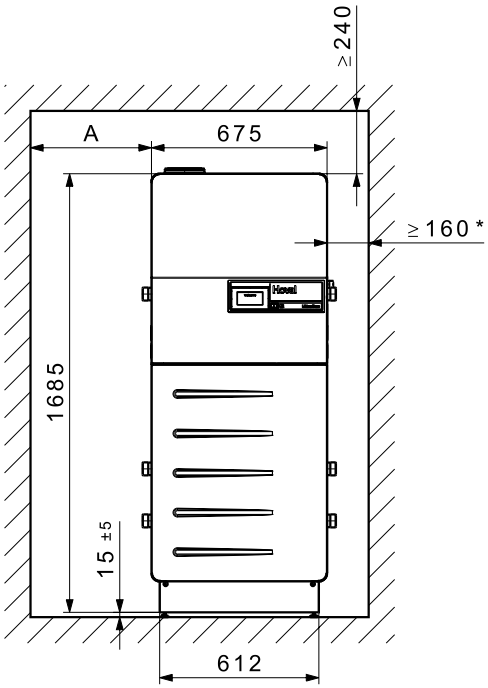
Door of the boiler inclusive burner swivelling to the top and to the left or to the front.
A = minimal 150 mm *
Burner service position in the front – boiler cleaning from the right
A = optimal 300 mm *
Burner service position left – boiler cleaning from the front.
Boiler can be placed with the right side directly against the wall however, a minimum gap of 160 mm is required.

* without armature group,
500 mm with armature group

- The cleaning opening must be well accessible.
- Boiler rear side must be accessible.

UltraGas® (70,100)



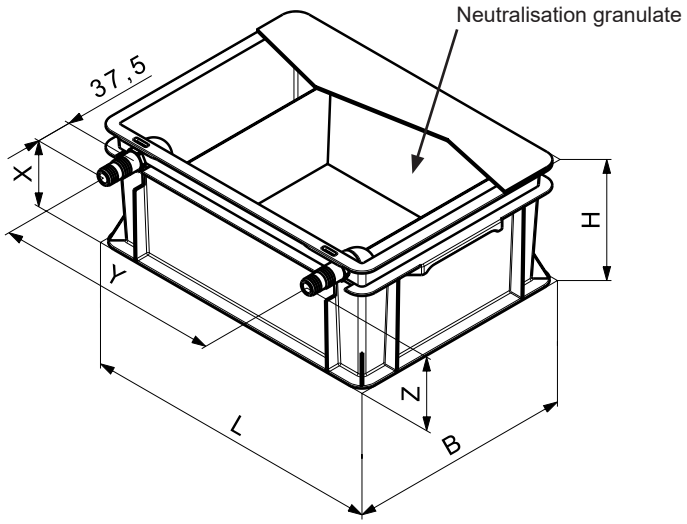


Door of the boiler inclusive burner swivelling to the top and to the left or to the front.
A = minimal 150 mm *
Burner service position in the front – boiler cleaning from the right
A = optimal 300 mm *
Burner service position left – boiler cleaning from the front

* without armature group,
500 mm with armature group

Neutralisation unit HNB-0400 to HNB-1600

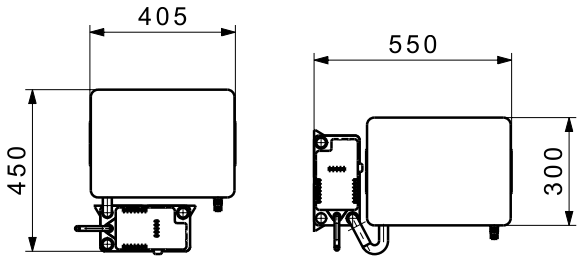
(Dimensions in mm)



	HNB-0400,-0800	HNB-1200,-1600
Dimensions (L x W x H)	405 x 300 x 180 mm	605 x 400 x 180 mm
Inlet height (Z)	128 mm	
Drain height (X)	118 mm	
Distance between the connections (Y)	approx. 350 mm	approx. 550 mm

Neutralisation unit HNB-0400,-0800 and condensate pump

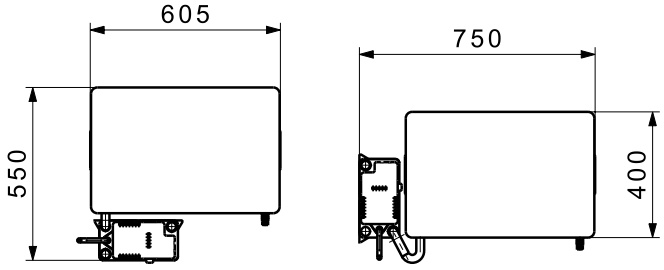
(Dimensions in mm)



Notice
The condensate pump cannot be integrated into the neutralisation box. Installation is only possible outside.

Neutralisation unit HNB-1200,-1600 and condensate pump

(Dimensions in mm)



Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water can be both fully demineralised and also merely softened.

Heating water

- In the case of **full demineralisation of the filling and replacement water**, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.
- In the case of **softening the filling and replacement water,** the following conditions must be complied with:
  - Electrical conductivity of the heating water for operation with water containing salts: > 100 µS/cm to ≤ 1500 µS/cm
  - pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up) must be equipped with a system separation.
- In the case of bivalent heating systems, the values of the heat generator with the strictest requirement for water quality must be complied with.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Frost protection agent

- see separate engineering sheet “Use of frost protection agent”.

Heating room

- Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. wash-, dryer-, work room, hairdressers and so on).
- Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. The connection for direct combustion air supply must be used for direct combustion air supply to the boiler (LAS system). It is very important to ensure that the combustion air is free from halogen compounds. These are present, for example, in spray cans, varnishes, glues, solvents and cleansing agents.

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-independent operation with separate combustion air pipe to the boiler:*
  0.8 cm² per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.
- In the UltraGas®, ventilation of the installation or boiler room must be guaranteed for operation independent from the room air.

- *Room air-dependent operation:*
  Minimum free cross-section of the opening into the open: 150 cm² or twice 75 cm² and additionally 2 cm² necessary for each kW of output over 50 kW for vent into the open.

Gas connection

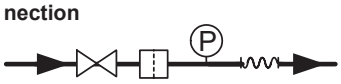
Commissioning

- Initial commissioning must be performed by a specialist technician from Hoval or a gas specialist technician.
- Burner setting values according to the installation instructions.

Manual gas shut-off valve and gas filter

Immediately in front of the boiler a manual gas shut-off device (valve) must be installed according to relevant regulations. Should the local regulations or conditions demand this, an approved gas filter must be installed in the gas supply pipe between the gas tap (thermally releasing) and the boiler in order to prevent malfunction due to foreign particles being carried along with the gas.

Construction of a recommended gas connection



Legend:


manual gas shut-off valve


gas hose/compensator


gas filter

pressure gauge with test burner and push-button valve

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.

Gas pressure natural gas

- Necessary flow pressure at the boiler inlet:
  UltraGas® (15-100)
  min. 17.4 mbar, max. 50 mbar

Gas pressure propane
- A gas pressure controller to reduce the boiler inlet pressure must be installed on-site for propane.
- Necessary gas flow pressure at the boiler inlet: UltraGas® (15-100) min. 37 mbar, max. 50 mbar

Gas pressure regulator
- The installation of a gas pressure regulator is only necessary if the gas flow pressure in the gas network exceeds the maximum permissible gas flow pressure of the UltraGas® or if there are considerable fluctuations in the gas flow pressure.
- Pressure fluctuations in the gas network must be prevented by suitable measures (e.g. gas storage tanks or pressure regulators). The local conditions must be checked in each individual case.

Closed heating system
The boiler is only approved for use in closed heating systems.

Minimum circulation water quantity
No minimum water circulation volume is required.

Calorifier connection
If a calorifier is connected, all heating groups must be provided with a mixer.

Boiler base
The boiler should be placed on a sufficiently high base (boiler base see accessories) to protect it against floor humidity and for the siphon for condensate drain.

Installation instructions
Please observe the installation instructions supplied with every boiler.

Space requirements
See “Dimensions”

Heating boiler in the attic
- If the gas boiler is positioned on the top floor, the installation of a low water protection, which automatically turns the gas burner off in case of water shortage, is recommended.

Condensate drain
- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas line can be discharged via the boiler. A condensate trap is no longer needed in the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic: PVC, PE, PP, ABS and UP
- A siphon must be installed at the condensate outlet on the gas boiler (included in the boiler scope of delivery).

Diaphragm pressure expansion tank
- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The diaphragm pressure expansion tank has to be installed in principle at the heating return.
- Starting from 70 °C an intermediate tank is necessary.

Safety valve
- At the heating flow a safety valve must be installed. An automatic exhauster is built in the boiler.

Noise damping
The following measures are possible for sound insulation:
- Make boiler room walls, ceiling and floor as solid as possible.
- If there are living areas above or below the boiler room, connect pipes flexibly using expansion joints.
- Connect circulating pumps to the piping network using expansion joints

Noise level
- The acoustic **power** level value is independent on the local and spacial circumstances.
- The acoustic **pressure** level is dependent on the installation conditions and can for instance be 5 to 10 dB(A) lower than the acoustic **power** level at a distance of 1 m.

Recommendation:
If the air inlet at the facade is near a noise sensitive place (window of bedroom, terrace etc.), we recommend to use a sound absorber at the direct combustion air inlet.

Flue gas system
- Gas boilers must be connected to a certified and approved flue gas system such as flue gas lines.
- Flue gas lines must be gas-, condensate- and over pressure-tight.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. temperature class T120.
- A flue gas temperature limiter is integrated into the boiler.

Allocation of gas filters for UltraGas® (15-100)

UltraGas® type	Gas throughput natural gas E m^3/h	Gas filter type	Dimension	Pressure drop gas filter (with clean filter) mbar
(15)	1.5	70612/6B	Rp ¾″	0.10
(20)	1.9	70612/6B	Rp ¾″	0.10
(27)	2.6	70612/6B	Rp ¾″	0.10
(35)	3.3	70612/6B	Rp ¾″	0.10
(50)	4.7	70612/6B	Rp ¾″	0.13
(70)	6.6	70602/6B	Rp 1″	0.10
(100)	9.5	70602/6B	Rp 1″	0.14

It is essential to set the dimensions of the gas line!

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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2026 - 04 | Subject to modifications

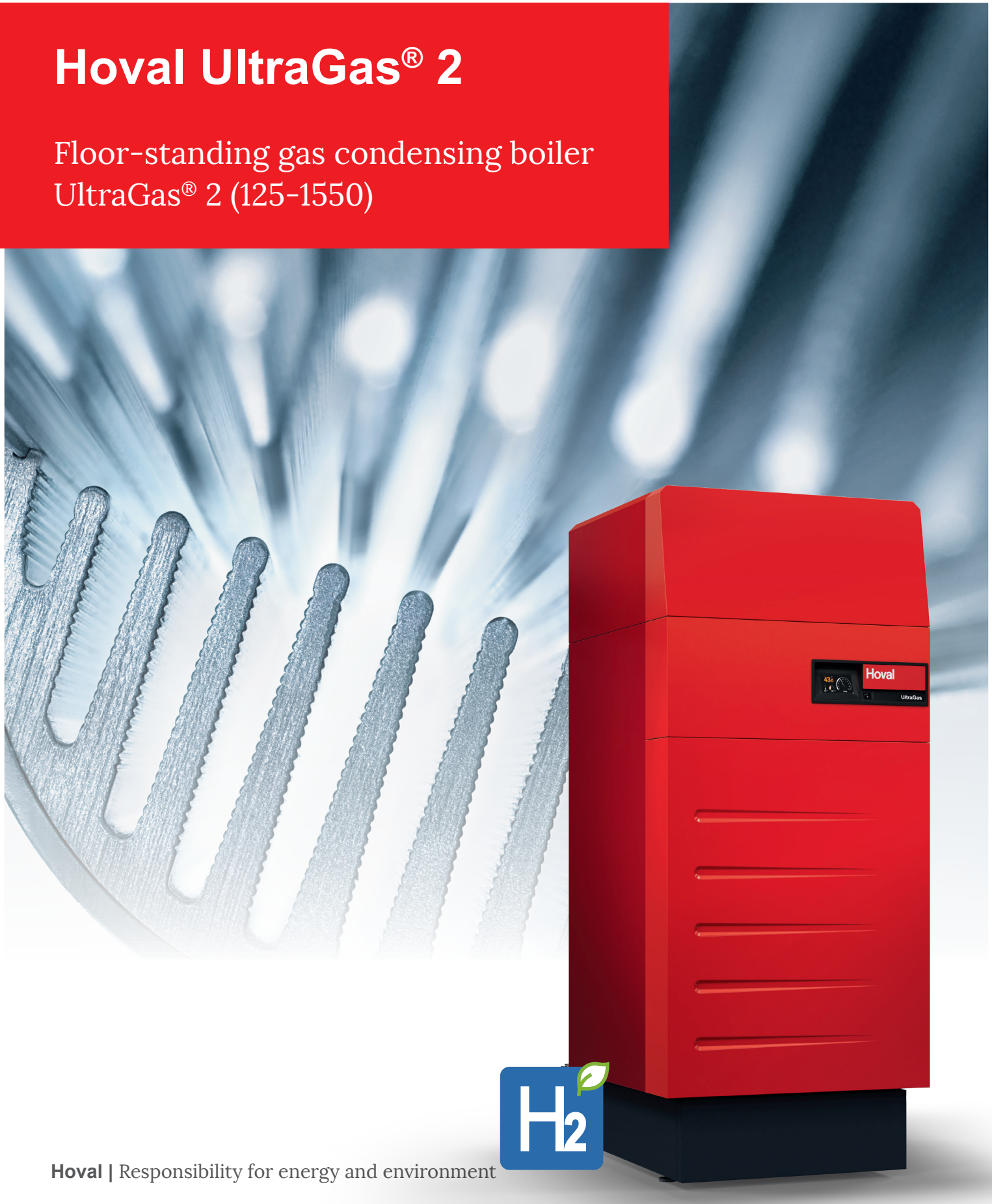
Your Hoval partner

Hoval

CATALOGUE

Hoval UltraGas® 2

Floor-standing gas condensing boiler UltraGas® 2 (125-1550)



Hoval | Responsibility for energy and environment

Table of contents

Hoval UltraGas® 2 (125-1550)

Floor-standing gas condensing boiler
- Floor-standing gas condensing boiler
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Combustion chamber made of stainless steel
- Maximum flue gas condensation by secondary heating surfaces made of **TurboFer®** hybrid stainless steel composite pipes; heating gas side: stainless steel/aluminium water side: stainless steel
- Thermal insulation with mineral wool mat
- Water pressure sensor:
  - Fulfils the function of a minimum and maximum pressure limiter
  - Replacement for the low water level protection
- Flue gas temperature sensor with flue gas limiter function
- Pre-mix burner
  - with fan and venturi
  - modulating operation
  - automatic ignition
  - ionisation guard
  - gas pressure monitor
- Gas boiler fully clad with steel plates, red powder-coated
- Heating connections backwards incl. counter flange, screws and seals for:
  - heating flow
  - high temperature return
  - low temperature return
- *UltraGas® 2 (300-1550):* with integrated gas pipe compensator
- TopTronic® E controller installed
- Possibility of connecting an external gas solenoid valve with error output

TopTronic® E controller

Control panel
- Colour touchscreen 4.3 inch
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating statuses
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with HovalConnect option)
- Adaptation of the heating strategy based on the weather forecast (with HovalConnect option)

TopTronic® E basic module heat generator TTE-WEZ
- Control functions integrated for
  - 1 heating circuit with mixer
  - 1 heating circuit without mixer
  - 1 hot water charging circuit
  - bivalent and cascade management

Model range

UltraGas® 2 type	Nominal heat output at 50/30 °C kW
(125)	25-126
(150)	35-151
(190)	38-191
(230)	51-233
(300)	58-299
(350)	70-352
(400)	69-399
(450)	77-451
(500)	77-491
(620)	136-622
(700)	146-703
(800)	166-804
(1000)	205-999
(1100)	229-1112
(1300)	269-1320
(1550)	324-1550
H (700)	146-703
H (1100)	229-1112
H (1550)	324-1550

- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- RAST 5 basic plug set

Options for TopTronic® E controller
- Can be expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be networked with a total of up to 16 controller modules:
  - heating circuit/hot water module
  - solar module
  - buffer module
  - measuring module

Number of modules that can be additionally installed in the heat generator:

UltraGas® 2 (125-230)
- 1 module expansion and 1 controller module **or**
- 2 controller modules

UltraGas® 2 (300-500):
- 3 controller modules/module expansions

UltraGas® 2 (620-1550):
- 4 controller modules/module expansions

Notice
Max. 1 module expansion can be connected to the basic module heat generator TTE-WEZ!

The supplementary plug set must be ordered in order to use expanded controller functions.

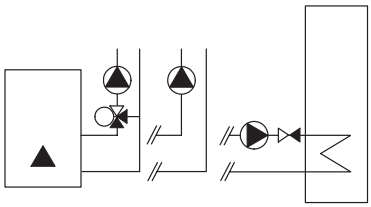
Further information about the TopTronic® E
see “Controls”

Optional
- With or without neutralisation
- Free-standing calorifier see Calorifiers

Delivery
- Boiler, cladding and thermal insulation separately packed and delivered

On-site
- Mounting of cladding, thermal insulation and boiler controller
- Mounting of boiler feet

Floor-standing gas condensing boiler



Boiler permissions

CE product ID No. UltraGas® 2 (125-1550)	CE-0085DL0175
SVGW No.	20-010-4

Hoval UltraGas® 2 (125-1550)

Floor-standing gas condensing boiler with built-in Hoval TopTronic® E control

Control functions integrated for
- 1 heating circuit with mixer
- 1 heating circuit without mixer
- 1 hot water charging circuit
- bivalent and cascade management

- Can be optionally expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be optionally networked with a total of up to 16 controller modules (incl. solar module)

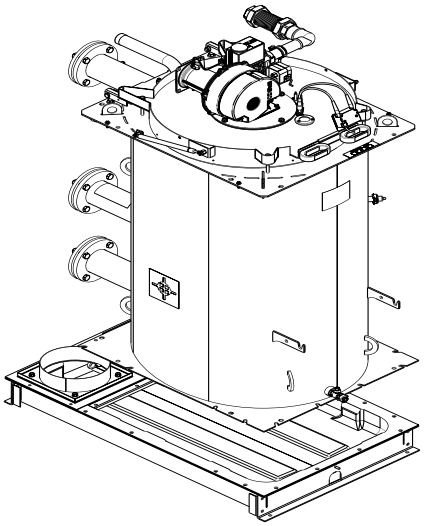
Boiler made of steel with TopTronic® E control, combustion chamber made of stainless steel. Secondary heating surfaces made of **TurboFer®** hybrid stainless steel composite pipes. Pre-mix burner with fan.Modulating burner.

Delivery
Boiler, cladding and thermal insulation separately packed

UltraGas® 2 type	Nominal heat output at 50/30 °C kW [1]	Operating pressure bar	Part No.
(125)	25-126	6	7018 911
(150)	35-151	6	7018 912
(190)	38-191	6	7018 913
(230)	51-233	6	7018 914
(300)	58-299	6	7018 823
(350)	70-352	6	7018 824
(400)	69-399	6	7018 825
(450)	77-451	6	7019 125
(500)	77-491	6	7018 826
(620)	136-622	6	7018 848
(700)	146-703	6	7018 869
(800)	166-804	6	7018 841
(1000)	205-999	6	7018 842
(1100)	229-1112	6	7018 843
(1300)	269-1320	6	7018 891
(1550)	324-1550	6	7018 892

[1] kW = modulation range

Floor-standing gas condensing boiler (multi-part installation)



Hoval UltraGas® 2 (125-1550) (multi-part installation)

Floor-standing gas condensing boiler with built-in Hoval TopTronic® E control for **multi-part installation**. Assembled on-site by the installer.

UltraGas® 2 type	Nominal heat output 50/30 °C kW	Operating pressure bar	Part No.
(125)	25-126	6	7018 909
(150)	35-151	6	7018 910
(190)	38-191	6	7018 929
(230)	51-233	6	7018 930
(300)	58-299	6	7018 816
(350)	70-352	6	7018 817
(400)	69-399	6	7018 818
(450)	77-451	6	7019 124
(500)	77-491	6	7018 849
(620)	136-622	6	7018 864
(700)	146-703	6	7018 865
(800)	166-804	6	7018 854
(1000)	205-999	6	7018 855
(1100)	229-1112	6	7018 856
(1300)	269-1320	6	7018 899
(1550)	324-1550	6	7018 900

[1] kW = modulation range

Floor-standing gas condensing boiler (high-pressure design)

Delivery time approx. 8 weeks

Hoval UltraGas® 2 H (700-1550) (high-pressure design)

Floor-standing gas condensing boiler in **high-pressure design** (operating pressure 10 bar)

UltraGas® 2 type	Nominal heat output 50/30 °C kW	Operating pressure bar	Part No.
H (700)	146-703	10	7019 065
H (1100)	229-1112	10	7018 776
H (1550)	324-1550	10	7018 777

[1] kW = modulation range

Labels for conversion to propane
for UltraGas® 2 (125-350) — 6064 576

Labels for conversion to propane
for UltraGas® 2 (400-800) — 6064 578

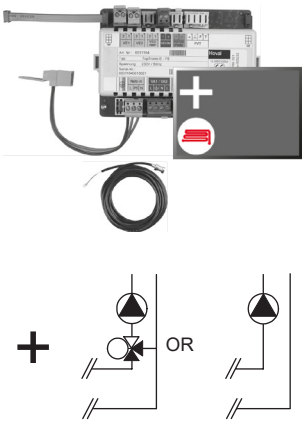
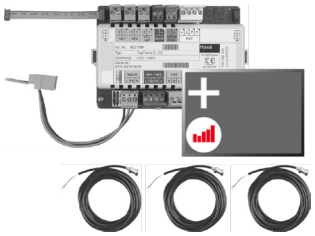
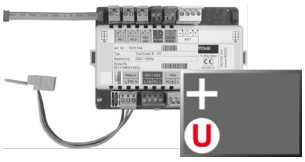
Labels for conversion to propane
for UltraGas® 2 (1000-1550) — 6064 554

System flow sensor
for UltraGas® 2 for installation in the flow connector sleeve Rp ¼″, for regulating the flow temperature. Consisting of temperature sensor and connection cable — 6053 398

Installation of the system flow sensor is recommended for optimal control of the flow temperature.

TopTronic® E module expansions

for TopTronic® E basic module heat generator

		Part No.
	**TopTronic® E module expansion heating circuit TTE-FE HK** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module **Notice** The supplementary plug set may have to be ordered to implement functions differing from the standard!	6034 576
	**TopTronic® E module expansion heating circuit incl. energy balancing TTE-FE HK-EBZ** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module **Notice** Suitable flow rate sensors (pulse sensors) must be provided on site.	6037 062
	**TopTronic® E module expansion Universal TTE-FE UNI** Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module **Further information** see “Controls” – “Hoval TopTronic® E module expansions” chapter **Notice** Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented.	6034 575

Accessories for TopTronic® E

		Part No.
TopTronic® E controller modules		
TTE-HK/WW	TopTronic® E heating circuit/ hot water module	6034 571
TTE-SOL	TopTronic® E solar module	6037 058
TTE-PS	TopTronic® E buffer module	6037 057
TTE-MWA	TopTronic® E measuring module	6034 574
Supplementary plug set		
for basic module heat generator TTE-WEZ		6034 499
for controller modules and module expansion TTE-FE HK		6034 503
TopTronic® E room control modules		
TTE-RBM	TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070
Enhanced language package TopTronic® E		6039 253
one SD card required per control module Consisting of the following languages: HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA, NL		
HovalConnect		
HovalConnect LAN		6049 496
HovalConnect WLAN		6049 498
HovalConnect Modbus		6049 501
HovalConnect KNX		6049 593
TopTronic® E interface modules		
GLT module 0-10 V		6034 578
TopTronic® E sensors		
AF/2P/K	Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
TF/2P/5/6T	Immersion sensor, L = 5.0 m	2055 888
ALF/2P/4/T	Contact sensor, L = 4.0 m	2056 775
TF/1.1P/2.5S/6T	Collector sensor, L = 2.5 m	2056 776
System module SB-SM-BZ1 for passing on a volt-free operating and fault message. (for 1-stage/modulating H-Gens)		6048 055
Bivalent switch		
for various release or switching functions		
Bivalent switch 1-piece		2056 858
Bivalent switch 2-piece		2061 826
System casing		
System casing 182 mm		6038 551
System casing 254 mm		6038 552
TopTronic® E wall casing		
WG-190	Wall casing small	6052 983
WG-360	Wall casing medium	6052 984
WG-360 BM	Wall casing medium with control module cut-out	6052 985
WG-510	Wall casing large	6052 986
WG-510 BM	Wall casing large with control module cut-out	6052 987

Further information
see “Controls”

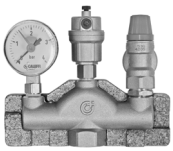
Accessories

Flow temperature monitor
for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover

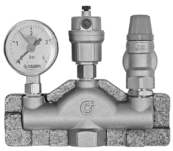
Clamp-on flow temperature monitor RAK-TW1000S
with retaining strap, without cable and plug — 242 902

Clamp-on flow temperature monitor set RAK-TW1000S
with retaining strap, supplied with cable (4 m) and plug — 6033 745

Immersion thermostat RAK-TW1000S
Thermostat with immersion sleeve ½″
Depth of immersion 150 mm,
nickel-plated brass — 6010 082



Safety set DN 25
complete with safety valve
DN 25 (3 bar), up to 200 kW
Pressure gauge and automatic aspirator with barrier
Connection: 1″ internal thread — 6018 709

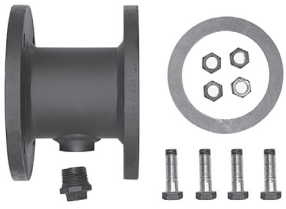


Safety set DN 32
complete with safety valve
DN 32 (3 bar), up to 350 kW
Pressure gauge and automatic aspirator with barrier
Connection 1¼″ internal thread — 6018 710

Fitting pipe flow

Safety fitting pipe for flow and return
Suitable for max. 6 bar, with screws and nuts.
- for installation on the flow or high and low-temperature return of the Hoval UltraGas® 2 boiler
- for installation of an additional safety temperature limiter, a maximum pressure limiter
- for connection of a diaphragm pressure expansion tank on the return

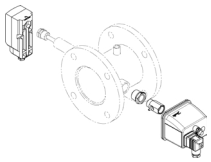
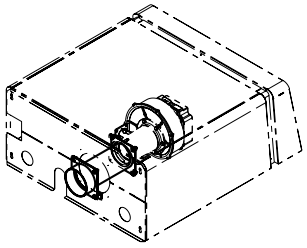
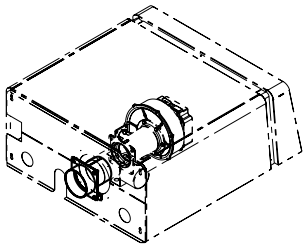
Dimension	Suitable for UltraGas® 2	Connection	Part No.
DN 65	(125-230)	flow	6053 408
DN 65	(125-230)	return	6023 108
DN 100	(300-700)	flow	6053 409
DN 100	(300-700)	return	6023 110
DN 125	(800-1100)	flow	6055 078
DN 125	(800-1100)	return	6023 112
DN 150	(1300,1550)	flow	6055 079
DN 150	(1300,1550)	return	6051 680



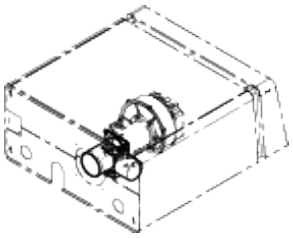
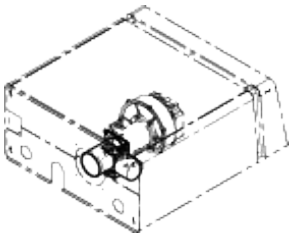
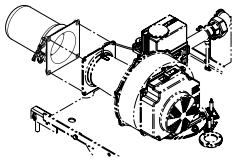
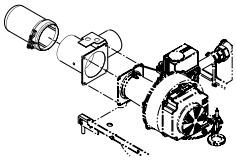
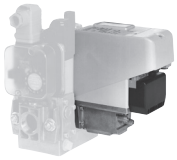
Fitting pipe return

Further information see “Dimensions” Hoval UltraGas® 2 (125-1550)

Accessories

	Part No.
 **Safety armature set** Compatible with fitting pipe for meeting safety requirements of EN 12828: > 300 kW or SWKI HE301-01: 70-1000 kW related to single boiler Consisting of: - adjustable maximum pressure limiter incl. ball valve - safety temperature limiter (RAK-ST.131)	6051 903
 **Hydraulic butterfly valve** for direct installation on the flow and/or return of the boiler pre-wired. Operating method: continuously controlling (2-10 V)	
Type	
UltraGas® 2 (125-230) DN 65 / 24 V	6050 605
UltraGas® 2 (300-700) DN 100 / 24 V	6065 606
UltraGas® 2 (800-1100) DN 125 / 230 V	6065 607
UltraGas® 2 (1300,1550) DN 150 / 230 V	6065 608
 **Connection for direct combustion air supply** Not to be combined with motorised combustion air damper	
Type	
UltraGas® 2 (125,150)	6052 548
UltraGas® 2 (190,230)	6052 550
UltraGas® 2 (300-500)	6053 096
UltraGas® 2 (620,700)	6053 779
UltraGas® 2 (800-1100)	6053 781
UltraGas® 2 (1300,1550)	6052 844
Recommendation: If the air intake opening at the facade is near a noise sensitive place (window of bedroom, terrace etc.), we recommend to use a silencer at the direct fresh air inlet.	
 **Connection for direct combustion air supply** Only in combination with a motorised combustion air damper (ordered separately). Can also be used for creating a boiler cascade with a common flue gas line.	
Type	
UltraGas® 2 (125,150)	6052 847
UltraGas® 2 (190,230)	6052 848
UltraGas® 2 (300-500)	6053 097
UltraGas® 2 (620,700)	6053 780
UltraGas® 2 (800-1100)	6053 782
UltraGas® 2 (1300,1550)	6052 849

Accessories

		Part No.
	**Motorised combustion air damper DN 110** for UltraGas® 2 (125-500) For boiler cascades with a common flue gas line. Ready-to-connect	6015 196
	**Motorised combustion air damper DN 180** for UltraGas® 2 (620-1550) For boiler cascades with a common flue gas line. Ready-to-connect	6015 197
	**Connection protection filter** for filtering the combustion air in the building phase	
	for installation on the air suction socket:	
	UltraGas® 2 (125-500)	6052 283
	UltraGas® 2 (620-1550)	6052 284
	for installation on the combustion air damper:	
	UltraGas® 2 (125-500)	6052 151
	UltraGas® 2 (620-1550)	6052 152
	**Gas valve** with thermally releasing cut-off device.	
	Type / Connection inches	
	DN 25 / R 1″	2069 324
	DN 32 / R 1¼″	2069 325
	DN 40 / R 1½″	2069 326
	DN 50 / R 2″	2069 327
	**Valve testing system** for UltraGas® 2 (125-1550), UltraGas® 2 (250D-3100D) Automatic, compact testing system for testing the leakage of the gas valve before each burner start with ready-to-connect wiring. Suitable for all gas qualities for which the UltraGas® 2 is permitted.	
	Type	
	UltraGas® 2 (125-350)	6039 964
	UltraGas® 2 (400-700)	6039 965
	UltraGas® 2 (800-1550)	6054 484
	For an UltraGas® 2 double boiler, two valve test systems must be ordered.	

Accessories

For a kit, the gas ball valve, fitting protection and mounting set must each be ordered separately in the same dimension.

Gas valve kit
Set with gas valve and thermally releasing shut-off device
Thermal closing at approx. 95 °C
Tripping time < 60 s
Maximum working pressure 5 bar
Ambient temperature < 60 °C
Combustible gases according to G260

Gas ball valve with flange

Type	Part No.
DN 65	2007 988
DN 80	2007 989
DN 100	2007 990

Fitting protection TAS

Type	Part No.
TAS 23-65	2069 328
TAS 23-80	2069 329
TAS 23-100	2069 330

Mounting set for assembly
Gas ball valve with fitting protection

Type	Part No.
MS-TAS 23-65	6041 745
MS-TAS 23-80	6041 746
MS-TAS 23-100	6041 747

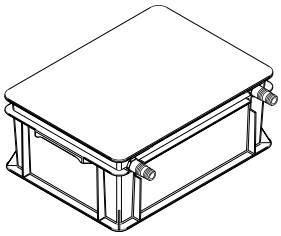
Gas filter
with measurement nozzle before and behind the filter inset (diameter: 9 mm)
Pore width of the filter inset < 50 µm
Max. pressure difference 10 mbar
Inlet pressure:
UltraGas® 2 (125-700): max. 80 mbar
UltraGas® 2 (800-1550): max 300 mbar

Type	Connection	Part No.
70602/6B	Rp 1″	2007 996
70604/6B	Rp 1¼″	2054 495
70603/6B	Rp 1½″	2007 997
70631/6B	Rp 2″	2007 998
70610F/6B	DN 65	2007 999

Gas pipe compensator 1″ — 6034 556
for UltraGas® 2 (125,150),
UltraGas® 2 D (250,300)
for compensating for connection tolerances in the gas pipe

Gas pipe compensator 1½″ — 6034 557
for UltraGas® 2 (190,230),
UltraGas® 2 D (380,460)
for compensating for connection tolerances in the gas pipe

Condensate drainage to UltraGas® 2



Neutralisation box
Condensate drain into a lower drainage duct
Connection hose: 2 m
Service life up to 1 year, depending on the boiler operating mode
Positioning behind the boiler or laterally
One neutralisation box per boiler

Type		Neutralisation granulate	Part No.
UltraGas® 2 (125-400)	HNB-0400	3 kg	6054 792
UltraGas® 2 (450-800)	HNB-0800	6 kg	6054 793
UltraGas® 2 (1000,1100)	HNB-1200	9 kg	6054 794
UltraGas® 2 (1300,1550)	HNB-1600	12 kg	6054 795

Condensate pump — 6063 855
For transporting condensate into a higher drainage duct
Including connection lines
Completely wired, cable and plug
For connection to the boiler controller
Delivery head: max. 5 m
Can be combined with neutralisation box

Condensate pump — 6063 856
for UltraGas® 2 (1000-1550)
For transporting the condensate into a higher drainage duct
Including connection line
Completely wired, cable and plug
For connection to the boiler controller
Delivery head: 4 m
Can be combined with neutralisation box

Neutralisation granulate — 2028 906
for neutralisation box
Refill set volume 3 kg
Life time of one filling:
approx. 1 year, depending on amount of condensate

Services

Services and associated scope of services
see separate catalogue “Hoval Services”

Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.

Part No.

Hoval UltraGas® 2 (125-230)

Type			(125)	(150)	(190)	(230)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	21-114	33-139	35-177	47-218
• Nominal heat output at 50/30 °C, natural gas [1]		kW	25-126	35-151	38-191	51-233
• Nominal heat output at 80/60 °C, propane [2]		kW	32-113	43-138	52-175	66-217
• Nominal heat output at 50/30 °C, propane [2]		kW	35-126	48-151	59-191	73-233
• Nominal heat input with natural gas [3]		kW	23-116	32-142	35-179	47-223
• Nominal heat input with propane [2]		kW	33-116	44-142	54-179	68-223
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	207	195	276	265
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	390	400	485	505
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.6/88.9	97.6/88.1	98.5/88.7	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	108.7/98.1	108.7/98.1	109.0/98.2	108.4/97.8
• Room heating energy efficiency						
- without control	ηs	%	93	93	93	93
- with control	ηs	%	95	95	95	95
- with control and room sensor	ηs	%	97	97	97	97
- annual energy consumption	Q_{HE}	GJ	209	265	326	412
• NOx class (EN 15502)			-	-	-	-
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	25	28	33	37
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	31	21	25	13
• O_2 content in flue gas min./max. output		%	5.9/5.6	5.5/6.0	5.9/6.0	6.0/5.9
• Heat loss in standby mode (EN 15502) (50°C)		Watt	260	260	320	320
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	80
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	2.4-12.0	3.3-14.6	3.6-18.5	4.8-23.0
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	2.8-14.3	3.9-17.5	4.3-22.0	5.8-27.4
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	1.4-4.8	1.8-5.8	2.2-7.3	2.8-9.1
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	41/140	43/225	38/151	49/228
• Standby		Watt	7	8	8	8
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	64	69	63	66
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	69	70	66	68
- Sound pressure level heating noise (reference value depending on installation conditions)		dB(A)	54	59	53	56
• Condensate quantity (natural gas) at 50/30 °C		l/h	11	12	15	20
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	188	226	283	344
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	37	51	55	63
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	64	65	68	69
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	43	45	46	47
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	28	29	29
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	154	180	232	280
- Maximum supply pressure for combustion air supply and flue gas line		Pa	120	120	130	130
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 (300-450)

Type			(300)	(350)	(400)	(450)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	54-274	67-315	62-362	73-415
• Nominal heat output at 50/30 °C, natural gas [1]		kW	58-299	70-352	69-399	77-451
• Nominal heat output at 80/60 °C, propane [2]		kW	83-274	94-311	109-361	124-408
• Nominal heat output at 50/30 °C, propane [2]		kW	93-299	109-352	123-399	138-451
• Nominal heat input with natural gas [3]		kW	54-282	64-331	62-374	71-427
• Nominal heat input with propane [2]		kW	87-282	102-331	114-374	130-427
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	472	452	432	412
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	730	765	800	830
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.2/98.4	108.9/98.1	109.0/98.2	108.9/98.1
• Room heating energy efficiency						
- without control	ηs	%	94	93	93	-
- with control	ηs	%	96	95	95	-
- with control and room sensor	ηs	%	98	97	97	-
- annual energy consumption	Q_{HE}	GJ	505	590	653	-
• NOx class (EN 15502)			-	-	-	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	39	45	39	45
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	18	26	23	30
• O_2 content in flue gas min./max. output		%	5.5/5.8	5.7/5.7	5.9/5.9	6.0/5.6
• Heat loss in standby mode (EN 15502) (50°C)		Watt	430	430	430	430
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	80
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	5.6-29.1	6.6-34.1	6.4-38.6	7.3-44.0
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	6.6-34.7	7.9-40.7	7.6-46.0	8.7-52.5
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	3.6-11.6	4.2-13.6	4.7-15.3	5.3-17.5
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	51/365	55/350	56/518	56/590
• Standby		Watt	5	5	5	5
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	73	70	73	74
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	71	72	73	74
- Sound pressure level heating noise (reference value depending on installation conditions)		dB(A)	63	60	63	64
• Condensate quantity (natural gas) at 50/30 °C		l/h	22	25	28	29
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	445	522	591	674
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	85	101	98	112
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	64	65	66	67
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	43	44	48	47
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	29	29	29
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	364	428	483	552
- Maximum supply pressure for combustion air supply and flue gas line		Pa	130	130	130	130
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 (500-800)

Type			(500)	(620)	(700)	(800)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	71-449	125-580	132-653	150-743
• Nominal heat output at 50/30 °C, natural gas [1]		kW	77-491	136-622	146-703	166-804
• Nominal heat output at 80/60 °C, propane [2]		kW	133-441	173-569	193-643	233-744
• Nominal heat output at 50/30 °C, propane [2]		kW	147-491	184-622	208-703	254-804
• Nominal heat input with natural gas [3]		kW	71-463	124-591	134-668	151-759
• Nominal heat input with propane [2]		kW	140-463	179-591	201-668	236-759
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	408	536	509	831
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	855	1090	1135	1435
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.3/88.6
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.0/98.2	109.0/98.2	108.9/98.1	109.1/98.3
• Room heating energy efficiency						
- without control	ηs	%	-	-	-	-
- with control	ηs	%	-	-	-	-
- with control and room sensor	ηs	%	-	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-	-
• NOx class (EN 15502)			6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	50	33	40	36
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	46	24	26	23
• O_2 content in flue gas min./max. output		%	5.5/5.8	5.9/6.0	6.0/5.7	6.0/5.8
• Heat loss in standby mode (EN 15502) (50°C)		Watt	430	540	540	600
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-300
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	300
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	7.3-47.7	12.8-60.9	13.8-68.9	15.6-78.2
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	8.7-56.9	15.3-72.7	16.5-82.2	18.6-93.4
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	5.7-19.0	7.3-24.2	8.2-27.4	9.7-31.1
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	57/716	63/831	67/1060	94/1012
• Standby		Watt	5	5	5	7
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	78	75	76	78
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	77	72	71	72
- Sound pressure level heating noise (reference value depending on installation conditions)		dB(A)	68	65	66	68
• Condensate quantity (natural gas) at 50/30 °C		l/h	37	51	48	57
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	736	933	1055	1198
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	112	196	211	238
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	66	68	69	66
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	44	47	49	44
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	28	28	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	602	764	863	981
- Maximum supply pressure for combustion air supply and flue gas line		Pa	130	130	130	130
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 (1000-1550)

Type			(1000)	(1100)	(1300)	(1550)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	185-926	203-1038	241-1230	297-1447
• Nominal heat output at 50/30 °C, natural gas [1]		kW	205-999	229-1112	269-1320	324-1550
• Nominal heat output at 80/60 °C, propane [2]		kW	262-926	299-1033	362-1227	427-1439
• Nominal heat output at 50/30 °C, propane [2]		kW	282-999	316-1112	385-1320	453-1550
• Nominal heat input with natural gas [3]		kW	187-943	206-1057	247-1251	297-1469
• Nominal heat input with propane [2]		kW	265-943	306-1057	371-1251	437-1469
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	756	718	1211	1118
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	1580	1635	2280	2445
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.0/98.2	108.6/97.8	108.7/97.9	108.5/97.7
• Room heating energy efficiency						
- without control	ηs	%	-	-	-	-
- with control	ηs	%	-	-	-	-
- with control and room sensor	ηs	%	-	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-	-
• NOx class (EN 15502)			6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	36	41	37	35
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	25	26	23	23
• O_2 content in flue gas min./max. output		%	6.0/5.9	6.0/5.9	6.0/5.9	6.0/6.0
• Heat loss in standby mode (EN 15502) (50°C)		Watt	600	600	740	740
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-300	17.4-300	17.4-300	17.4-300
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	300	300	300	300
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	19.3-97.2	21.2-109.0	25.5-129.0	30.6-151.4
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	23.0-116.0	25.3-130.0	30.4-153.9	36.5-180.7
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	10.9-38.6	12.5-43.3	15.2-51.3	17.9-60.2
• Operating voltage (50/60 Hz)		V	1 x 230 3 x 400	1 x 230 3 x 400	1 x 230 3 x 400	1 x 230 3 x 400
• Electrical power consumption min./max.		Watt	203-1873	203-1933	271/4111	301/4141
• Standby		Watt	7	7	5	7
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	83	82	86	85
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	76	76	74	76
- Sound pressure level heating noise (reference value depending on installation conditions)		dB(A)	73	72	74	76
• Condensate quantity (natural gas) at 50/30 °C		l/h	68	72	100	138
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	1488	1669	1975	2230
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	295	325	390	450
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	69	70	66	68
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	47	49	45	46
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	28	29	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	1219	1366	1617	1830
- Maximum supply pressure for combustion air supply and flue gas line		Pa	130	130	130	130
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 H (700-1550)

Type			H (700)	H (1100)	H (1550)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	132-653	203-1038	297-1447
• Nominal heat output at 50/30 °C, natural gas [1]		kW	146-703	229-1112	324-1550
• Nominal heat output at 80/60 °C, propane [2]		kW	193-643	299-1033	427-1439
• Nominal heat output at 50/30 °C, propane [2]		kW	208-703	316-1112	453-1550
• Nominal heat input with natural gas [3]		kW	134-668	206-1057	297-1469
• Nominal heat input with propane [2]		kW	201-668	306-1057	437-1469
• Operating pressure heating min./max. (PMS)		bar	1/10	1/10	1/10
• Operating temperature max. (T_{max})		°C	95	95	95
• Boiler water content ($V_{(H20)}$)		l	509	709	1118
• Flow resistance boiler				see diagram	
• Minimum circulation water quantity		l/h	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	1170	1735	2550
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	108.9/98.1	108.6/97.8	108.5/97.7
• Room heating energy efficiency					
- without control	ηs	%	-	-	-
- with control	ηs	%	-	-	-
- with control and room sensor	ηs	%	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-
• NOx class (EN 15502)			6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	40	41	35
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	26	26	23
• O_2 content in flue gas min./max. output		%	6.0/5.7	6.0/5.9	6.0/6.0
• Heat loss in standby mode (EN 15502) (50°C)		Watt	540	600	740
• Dimensions				see dimensional drawing	
• Gas flow pressure min./max.					
- Natural gas E/LL		mbar	17.4-80	17.4-300	17.4-300
- Propane		mbar	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	300	300
• Gas connection values at 15 °C/1013 mbar:					
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	13.8-68.9	21.2-109.0	30.6-151.4
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	16.5-82.2	25.3-130.0	36.5-180.7
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	8.2-27.4	12.5-43.3	17.9-60.2
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230 3 x 400	1 x 230 3 x 400
• Electrical power consumption min./max.		Watt	67/1060	203/1933	301/4141
• Standby		Watt	5	7	7
• Type of protection		IP	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40
• Sound power level					
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	76	82	85
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	71	76	76
- Sound pressure level heating noise (reference value depending on installation conditions)		dB(A)	66	72	76
• Condensate quantity (natural gas) at 50/30 °C		l/h	48	72	138
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2
• Construction				B23, B23P, C53, C63	
• Flue gas system					
- Temperature class			T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	1055	1669	2230
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	211	325	450
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	69	70	68
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	49	49	46
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48
- Combustion air flow rate		Nm^3/h	863	1366	1830
- Maximum supply pressure for combustion air supply and flue gas line		Pa	130	130	130
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

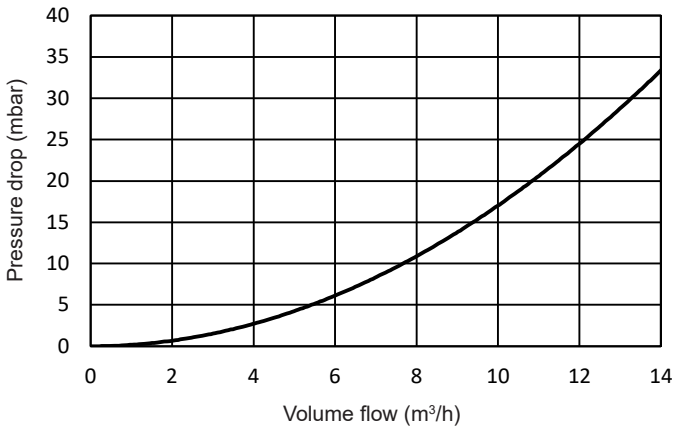
[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

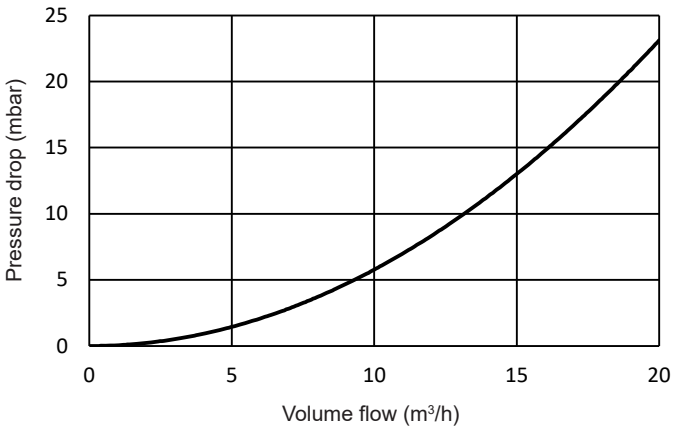
[4] Conversion acc. to EN 15502-1, Appendix J

Flow resistance on the heating water side

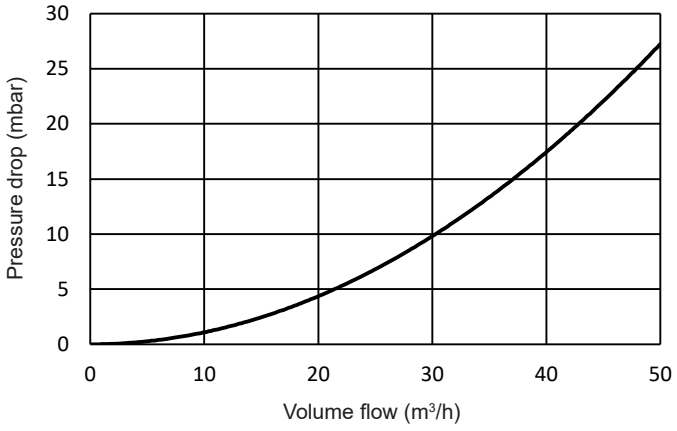
UltraGas® 2 (125,150)



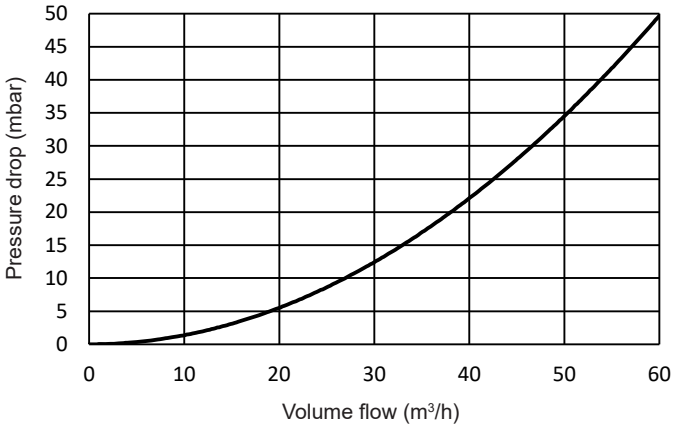
UltraGas® 2 (190,230)



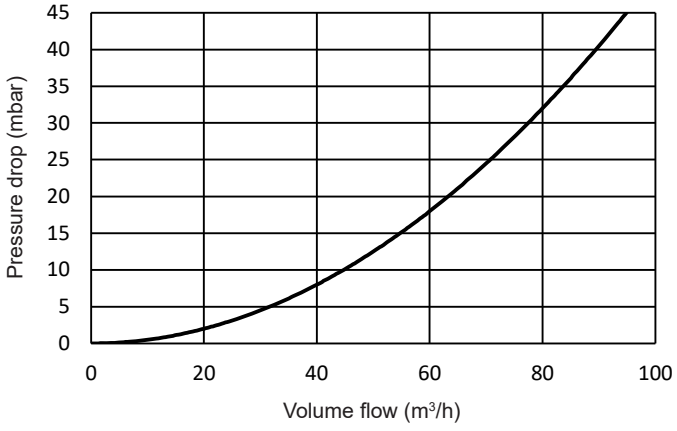
UltraGas® 2 (300-500)



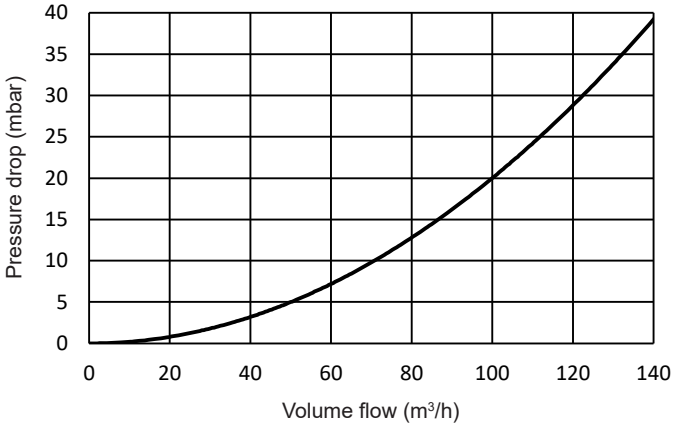
UltraGas® 2 (620,700)



UltraGas® 2 (800-1100)

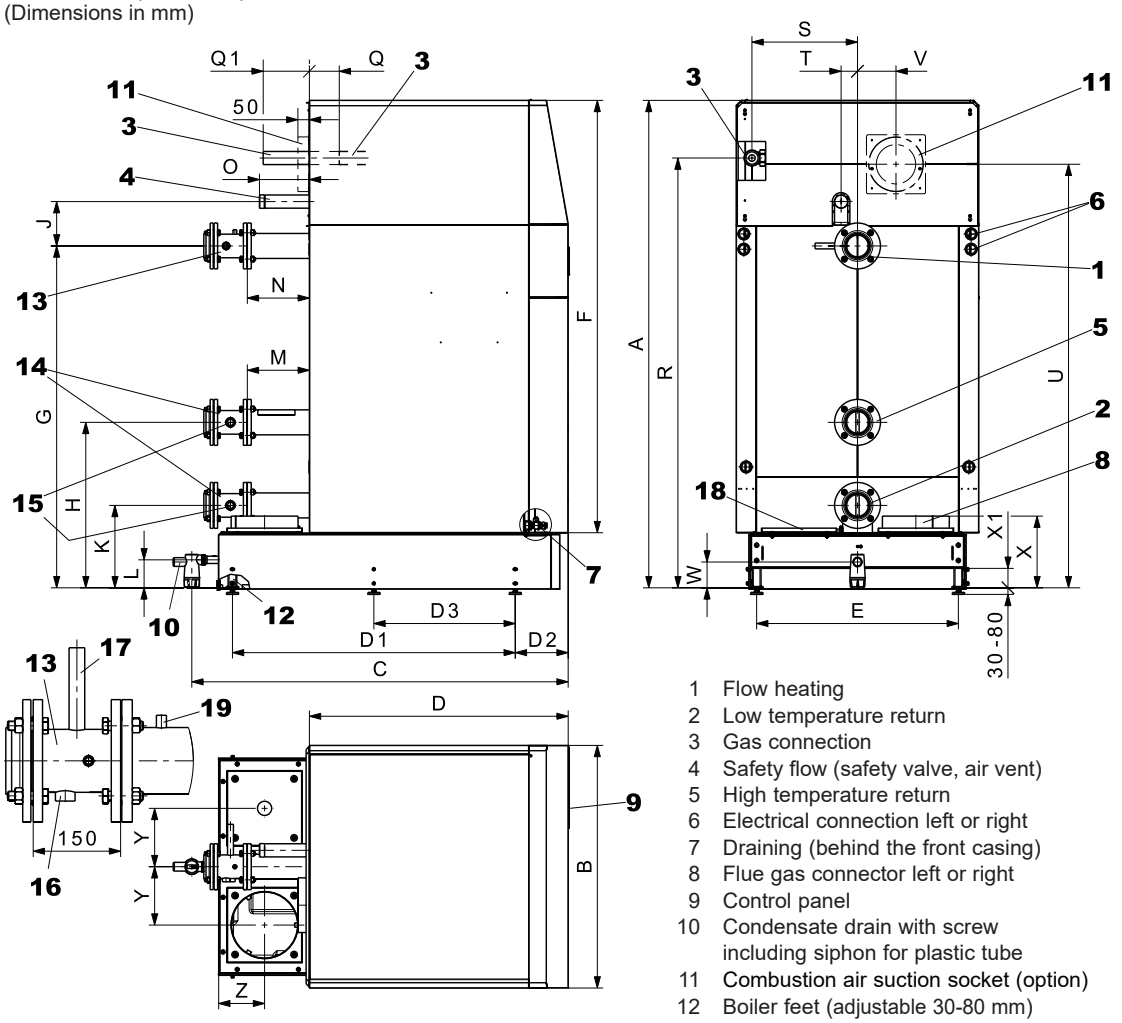


UltraGas® 2 (1300,1550)



UltraGas® 2 (125-1550)

(Dimensions in mm)



1 Flow heating
2 Low temperature return
3 Gas connection
4 Safety flow (safety valve, air vent)
5 High temperature return
6 Electrical connection left or right
7 Draining (behind the front casing)
8 Flue gas connector left or right
9 Control panel
10 Condensate drain with screw including siphon for plastic tube
11 Combustion air suction socket (option)
12 Boiler feet (adjustable 30-80 mm)
13 Safety fitting pipe flow (option)
14 Safety fitting pipe return (option)
15 Diaphragm pressure expansion tank connection Rp 1″
16 Pressure limiter Rp ¾″
17 Safety temperature control Rp ½″
18 Cleaning opening left or right
19 Flow connection sleeve Rp ¼″ for installation of the system flow sensor

Notice
Minimal space see separate page

Type	A	B	C	D	D1	D2	D3	E	F	G	H	J	K	L	M	N	O	Q	Q1	R
(125,150)	1923	720	1182	799	754	242	-	533	1681	1479	714	122	334	134	207	207	65	192	-	1725
(190,230)	1968	820	1256	895	854	242	-	633	1726	1517	717	145	337	134	204	204	69	226	-	1778
(300-500)	1923	930	1632	1165	1204	242	-	743	1683	1447	745	169	365	131	285	285	189	-	190	1735
(620,700)	2234	1110	1722	1184	1294	242	-	923	1982	1564	757	203	377	128	286	286	225	0	0	1966
(800-1100)	2255	1290	1822	1364	1480	242	-	1103	1987	1573	788	215	408	128	378	378	225	58	-	1959
(1300,1550)	2395	1560	2200	1640	1790	250	895	1363	2103	1600	822	238	442	138	420	420	218	22	-	2064
H (700)	2234	1110	1722	1184	1294	242	-	923	1982	1564	757	203	377	128	286	286	225	0	0	1966
H (1100)	2255	1290	1822	1364	1480	242	-	1103	1987	1573	788	215	408	128	378	378	225	58	-	1959
H (1550)	2395	1560	2200	1640	1790	250	895	1363	2103	1600	822	238	442	138	390	390	218	22	-	2064

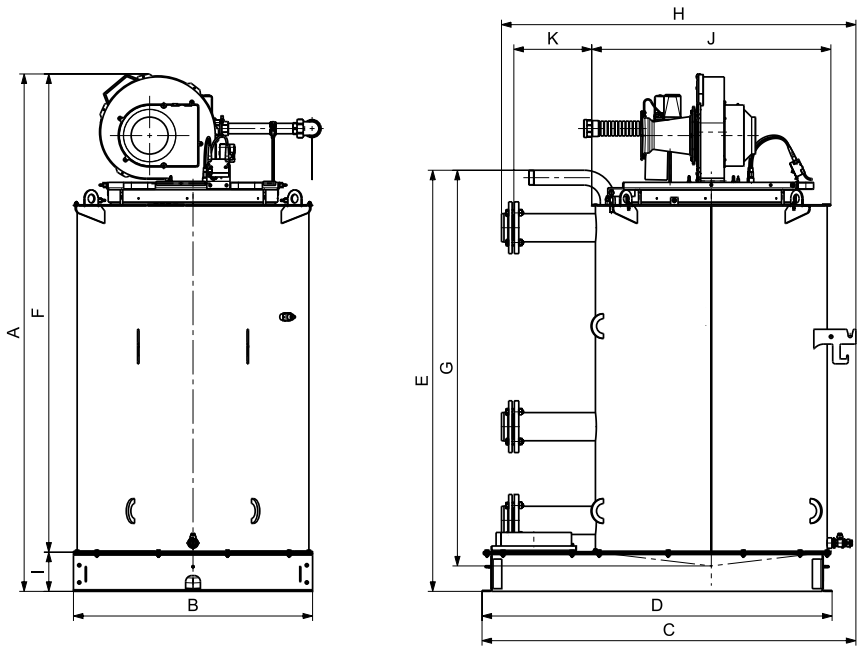
Type	S	T	U	V	W	X	X1	Y	Z	1,2,5 *	3	4	8	10	11
(125,150)	318	40	1725	101	124	319	99	157	139	DN 65 / PN 6 / 4-hole	Rp 1″	R 1″	Ø 155/159	DN 40	Ø 122/125
(190,230)	371	50	1778	101	124	319	99	195	139	DN 65 / PN 6 / 4-hole	Rp 1½″	R 1¼″	Ø 155/159	DN 40	Ø 197/200
(300-500)	389	40	1736	101	121	316	96	217	184	DN 100 / PN 6 / 4-hole	Rp 1½″	R 1½″	Ø 252/256	DN 40	Ø 197/200
(620,700)	483	75	1938	176	118	328	89	267	211	DN 100 / PN 6 / 4-hole	Rp 2″	R 2″	Ø 302/306	DN 40	Ø 247/250
(800-1100)	572	100	1959	176	118	374	89	357	219	DN 125 / PN 6 / 8-hole	Rp 2″	R 2″	Ø 302/306	DN 40	Ø 247/250
(1300,1550)	621	100	2064	190	128	398	89	455	244	DN 150 / PN 6 / 8-hole	Rp 2″	R 2″	Ø 402/406	DN 40	Ø 247/250
H (700)	483	75	1938	176	118	328	89	267	211	DN 100 / PN 16 / 8-hole	Rp 2″	R 2″	Ø 302/306	DN 40	Ø 247/250
H (1100)	572	100	1959	176	118	374	89	357	219	DN 125 / PN 16 / 8-hole	Rp 2″	R 2″	Ø 302/306	DN 40	Ø 247/250
H (1550)	621	100	2064	190	128	398	89	455	244	DN 150 / PN 16 / 8-hole	Rp 2″	R 2″	Ø 402/406	DN 40	Ø 247/250

* DN = nominal diameter, PN = nominal pressure

Installation dimensions

Boiler without cladding and thermal insulation
(Dimensions in mm)

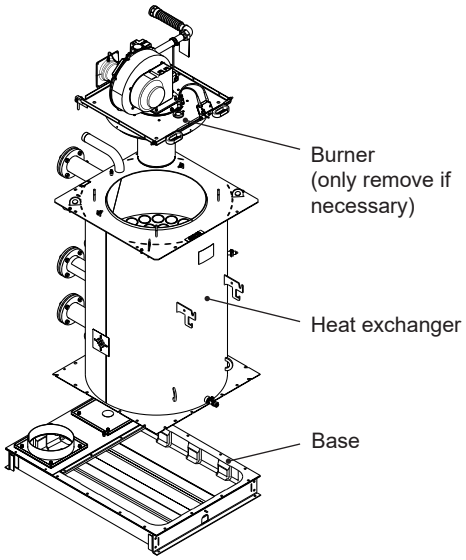
UltraGas® 2 (125-1550)



UltraGas® 2 type	A	B	C	D	E	Dimensions for multi-part installation F	G	H	I	J	K
(125,150)	1765	580	957	880	1519	1625	1421	946	140	580	242
(190,230)	1818	680	1054	980	1583	1678	1484	1037	140	680	236
(300-500)	1777	790	1400	1330	1544	1637	1451	1391	140	950	316
(620,700)	2099	970	1516	1420	1708	1940	1605	1437	159	970	316
(800-1100)	2120	1150	1712	1606	1729	1945	1625	1722	175	1150	408
(1300,1550)	2255	1410	2032	1916	1779	2056	1671	2042	199	1410	458

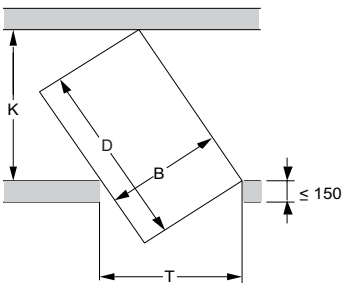
Weights for multi-part installation UltraGas® 2

UltraGas® 2 type	Base kg	Heat exchanger kg	Burner kg
(125)	34	207	29
(150)	34	220	29
(190)	42	272	39
(230)	42	293	39
(300)	60	455	60
(350)	60	486	60
(400)	60	520	60
(450)	60	554	60
(500)	60	576	60
(620)	86	729	80
(700)	86	777	80
(800)	104	1017	93
(1000)	104	1154	100
(1100)	104	1208	100
(1300)	155	1683	160
(1550)	155	1847	160



Required minimum width of door and corridor for boiler installation

The following values are the calculated minimum values (dimensions in mm)



$$K = \frac{B}{T} \times D$$

$$T = \frac{B}{K} \times D$$

B = boiler width
D = max. boiler length
T = door width
K = corridor width

Calculation example for the necessary corridor width

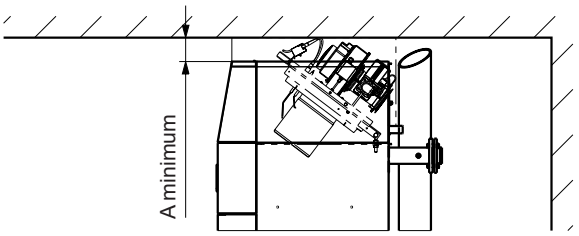
Door width T = 800

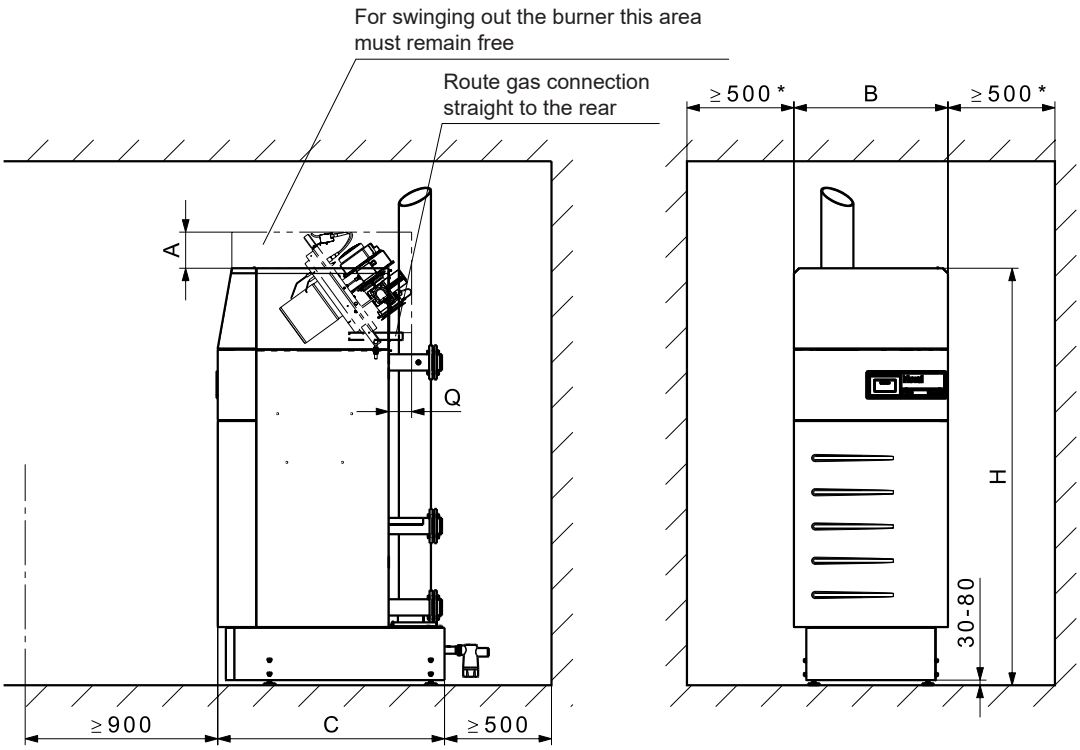
UltraGas® 2 (500) $K = \frac{790}{800} \times 1330 =$ corridor width ≥ 1314

Space requirements

(Dimensions in mm)

UltraGas® 2 (125-1550)





UltraGas® 2 type	A [1]	A minimum [2]	B	C	H [3]	H minimum [4]	Q
(125,150)	169	106	720	1060	1953	1934	125
(190,230)	155	71	820	1160	1998	1979	2
(300-500)	513	156	930	1510	1953	1937	60
(620,700)	121	121	1110	1600	2264	2255	155
(800-1100)	280	195	1290	1786	2285	2276	119
(1300,1550)	291	154	1560	2104	2425	2416	163
H (700)	121	121	1110	1600	2264	2255	155
H (1100)	280	195	1290	1786	2285	2276	119
H (1550)	291	154	1560	2104	2425	2416	163

[1] If room height is too small: Reduction of dimension possible (see A minimum).

[2] **Attention!** With A minimum the burner can not be swung out completely anymore! Cleaning with UltraGas® 2 (125-230) and UltraGas® 2 (620-1550) still possible

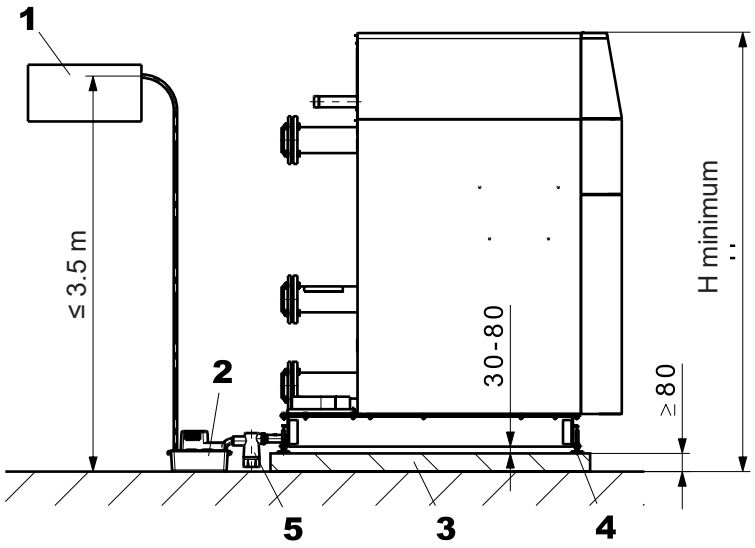
[3] Height value assumes adjustable feet are set to 30 mm

[4] The base plates cannot be installed without feet and the installer will have to fit a siphon with min. 70 mm barrier height. For details see next page.

- The heat generator can be placed with one side directly on the wall. However, to protect heat-sensitive walls against damage, a distance of at least 150 mm from the wall must be provided.
- The cleaning opening must be easily accessible. As a result, a minimum distance of 500 mm must be maintained on the cleaning opening side.

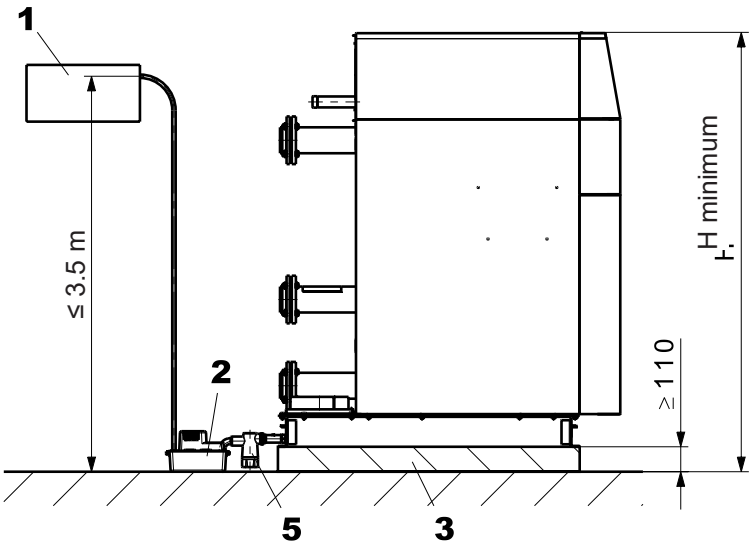
UltraGas® 2 (125-1550) with masonry base and adjustable feet

(Dimensions in mm)



UltraGas® 2 type	H minimum [1]
(125,150)	1934
(190,230)	1979
(300-500)	1937
(620,700)	2255
(800-1100)	2276
(1300,1550)	2416
H (700)	2255
H (1100)	2276
H (1550)	2416

UltraGas® 2 (125-1550) with masonry base without adjustable feet



UltraGas® 2 type	H minimum [1]
(125,150)	1934
(190,230)	1979
(300-500)	1937
(620,700)	2255
(800-1100)	2276
(1300,1550)	2416
H (700)	2255
H (1100)	2276
H (1550)	2416

1 Neutralisation unit (option)
2 Condensate pump (option)
3 Masonry base
4 Feet adjustable up to 30-80 mm
5 Siphon [2]

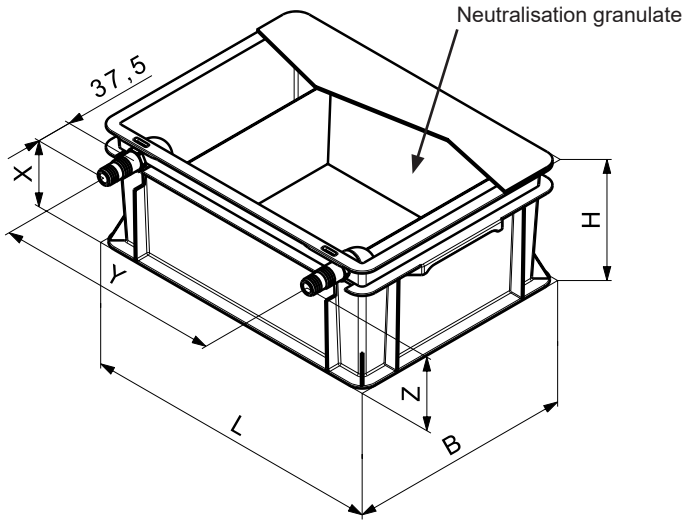
[1] Height value assumes adjustable feet are set to 30 mm
[2] **Caution!** The installer will have to fit a siphon with min. 70 mm barrier height.

Notice

- The steps of the climbing aid provided must be horizontal. Adapt the climbing aid if necessary.
- Base plates and feeds will not be re-funded!
- With H minimum, cleaning the siphon is more difficult.

Neutralisation unit HNB-0400 to HNB-1600

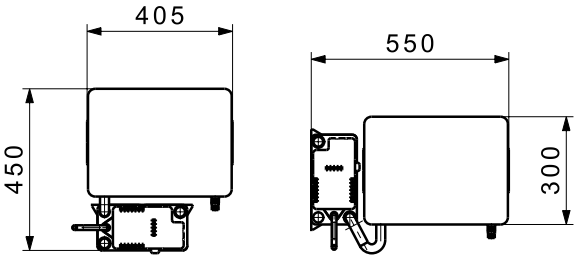
(Dimensions in mm)



	HNB-0400,-0800	HNB-1200,-1600
Dimensions (L x W x H)	405 x 300 x 180 mm	605 x 400 x 180 mm
Inlet height (Z)	128 mm	
Drain height (X)	118 mm	
Distance between the connections (Y)	approx. 350 mm	approx. 550 mm

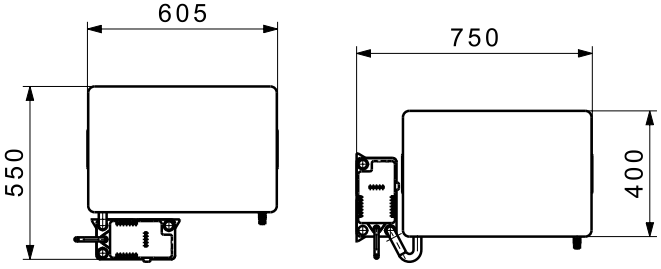
Neutralisation unit HNB-0400,-0800 and condensate pump

(Dimensions in mm)



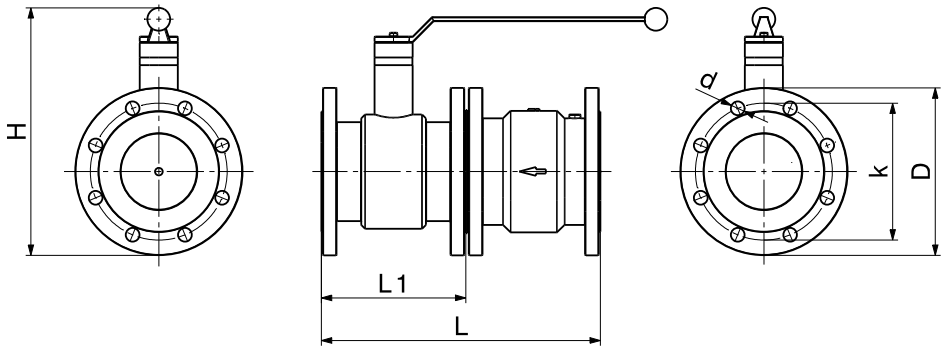
Neutralisation unit HNB-1200,-1600 and condensate pump

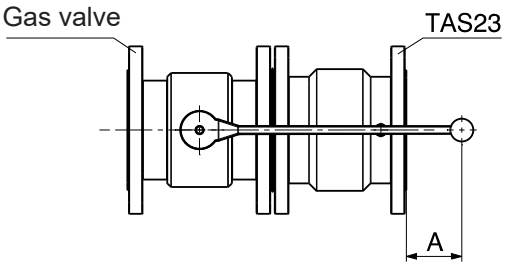
(Dimensions in mm)



Gas ball valves TAS (thermally activating shut-off device) with flange

(Dimensions in mm)





TAS type	L	L1	H	D	k	d/number of flange holes	A
DN 65	297	170	262.8	185	145	18/4	3
DN 80	307	180	298.3	200	160	18/8	128
DN 100	367	190	325.3	218	180	18/8	73

Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water can be both fully demineralised and also merely softened.

Heating water

- In the case of **full demineralisation of the filling and replacement water**, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.
- In the case of **softening the filling and replacement water**, the following conditions must be complied with:
  The quality of the heating water must be checked and documented periodically:
  - For an installed heat output above 100 kW up to and including 1000 kW, an annual check of the heating water is required.
  - For an installed heat output above 1000 kW, an check of the heating water is required twice a year.

  The following standard values for the heating water must be measured and adhered to:
  - Electrical conductivity of the heating water for operation with water containing salts: > 100 µS/cm to ≤ 1500 µS/cm
  - pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up) must be equipped with a system separation.
- In the case of bivalent heating systems, the values of the heat generator with the strictest requirement for water quality must be complied with.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Frost protection agent

see separate engineering sheet “Use of frost protection agent”.

Heating room

- Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. laundrettes, hairdressers).
- Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes. Pay attention to the Procal leaflet, corrosion through Halogen compounds.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. For direct combustion air to boiler (LAS system) mount the connection for direct combustion air inlet. It is very important to ensure that the combustion air is free from halogen compounds. These are present, for example, in spray cans, varnishes, glues, solvents and cleansing agents.

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-independent operation with separate combustion air pipe to the boiler:*
  0.8 cm² per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.
- In the UltraGas® 2, ventilation of the installation or boiler room must be guaranteed for operation independent from the room air.

- *Room air-dependent operation:*
  Minimum free cross-section of the opening into the open: 150 cm² or twice 75 cm² and additionally 2 cm² necessary for each kW of output over 50 kW for vent into the open.

Gas connection

Commissioning

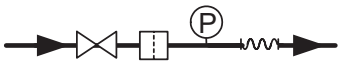
- Initial commissioning must be performed by a specialist technician from Hoval or a gas specialist technician.
- Burner setting values according to the installation instructions.

Manual gas shut-off valve and gas filter

Immediately in front of the boiler a manual gas shut-off device (valve) must be installed according to relevant regulations.

In the UltraGas® 2 (400-1550) type, an external gas filter must be installed in the gas supply line.
Make sure that the gas line from the external gas filter to the gas connection of the boiler is cleaned.
For the UltraGas® (125-350) types, it is necessary to comply with the local regulations concerning the need for a gas filter.

Construction of a recommended gas connection



Legend:


manual gas shut-off valve


gas hose/compensator


gas filter

pressure gauge with test burner and push-button valve

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.

Gas pressure natural gas

Necessary gas flow pressure at the boiler inlet:
UltraGas® 2 (125-700) min. 17.4 mbar, max. 80 mbar
UltraGas® 2 (800-1550) min. 17.4 mbar, max. 300 mbar

Gas pressure propane

- A gas pressure controller to reduce the boiler inlet pressure must be installed on-site for propane.
- Necessary gas flow pressure at the boiler inlet:
  UltraGas® 2 (125-1550)
  min. 37 mbar, max. 50 mbar

Gas pressure regulator

- The installation of a gas pressure regulator is only necessary if the gas flow pressure in the gas network exceeds the maximum permissible gas flow pressure of the UltraGas® 2 or if there are considerable fluctuations in the gas flow pressure.
- Pressure fluctuations in the gas network must be prevented by suitable measures (e.g. gas storage tanks or pressure regulators). The local conditions must be checked in each individual case.

Closed heating system
The boiler is only approved for use in closed heating systems.

Minimum circulation water quantity
No minimum water circulation volume is required.

Calorifier connection
If a calorifier is connected, all heating groups must be provided with a mixer.

Installation instructions
Please observe the installation instructions supplied with every boiler.

Space requirements
See “Dimensions” for information

Pump follow-on
For operating temperatures of the boiler above 85 °C, after each burner switch-off, the circulating pump must be in operation for at least 2 minutes (the pump after-run is included in the boiler controller with TopTronic© E control).

Heating boiler in the attic
If the gas boiler is positioned on the top floor, the installation of a low water protection, which automatically turns the gas burner off in case of water shortage, is recommended.

Condensate drain
- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas line can be discharged via the boiler. A condensate trap is no longer needed in the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic: PVC, PE, PP, ABS and UP
- A siphon must be installed at the condensate outlet on the gas boiler (included in the boiler scope of delivery).

Diaphragm pressure expansion tank
- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The diaphragm pressure expansion tank has to be installed in principle at the heating return, or at the safety flow.
- Starting from 70 °C an intermediate tank is necessary.

Safety valve
- At the safety flow a safety valve and an automatic exhauster must be installed.

Noise damping
The following measures are possible for sound insulation:
- Make boiler room walls, ceiling and floor as solid as possible.
- If there are living areas above or below the boiler room, connect pipes flexibly using expansion joints.
- Connect circulating pumps to the piping network using expansion joints

Noise level
- The acoustic **power** level value is dependent on the local and spacial circumstances.
- The acoustic **pressure** level is dependent on the installation conditions and can for instance be 5 to 10 dB(A) lower than the acoustic **power** level at a distance of 1 m.

Recommendation:
If the combustion air intake opening is located on the house facade near a noise-sensitive place (window of bedroom, garden terrace, etc.), we recommend using a silencer in the combustion air duct.

Allocation of gas filters for UltraGas® 2

UltraGas® 2 type	Gas throughput m^3/h	Gas filter type	Dimension	Pressure drop gas filter (with clean filter) mbar
(125)	11.9	70602/6B	Rp 1″	0.2
(150)	14.2	70602/6B	Rp 1″	0.3
(190)	18.0	70603/6B	Rp 1½″	0.2
(230)	22.4	70603/6B	Rp 1½″	0.2
(300)	29.2	70603/6B	Rp 1½″	0.3
(350)	33.9	70603/6B	Rp 1½″	0.4
(400)	38.6	70603/6B	Rp 1½″	0.6
(450)	44.0	70603/6B	Rp 1½″	0.7
(500)	46.4	70631/6B	Rp 2″	0.5
(620)	59.3	70631/6B	Rp 2″	0.7
(700)	67.0	70631/6B	Rp 2″	0.8
(800)	76.1	70631/6B	Rp 2″	0.9
(1000)	94.6	70631/6B	Rp 2″	1.4
(1100)	106.0	70631/6B	Rp 2″	1.6
(1300)	125.5	70610F/6B	DN 65	1.5
(1550)	147.3	70610F/6B	DN 65	2.1

Flue gas system

- Gas boilers must be connected to a flue gas system (chimney or flue gas lines).
- Flue gas lines must be gas tight and leak tight against condensate and over pressure.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. Temperature class T120.
- A flue gas temperature limiter is built into the boiler.

Standard values for flue gas line dimensions

Standard values for the flue gas line dimensions can be found in the following table.

Table with bases for calculation

- Calculation based on max. 1000 m above sea level.
- Installation room with supply air opening (room air dependent operation)
- An individual calculation must be carried out for room air-independent operation (accessories as option) or a combustion air supply via a duct.
- Connecting line was calculated with max. 5 m.

- The first 2 m of the flue gas line must be configured with the same dimension as the flue gas connector, after which the size of the flue gas system can be selected according to the table below.

Table “Standard values for flue gas line dimensions”

Boiler		Flue gas line (smooth walled)	Number of elbows 90° (flue gas + combustion air)			
UltraGas® 2	Internal Ø flue gas outlet	Designation	Total pipe length in m (flue gas + combustion air)			
type	mm	DN	1	2	3	4
(125)	155	130	24	23	22	21
(150)	155		18	17	16	15
(125)	155	150	47	47	46	45
(150)	155		45	45	45	44
(190)	155		43	42	40	38
(230)	155		20	20	19	18
(230)	155	175	44	43	43	42
(230)	155	200	45	44	43	43
(300)	252		45	44	43	43
(350)	252		44	43	43	42
(400)	252	250	44	43	42	41
(450)	252		50	50	50	50
(500)	252		50	50	50	50
(620)	302		43	42	41	40
(700)	302		42	41	40	39
(800)	302	300	45	44	43	43
(1000)	302		44	43	43	42
(1100)	302	350	47	46	45	44
(1300)	402		46	45	44	43
(1550)	402		45	44	43	43
H (700)	302	250	42	41	40	39
H (1100)	302	350	47	46	45	44
H (1550)	402		45	44	43	43

Notice: The values in the table “Standard values for flue gas line dimensions” are standard values for reference.
An exact calculation for the flue gas duct must be made on-site.
For chimney systems above 25 m effective height, negative pressure in the chimney is to be expected in some operating conditions.
Therefore, we recommend an individual design of the chimney system and checking the individual pressure conditions.

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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Your Hoval partner

Hoval

CATALOGUE

Hoval UltraGas® 2 D

Floor-standing gas condensing boiler UltraGas® 2 D (250-3100)

Hoval | Responsibility for energy and environment

Table of contents

Hoval UltraGas® 2 D (250-3100)

Gas boiler
- Double boiler made of steel with condensing technology consisting of 2 individual boilers of 125, 150, 190, 230, 300, 350, 400, 450, 500, 620, 700, 800, 1000, 1100, 1300 or 1550 kW
- For the combustion of:
  - natural gas E
  - natural gas E with a hydrogen content (H_2) of up to 20 % by vol.
  - propane according to DIN 51622
  - biomethane according to EN 16723
- Combustion chamber made of stainless steel
- Maximum flue gas condensation by secondary heating surfaces made of **TurboFer®** hybrid stainless steel composite pipes; heating gas side: stainless steel/aluminium water side: stainless steel
- Thermal insulation with mineral wool mat
- Water pressure sensor:
  - Fulfils the function of a minimum and maximum pressure limiter
  - Replacement for the low water level protection
- Flue gas temperature sensor with flue gas limiter function
- Pre-mix burner
  - with fan and venturi
  - modulating operation
  - automatic ignition
  - ionisation guard
  - gas pressure monitor
- Gas boiler fully clad with steel plates, red powder-coated
- Flue gas overpressure set consisting of motorised air intake suction flap (connection for direct combustion air supply without accessories possible) and flue gas collector.
- Heating connections backwards incl. counter flange, screws and seals for:
  - heating flow
  - high temperature return
  - low temperature return
- *UltraGas® 2 D (600-3100):* with integrated gas pipe compensator
- Each individual boiler has a Hoval TopTronic® E control built in
- Possibility of connecting an external gas solenoid valve with error output

Model range

UltraGas® 2 type	Nominal heat output at 50/30 °C kW
D (250)	25-252
D (300)	35-302
D (380)	38-382
D (460)	51-466
D (600)	58-598
D (700)	70-704
D (800)	69-798
D (900)	77-902
D (1000)	77-982
D (1240)	136-1244
D (1400)	146-1406
D (1600)	166-1608
D (2000)	205-1998
D (2200)	229-2224
D (2600)	269-2640
D (3100)	324-3100
DH (1400)	146-1406
DH (2200)	229-2224
DH (3100)	324-3100

TopTronic® E controller

Control panel
- Colour touchscreen 4.3 inch
- Heat generator blocking switch for interrupting operation
- Fault signalling lamp

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating statuses
- Configurable start screen
- Operating mode selection
- Configurable day and week programmes
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with HovalConnect option)
- Adaptation of the heating strategy based on the weather forecast (with HovalConnect option)

TopTronic® E basic module heat generator TTE-WEZ
- Control functions integrated for
  - 1 heating circuit with mixer
  - 1 heating circuit without mixer
  - 1 hot water charging circuit
  - bivalent and cascade management
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- RAST 5 basic plug set

Options for TopTronic® E controller
- Can be expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be networked with a total of up to 16 controller modules:
  - heating circuit/hot water module
  - solar module
  - buffer module
  - measuring module

Number of modules that can be additionally installed in the heat generator (per single boiler):

UltraGas® 2 (125-230)
- 1 module expansion and 1 controller module **or**
- 2 controller modules

UltraGas® 2 (300-500):
- 3 controller modules/module expansions

UltraGas® 2 (620-1550):
- 4 controller modules/module expansions

Notice
Max. 1 module expansion can be connected to the basic module heat generator TTE-WEZ!

The supplementary plug set must be ordered in order to use expanded controller functions.

Further information about the TopTronic® E
see “Controls”

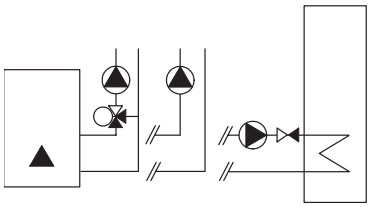
Optional
- Free-standing calorifier see “Calorifiers”
- Additional control for more heating circuits
- Hydraulic connection

Delivery
- 2 gas boilers, cladding with thermal insulation, 2 TopTronic® E controls, flue gas collector and combustion air connection delivered separately packed

On site
- Mounting of cladding, thermal insulations and boiler controller
- Mounting of boiler feet
- Mounting of the flue gas connection line and flue gas overpressure set (two motorised combustion air dampers and a flue gas collector)
- Bus cable for connecting the two boiler controllers of the double boiler on site (not included in scope of delivery)

Notice
For the version with common flue gas line with overpressure, the flue gas excess pressure set must be imperatively mounted.

Floor-standing gas condensing boiler



Boiler permissions

CE product ID No.: UltraGas® 2 D (250-3100)	CE-0085DL0175
SVWG No.	20-010-4

Hoval UltraGas® 2 D (250-3100)

Double boiler consisting of two individual boilers (UltraGas® 2 125-1550 kW), each with a built-in Hoval TopTronic® E control

Control functions integrated for
- 1 heating circuit with mixer
- 1 heating circuit without mixer
- 1 hot water charging circuit
- bivalent and cascade management

- Can be optionally expanded by max. 1 module expansion:
  - module expansion heating circuit or
  - module expansion heat balancing or
  - module expansion Universal
- Can be optionally networked with a total of up to 16 controller modules (incl. solar module)

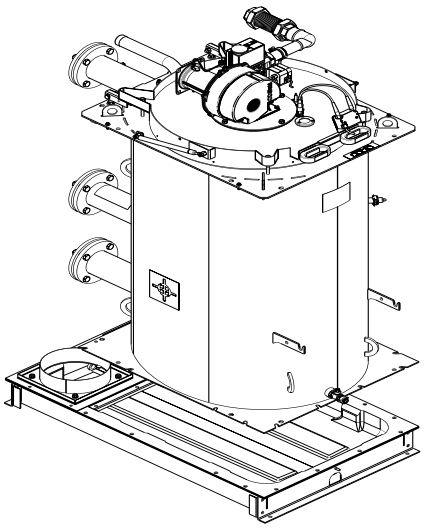
Gas boiler made of steel with TopTronic® E control, combustion chamber made of stainless steel.
Secondary heating surfaces made of **TurboFer®** stainless steel composite pipes. Pre-mix burner with fan.

Delivery
2 gas boilers, cladding and thermal insulation
2 TopTronic® E controls, flue gas collector and combustion air connection supplied separately packaged

UltraGas® 2 type	Nominal heat output at 50/30 °C kW	Operating pressure bar	Part No.
D (250)	25-252	6	7018 907
D (300)	35-302	6	7018 908
D (380)	38-382	6	7018 933
D (460)	51-466	6	7018 934
D (600)	58-598	6	7018 812
D (700)	70-704	6	7018 813
D (800)	69-798	6	7018 814
D (900)	77-902	6	7019 143
D (1000)	77-982	6	7018 815
D (1240)	136-1244	6	7018 880
D (1400)	146-1406	6	7018 881
D (1600)	166-1608	6	7018 857
D (2000)	205-1998	6	7018 858
D (2200)	229-2224	6	7018 859
D (2600)	269-2640	6	7018 903
D (3100)	324-3100	6	7018 904

[1] kW = modulation range

Floor-standing gas condensing boiler (multi-part installation)



Hoval UltraGas® 2 D (250D-3100D) (multi-part installation)

Double boiler consisting of two individual boilers (UltraGas® 125-1550 kW), each with a built-in Hoval TopTronic® E control for **multi-part installation**. Assembled on-site by the installer.

UltraGas® 2 type	Output at 50/30 °C kW	Operating pressure bar	Part No.
D (250)	25-252	6	7018 905
D (300)	35-302	6	7018 906
D (380)	38-382	6	7018 931
D (460)	51-466	6	7018 932
D (600)	58-598	6	7018 850
D (700)	70-704	6	7018 851
D (800)	69-798	6	7018 852
D (900)	77-902	6	7019 142
D (1000)	77-982	6	7018 853
D (1240)	136-1244	6	7018 867
D (1400)	146-1406	6	7018 868
D (1600)	166-1608	6	7018 860
D (2000)	205-1998	6	7018 861
D (2200)	229-2224	6	7018 862
D (2600)	269-2640	6	7018 901
D (3100)	324-3100	6	7018 902

[1] kW = modulation range

Floor-standing gas condensing boiler (high-pressure design)

Delivery time approx. 8 weeks

Hoval UltraGas® 2 DH (1400-3100) (high-pressure design)

Floor-standing gas condensing boiler in **high-pressure design** (operating pressure 10 bar)

UltraGas® 2 type	Output at 50/30 °C kW [1)]	Operating pressure bar	Part No.
DH (1400)	146-1406	10	7019 105
DH (2200)	229-2224	10	7018 831
DH (3100)	324-3100	10	7018 832

[1] kW = modulation range

Labels for conversion to propane
for UltraGas® 2 D (250-700) — 6064 556

Labels for conversion to propane
for UltraGas® 2 D (800-1600) — 6064 557

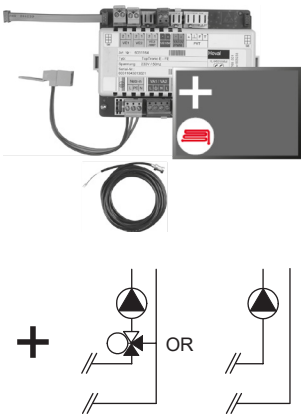
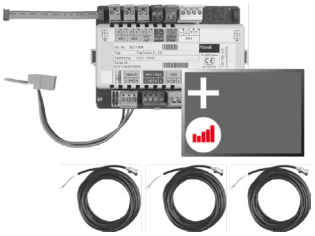
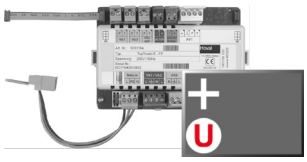
Labels for conversion to propane
for UltraGas® 2 D (2000-3100) — 6064 577

System flow sensor — 6053 398
for UltraGas® 2 for installation in the flow connector sleeve Rp ¼″, for regulating the flow temperature. Consisting of temperature sensor and connection cable

Installation of the system flow sensor is recommended for optimal control of the flow temperature.

TopTronic® E module expansions

for TopTronic® E basic module heat generator

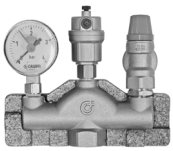
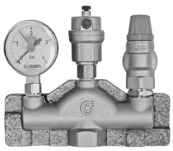
		Part No.
	**TopTronic® E module expansion heating circuit TTE-FE HK** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer Consisting of: - Fitting accessories - 1 contact sensor ALF/2P/4/T, L = 4.0 m - Basic plug set FE module **Notice** The supplementary plug set may have to be ordered to implement functions differing from the standard!	6034 576
	**TopTronic® E module expansion heating circuit incl. energy balancing TTE-FE HK-EBZ** Expansion to the inputs and outputs of the basic module heat generator or the heating circuit/domestic hot water module for implementing the following functions: - 1 heating/cooling circuit without mixer or - 1 heating/cooling circuit with mixer incl. energy balancing in each case Consisting of: - Fitting accessories - 3 contact sensors ALF/2P/4/T, L = 4.0 m - Plug set FE module **Notice** Suitable flow rate sensors (pulse sensors) must be provided on site.	6037 062
	**TopTronic® E module expansion Universal TTE-FE UNI** Expansion to the inputs and outputs of a controller module (basic module heat generator, heating circuit/domestic hot water module, solar module, buffer module) for implementing various functions Consisting of: - Fitting accessories - Plug set FE module **Further information** see “Controls” – “Hoval TopTronic® E module expansions” chapter **Notice** Refer to the Hoval System Technology to find which functions and hydraulic arrangements can be implemented.	6034 575

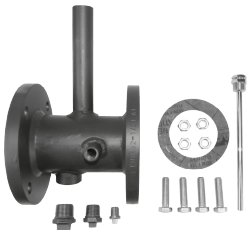
Accessories for TopTronic® E

		Part No.
	**TopTronic® E controller modules**	
	TTE-HK/WW TopTronic® E heating circuit/ hot water module	6034 571
	TTE-SOL TopTronic® E solar module	6037 058
	TTE-PS TopTronic® E buffer module	6037 057
	TTE-MWA TopTronic® E measuring module	6034 574
 	**Supplementary plug set**	
	for basic module heat generator TTE-WEZ	6034 499
	for controller modules and module expansion TTE-FE HK	6034 503
	**TopTronic® E room control modules**	
	TTE-RBM TopTronic® E room control modules	
	easy white	6037 071
	comfort white	6037 069
	comfort black	6037 070
	**Enhanced language package TopTronic® E** one SD card required per control module Consisting of the following languages: HU, CS, SL, RO, PL, TR, ES, HR, SR, JA, DA, NL	6039 253
	**HovalConnect**	
	HovalConnect LAN	6049 496
	HovalConnect WLAN	6049 498
	HovalConnect Modbus	6049 501
	HovalConnect KNX	6049 593
	TopTronic® E interface modules	
	GLT module 0-10 V	6034 578
	**TopTronic® E sensors**	
	AF/2P/K Outdoor sensor H x W x D = 80 x 50 x 28 mm	2055 889
	TF/2P/5/6T Immersion sensor, L = 5.0 m	2055 888
	ALF/2P/4/T Contact sensor, L = 4.0 m	2056 775
	TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m	2056 776
	**System module SB-SM-BZ1** for passing on a volt-free operating and fault message. (for 1-stage/modulating H-Gens)	6048 055
	**Bivalent switch**	
	for various release or switching functions	
	Bivalent switch 1-piece	2056 858
	Bivalent switch 2-piece	2061 826
	**System casing**	
	System casing 182 mm	6038 551
	System casing 254 mm	6038 552
	**TopTronic® E wall casing**	
	WG-190 Wall casing small	6052 983
	WG-360 Wall casing medium	6052 984
	WG-360 BM Wall casing medium with control module cut-out	6052 985
	WG-510 Wall casing large	6052 986
	WG-510 BM Wall casing large with control module cut-out	6052 987

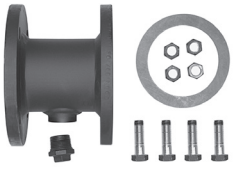
Further information
see “Controls”

Accessories

	Part No.
 **Flow temperature monitor** for panel heating (1 controller per heating circuit) 15 ... 95 °C, setting (visible externally) under the casing cover	
Clamp-on flow temperature monitor RAK-TW1000S with retaining strap, without cable and plug	242 902
Clamp-on flow temperature monitor set RAK-TW1000S with retaining strap, supplied with cable (4 m) and plug	6033 745
Immersion thermostat RAK-TW1000S Thermostat with immersion sleeve ½″ Depth of immersion 150 mm, nickel-plated brass	6010 082
 **Safety set DN 25** complete with safety valve DN 25 (3 bar), up to 200 kW Pressure gauge and automatic aspirator with barrier Connection: 1″ internal thread	6018 709
 **Safety set DN 32** complete with safety valve DN 32 (3 bar), up to 350 kW Pressure gauge and automatic aspirator with barrier Connection 1¼″ internal thread	6018 710



Fitting pipe flow



Fitting pipe return

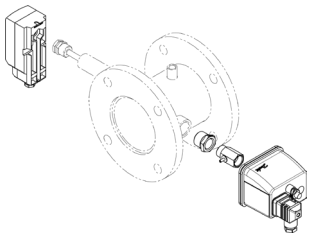
Safety fitting pipe for flow and return
Suitable for max. 6 bar, with screws and nuts
- for installation on the flow or high and low-temperature return of the Hoval UltraGas® 2 boiler
- for installation of an additional safety temperature limiter, a maximum pressure limiter
- for connection of a diaphragm pressure expansion tank on the return

Dimension	Suitable to UltraGas® 2 D	Connection	Part No.
DN 65 [1]	(250-460)	flow	6053 408
DN 65 [1]	(250-460)	return	6023 108
DN 100 [1]	(600-1400)	flow	6053 409
DN 100 [1]	(600-1400)	return	6023 110
DN 125 [1]	(1600-2200)	flow	6055 078
DN 125 [1]	(1600-2200)	return	6023 112
DN 150 [1]	(2600,3100)	flow	6055 079
DN 150 [1]	(2600,3100)	return	6051 680

[1] 2 pieces are necessary

Further information see “Dimensions” Hoval UltraGas® 2 (125-1550)

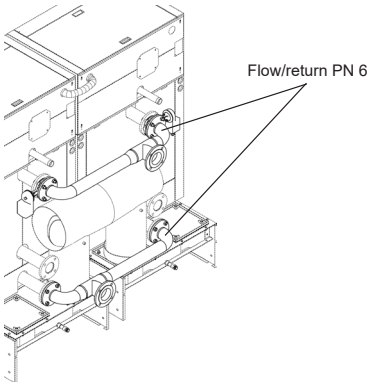
Accessories



Safety armature set
Compatible with fitting pipe for meeting safety requirements of EN 12828: > 300 kW or SWKI HE301-01: 70-1000 kW related to single boiler
Consisting of:
- adjustable maximum pressure limiter incl. ball valve
- safety temperature limiter (RAK-ST.131)

2 pieces per double boiler necessary

Part No.: 6051 903



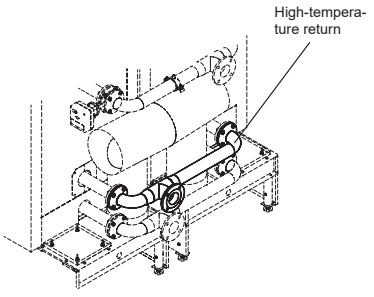
Hydraulic connection set for double boiler flow/return PN 6
Pipe connection set for double boiler incl. hydraulic butterfly valves
For 230 V, pre-wired
Operating method: continuously controlling (2-10 V)

Type	Part No.
zu UltraGas® 2 D (250-460)	6054 637
zu UltraGas® 2 D (600-1000)	6065 582
zu UltraGas® 2 D (1240,1400)	6065 603
zu UltraGas® 2 D (1600-2200)	6065 604
zu UltraGas® 2 D (2600,3100)	6065 605

Hydraulic butterfly valve
for direct installation on the flow and/or return of the boiler pre-wired
Operating method: continuously controlling (2-10 V)
As an option if no flow/return set is ordered.

Type		Part No.
UltraGas® 2 (125-230)	DN 65 / 24 V	6050 605
UltraGas® 2 (300-700)	DN 100 / 24 V	6065 606
UltraGas® 2 (800-1100)	DN 125 / 230 V	6065 607
UltraGas® 2 (1300,1550)	DN 150 / 230 V	6065 608

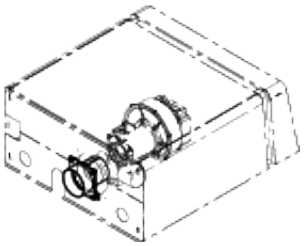
2 pieces needed per double boiler



Hydraulic connection double boiler high-temperature return PN 6 for UltraGas® 2 D
for UltraGas® 2 D
(e.g. for return calorifier charging)

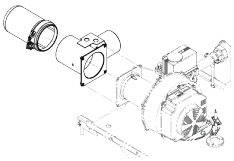
Type	Part No.
UltraGas® 2 D (250-460)	6054 636
UltraGas® 2 D (600-1000)	6054 396
UltraGas® 2 D (1240,1400)	6004 924
UltraGas® 2 D (1600-2200)	6009 534
UltraGas® 2 D (2600,3100)	6051 915

Accessories

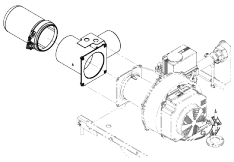


Connection for direct combustion air supply
Only in combination with a motorised combustion air damper (ordered separately).
Can also be used for creating a boiler cascade with a common flue gas line.

Type	Part No.
UltraGas® 2 (125,150)	6052 847
UltraGas® 2 (190,230)	6052 848
UltraGas® 2 (300-500)	6053 097
UltraGas® 2 (620,700)	6053 780
UltraGas® 2 (800-1100)	6053 782
UltraGas® 2 (1300,1550)	6052 849



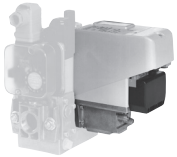
Connection protection filter — 6052 151
for UltraGas® 2 (125-500)
for installation on
the motorised combustion air damper
for filtering the combustion air
in the building phase
Pore width of the filter < 50 µm



Connection protection filter — 6052 152
for UltraGas® 2 (620-1550)
for installation on
the motorised combustion air damper
for filtering the combustion air
in the building phase
Pore width of the filter < 50 µm

Gas valve
with thermally releasing cut-off device.

Type	Connection inches	Part No.
DN 25	R 1″	2069 324
DN 32	R 1¼″	2069 325
DN 40	R 1½″	2069 326
DN 50	R 2″	2069 327



Valve testing system
for UltraGas® 2 (125-1550),
UltraGas® 2 (250D-3100D)
Automatic, compact testing system for testing the leakage of the gas valve before each burner start with ready-to-connect wiring.
Suitable for all gas qualities for which the UltraGas® 2 is permitted.

Type	Part No.
UltraGas® 2 D (250D-700D)	6039 964
UltraGas® 2 D (800D-1400D)	6039 965
UltraGas® 2 D (1600D-3100D)	6054 484

For an UltraGas® 2 double boiler, two valve test systems must be ordered.

Accessories

For a kit, the gas ball valve, fitting protection and mounting set must each be ordered separately in the same dimension.

Gas valve kit
Set with gas valve and thermally releasing shut-off device
Thermal closing at approx. 95 °C
Tripping time < 60 s
Maximum working pressure 5 bar
Ambient temperature < 60 °C
Combustible gases according to G260

Gas ball valve with flange

Type	Part No.
DN 65	2007 988
DN 80	2007 989
DN 100	2007 990

Fitting protection TAS

Type	Part No.
TAS 23-65	2069 328
TAS 23-80	2069 329
TAS 23-100	2069 330

Mounting set for assembly
Gas ball valve with fitting protection

Type	Part No.
MS-TAS 23-65	6041 745
MS-TAS 23-80	6041 746
MS-TAS 23-100	6041 747

Gas filter
with measurement nozzle before and behind the filter inset (diameter: 9 mm)
Pore width of the filter inset < 50 µm
Max. pressure difference 10 mbar
Inlet pressure:
UltraGas® 2 (125-700): max. 80 mbar
UltraGas® 2 (800-1550): max 300 mbar

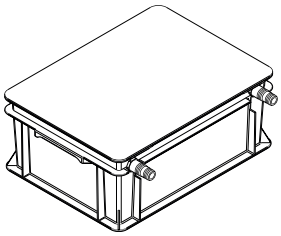
Type	Connection	Part No.
70602/6B	Rp 1″	2007 996
70604/6B	Rp 1¼″	2054 495
70603/6B	Rp 1½″	2007 997
70631/6B	Rp 2″	2007 998
70610F/6B	DN 65	2007 999

Gas pipe compensator 1″ — 6034 556
for UltraGas® 2 (125,150),
UltraGas® 2 D (250,300)
for compensating for connection tolerances in the gas pipe

Gas pipe compensator 1½″ — 6034 557
for UltraGas® 2 (190,230),
UltraGas® 2 D (380,460)
for compensating for connection tolerances in the gas pipe

2 pieces per double boiler necessary

Condensate drainage to UltraGas® 2 D



Neutralisation box
Condensate drain into a lower drainage duct
Connection hose: 2 m
Service life up to 1 year, depending on the boiler operating mode
Positioning behind the boiler or laterally
One neutralisation box per boiler

Type		Neutralisation granulate	Part No.
UltraGas® 2 (125-400)	HNB-0400	3 kg	6054 792
UltraGas® 2 (450-800)	HNB-0800	6 kg	6054 793
UltraGas® 2 (1000,1100)	HNB-1200	9 kg	6054 794
UltraGas® 2 (1300,1550)	HNB-1600	12 kg	6054 795

Condensate pump — 6063 855
For transporting condensate
into a higher drainage duct
Including connection lines
Completely wired, cable and plug
For connection to the boiler controller
Delivery head: max. 5 m
Can be combined with neutralisation box

Condensate pump — 6063 856
for UltraGas® 2 (1000-1550)
For transporting the condensate
into a higher drainage duct
Including connection line
Completely wired, cable and plug
For connection to the boiler controller
Delivery head: 4 m
Can be combined with neutralisation box

2 pieces needed per double boiler

Neutralisation granulate — 2028 906
for neutralisation box
Refill set volume 3 kg
Life time of one filling:
approx. 1 year, depending on amount of condensate

Services

Services and associated scope of services
see separate catalogue “Hoval Services”

Commissioning by Hoval customer service is a prerequisite for warranty/guarantee activation.

Part No.

Hoval UltraGas® 2 D (250-460)

Type			D (250)	D (300)	D (380)	D (460)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	21-228	33-278	35-354	47-436
• Nominal heat output at 50/30 °C, natural gas [1]		kW	25-252	35-302	38-382	51-466
• Nominal heat output at 80/60 °C, propane [2]		kW	32-226	43-276	52-351	66-434
• Nominal heat output at 50/30 °C, propane [2]		kW	35-252	48-302	59-382	73-466
• Nominal heat input with natural gas [3]		kW	23-232	32-284	35-358	47-446
• Nominal heat input with propane [2]		kW	33-232	44-284	54-358	68-446
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	2 x 207	2 x 195	2 x 276	2 x 265
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	2 x 390	2 x 400	2 x 485	2 x 505
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.6/88.9	97.6/88.1	98.5/88.7	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	108.7/98.1	108.7/98.1	109.0/98.2	108.4/97.8
• Room heating energy efficiency						
- without control	ηs	%	93	93	93	93
- with control	ηs	%	95	95	95	95
- with control and room sensor	ηs	%	97	97	97	97
- annual energy consumption	Q_{HE}	GJ	386	479	598	751
• NOx class (EN 15502)			-	-	-	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	25	28	33	37
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	31	21	25	13
• O_2 content in flue gas min./max. output		%	5.9/5.6	5.5/6.0	5.9/6.0	6.0/5.9
• Heat loss in standby mode (EN 15502) (50°C)		Watt	520	520	640	640
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	80
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	2.4-23.9	3.3-29.3	3.6-36.9	4.8-46.0
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	2.8-28.5	3.9-34.9	4.3-44.0	5.8-54.9
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	1.4-9.5	1.8-11.6	2.2-14.7	2.8-18.3
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	41/280	43/450	38/302	49/456
• Standby		Watt	7	8	8	8
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	76	81	67	70
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	-	-	-	-
• Condensate quantity (natural gas) at 50/30 °C		l/h	22	24	30	40
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	376	452	566	688
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	37	51	55	63
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	64	65	68	69
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	43	45	46	47
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	28	29	29
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	308	360	464	560
- Maximum supply pressure for combustion air supply and flue gas line		Pa	60	60	60	60
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 D (600-900)

Type			D (600)	D (700)	D (800)	D (900)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	54-548	67-630	62-724	73-830
• Nominal heat output at 50/30 °C, natural gas [1]		kW	58-598	70-704	69-798	77-902
• Nominal heat output at 80/60 °C, propane [2]		kW	83-548	94-622	109-722	124-816
• Nominal heat output at 50/30 °C, propane [2]		kW	93-598	109-704	123-798	138-902
• Nominal heat input with natural gas [3]		kW	54-564	64-662	62-748	71-854
• Nominal heat input with propane [2]		kW	87-564	102-662	114-748	130-854
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	2 x 472	2 x 452	2 x 432	2 x 412
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	2 x 730	2 x 765	2 x 800	2 x 830
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.2/98.4	108.9/98.1	109.0/98.2	108.9/98.1
• Room heating energy efficiency						
- without control	ηs	%	94	93	93	-
- with control	ηs	%	96	95	95	-
- with control and room sensor	ηs	%	98	97	97	-
- annual energy consumption	Q_{HE}	GJ	926	1076	1212	-
• NOx class (EN 15502)			6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	39	45	39	45
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	18	26	23	30
• O_2 content in flue gas min./max. output		%	5.5/5.8	5.7/5.7	5.9/5.9	6.0/5.6
• Heat loss in standby mode (EN 15502) (50°C)		Watt	860	860	860	860
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	80
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	5.6-58.1	6.6-68.2	6.4-77.1	7.3-88.0
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	6.6-69.4	7.9-81.4	7.6-92.0	8.7-105.0
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	3.6-23.1	4.2-27.1	4.7-30.7	5.3-35.0
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	51/730	55/700	56/1036	56/1180
• Standby		Watt	5	5	5	5
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	76	73	76	77
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	-	-	-	-
• Condensate quantity (natural gas) at 50/30 °C		l/h	44	50	56	58
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	890	1044	1182	1348
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	85	101	98	112
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	64	65	66	67
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	43	44	48	47
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	29	29	29
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm^3/h	728	856	966	1104
- Maximum supply pressure for combustion air supply and flue gas line		Pa	60	60	60	60
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 D (1000-1600)

Type			D (1000)	D (1240)	D (1400)	D (1600)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	71-898	125-1160	132-1306	150-1486
• Nominal heat output at 50/30 °C, natural gas [1]		kW	77-982	136-1244	146-1406	166-1608
• Nominal heat output at 80/60 °C, propane [2]		kW	133-882	173-1139	193-1286	233-1488
• Nominal heat output at 50/30 °C, propane [2]		kW	147-982	184-1244	208-1406	254-1610
• Nominal heat input with natural gas [3]		kW	71-926	124-1182	134-1336	151-1518
• Nominal heat input with propane [2]		kW	140-926	179-1182	201-1336	236-1518
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	2 x 408	2 x 536	2 x 509	2 x 831
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	2 x 855	2 x 1090	2 x 1135	2 x 1435
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.3/88.6
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.0/98.2	109.0/98.2	108.9/98.1	109.1/98.3
• Room heating energy efficiency						
- without control	ηs	%	-	-	-	-
- with control	ηs	%	-	-	-	-
- with control and room sensor	ηs	%	-	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-	-
• NOx class (EN 15502)			6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	50	33	40	36
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm³	46	24	26	23
• O_2 content in flue gas min./max. output		%	5.5/5.8	5.9/6.0	6.0/5.7	6.0/5.8
• Heat loss in standby mode (EN 15502) (50°C)		Watt	860	1080	1080	1200
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-80	17.4-80	17.4-80	17.4-300
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	80	80	300
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.7 kWh/m³		m³/h	7.3-95.5	12.8-121.9	13.8-137.7	15.6-156.5
- Natural gas LL (G25) – (Wo = 12.4 kWh/m³) NCV = 8.13 kWh/m³		m³/h	8.7-113.9	15.3-145.4	16.5-164.3	18.6-186.7
- Propane (G31) NCV = 24.4 kWh/m³ [2]		m³/h	5.7-38.0	7.3-48.4	8.2-54.8	9.7-62.2
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230	1 x 230	1 x 230
• Electrical power consumption min./max.		Watt	57/1432	63/1662	67/2120	94/2024
• Standby		Watt	5	5	5	7
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	81	78	79	81
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	-	72	71	-
• Condensate quantity (natural gas) at 50/30 °C		l/h	74	102	96	114
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	1472	1866	2110	2396
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	112	196	211	238
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	66	68	69	66
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	44	47	49	44
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	28	28	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm³/h	1204	1528	1726	1962
- Maximum supply pressure for combustion air supply and flue gas line		Pa	60	60	60	60
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 D (2000-3100)

Type			D (2000)	D (2200)	D (3100)	D (3100)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	185-1852	203-2076	241-2460	297-2894
• Nominal heat output at 50/30 °C, natural gas [1]		kW	205-1998	229-2224	269-2640	324-3100
• Nominal heat output at 80/60 °C, propane [2]		kW	262-1852	299-2067	362-2455	427-2877
• Nominal heat output at 50/30 °C, propane [2]		kW	282-1998	316-2224	385-2640	453-3100
• Nominal heat input with natural gas [3]		kW	187-1886	206-2114	247-2502	297-2938
• Nominal heat input with propane [2]		kW	265-1886	306-2114	371-2502	437-2938
• Operating pressure heating min./max. (PMS)		bar	1/6	1/6	1/6	1/6
• Operating temperature max. (T_{max})		°C	95	95	95	95
• Boiler water content ($V_{(H20)}$)		l	2 x 756	2 x 718	2 x 1211	2 x 1118
• Flow resistance boiler			see diagram			
• Minimum circulation water quantity		l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	2 x 1580	2 x 1635	2 x 2280	2 x 2445
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]		%	109.0/98.2	108.6/97.8	108.7/97.9	108.5/97.7
• Room heating energy efficiency						
- without control	ηs	%	-	-	-	-
- with control	ηs	%	-	-	-	-
- with control and room sensor	ηs	%	-	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-	-
• NOx class (EN 15502)			6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	36	41	37	35
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm³	25	26	23	23
• O_2 content in flue gas min./max. output		%	6.0/5.9	6.0/5.9	6.0/5.9	6.0/6.0
• Heat loss in standby mode (EN 15502) (50°C)		Watt	1200	1200	1480	1480
• Dimensions			see dimensional drawing			
• Gas flow pressure min./max.						
- Natural gas E/LL		mbar	17.4-300	17.4-300	17.4-300	17.4-300
- Propane		mbar	37-57	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	300	300	300	300
• Gas connection values at 15 °C/1013 mbar:						
- Natural gas E – (Wo = 15.0 kWh/m³) NCV = 9.7 kWh/m³		m³/h	19.3-194.4	21.2-217.9	25.5-257.9	30.6-302.9
- Natural gas LL (G25) – (Wo = 12.4 kWh/m³) NCV = 8.13 kWh/m³		m³/h	23.0-232.0	25.3-260.0	30.4-307.7	36.5-361.4
- Propane (G31) NCV = 24.4 kWh/m³ [2]		m³/h	10.9-77.3	12.6-86.6	15.2-102.5	17.9-120.4
• Operating voltage (50/60 Hz)		V	1 x 230 3 x 400	1 x 230 3 x 400	1 x 230 3 x 400	1 x 230 3 x 400
• Electrical power consumption min./max.		Watt	203/3746	203/3866	271/8222	301/8282
• Standby		Watt	7	7	5	7
• Type of protection		IP	20	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40	5-40
• Sound power level						
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	86	85	89	88
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	-	-	-	-
• Condensate quantity (natural gas) at 50/30 °C		l/h	136	144	200	276
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2	4.2
• Construction			B23, B23P, C53, C63			
• Flue gas system						
- Temperature class			T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)		kg/h	2976	3338	3950	4460
- Flue gas mass flow at min. nominal heat input (dry)		kg/h	295	325	390	450
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	69	70	66	68
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	47	49	45	46
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	28	29	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48	48
- Combustion air flow rate		Nm³/h	2438	2732	3234	3660
- Maximum supply pressure for combustion air supply and flue gas line		Pa	60	60	60	60
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m³, operation in the Wobbe value range from 12.0 to 15.7 kWh/m3 is possible without resetting.

[4] Conversion acc. to EN 15502-1, Appendix J

Hoval UltraGas® 2 DH (1400-3100)

Type			DH (1400)	DH (2200)	DH (3100)
• Nominal heat output at 80/60 °C, natural gas [1]		kW	132-1306	203-2076	297-2894
• Nominal heat output at 50/30 °C, natural gas [1]		kW	146-1406	229-2224	324-3100
• Nominal heat output at 80/60 °C, propane [2]		kW	193-1286	299-2067	427-2877
• Nominal heat output at 50/30 °C, propane [2]		kW	208-1406	316-2224	453-3100
• Nominal heat input with natural gas [3]		kW	134-1336	206-2114	297-2938
• Nominal heat input with propane [2]		kW	201-1336	306-2114	437-2938
• Operating pressure heating min./max. (PMS)		bar	1/10	1/10	1/10
• Operating temperature max. (T_{max})		°C	95	95	95
• Boiler water content ($V_{(H20)}$)		l	2 x 509	2 x 709	2 x 1118
• Flow resistance boiler				see diagram	
• Minimum circulation water quantity		l/h	-	-	-
• Boiler weight (without water capacity, incl. cladding)		kg	2 x 1170	2 x 1735	2 x 2550
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) [4]		%	98.2/88.5	98.2/88.5	98.2/88.5
• Boiler efficiency at 30 % partial load (NCV/GCV) [4]			108.9/98.1	108.6/97.8	108.5/97.7
• Room heating energy efficiency					
- without control	ηs	%	-	-	-
- with control	ηs	%	-	-	-
- with control and room sensor	ηs	%	-	-	-
- annual energy consumption	Q_{HE}	GJ	-	-	-
• NOx class (EN 15502)			6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	40	41	35
• Carbon monoxide emissions at 50/30 °C (related to 3 % of O_2)	CO	mg/Nm^3	26	26	23
• O_2 content in flue gas min./max. output		%	6.0/5.7	6.0/5.9	6.0/6.0
• Heat loss in standby mode (EN 15502) (50°C)		Watt	1080	1200	1480
• Dimensions				see dimensional drawing	
• Gas flow pressure min./max.					
- Natural gas E/LL		mbar	17.4-80	17.4-300	17.4-300
- Propane		mbar	37-57	37-57	37-57
• Gas inlet pressure max. (idle pressure)		mbar	80	300	300
• Gas connection values at 15 °C/1013 mbar:					
- Natural gas E – (Wo = 15.0 kWh/m^3) NCV = 9.7 kWh/m^3		m^3/h	13.8-137.7	21.2-217.9	30.6-302.9
- Natural gas LL (G25) – (Wo = 12.4 kWh/m^3) NCV = 8.13 kWh/m^3		m^3/h	16.5-164.3	25.3-260.0	36.5-361.4
- Propane (G31) NCV = 24.4 kWh/m^3 [2]		m^3/h	8.2-54.8	12.6-86.6	17.9-120.4
• Operating voltage (50/60 Hz)		V	1 x 230	1 x 230 3 x 400	1 x 230 3 x 400
• Electrical power consumption min./max.		Watt	67/2120	203/3866	301/8282
• Standby		Watt	5	7	7
• Type of protection		IP	20	20	20
• Permitted ambient temperature during operation		°C	5-40	5-40	5-40
• Sound power level					
- Heating noise (EN 15036 part 1) (room air dependent)		dB(A)	79	85	88
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)		dB(A)	71	-	-
• Condensate quantity (natural gas) at 50/30 °C		l/h	96	144	276
• pH value of the condensate (approx.)		pH	4.2	4.2	4.2
• Construction				B23, B23P, C53, C63	
• Flue gas system					
- Temperature class			T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)			2110	3338	4460
- Flue gas mass flow at min. nominal heat input (dry)			211	325	450
- Flue gas temperature at max. nominal heat output and 80/60 °C		°C	69	70	68
- Flue gas temperature at max. nominal heat output and 50/30 °C		°C	49	49	46
- Flue gas temperature at min. nominal heat output and 50/30 °C		°C	29	29	28
- Max. permissible temperature of the combustion air		°C	48	48	48
- Combustion air flow rate		Nm^3/h	1726	2732	3660
- Maximum supply pressure for combustion air supply and flue gas line		Pa	60	60	60
- Maximum draught/underpressure at flue gas outlet		Pa	−30	−30	−30

[1] In relation to natural gas G20 (100 % methane). With a hydrogen content (H_2) of up to 20 % by vol. in accordance with DVGW ZP3100 (D), an output reduction of up to 7 % is possible.

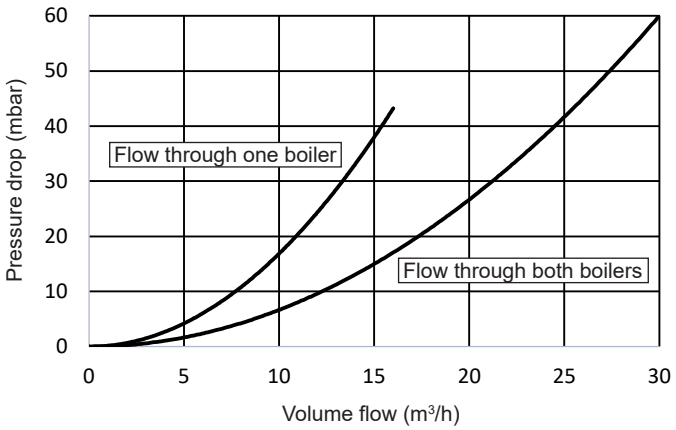
[2] Data related to NCV, conditional data

[3] Data related to NCV. The boiler series is tested for EE/H setting. With a factory setting to a Wobbe value of 15.0 kWh/m^3, operation in the Wobbe value range from 12.0 to 15.7 kWh/m^3 is possible without resetting.

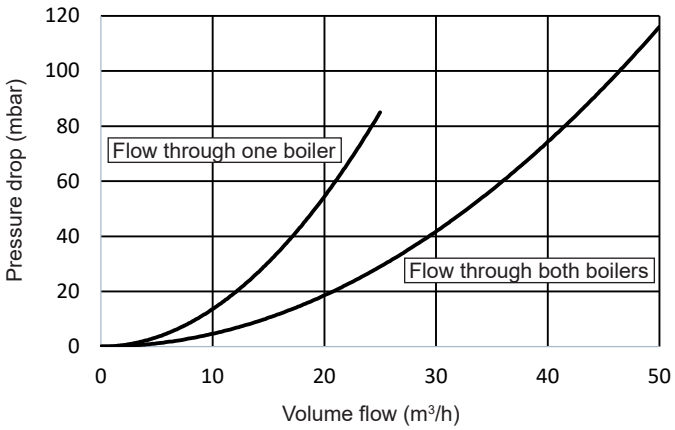
[4] Conversion acc. to EN 15502-1, Appendix J

Flow resistance on the heating water side

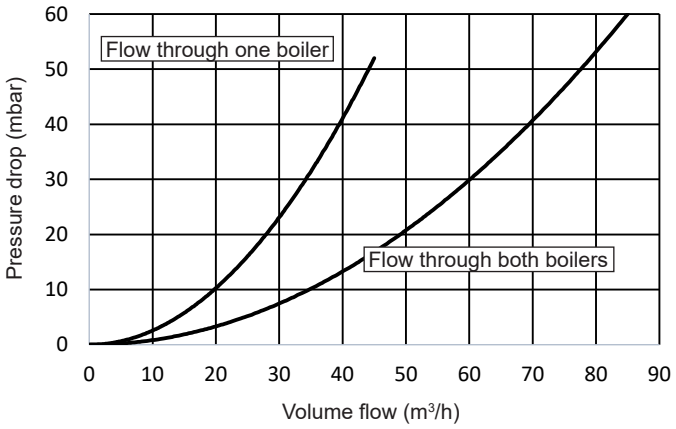
UltraGas® 2 D (250,300)



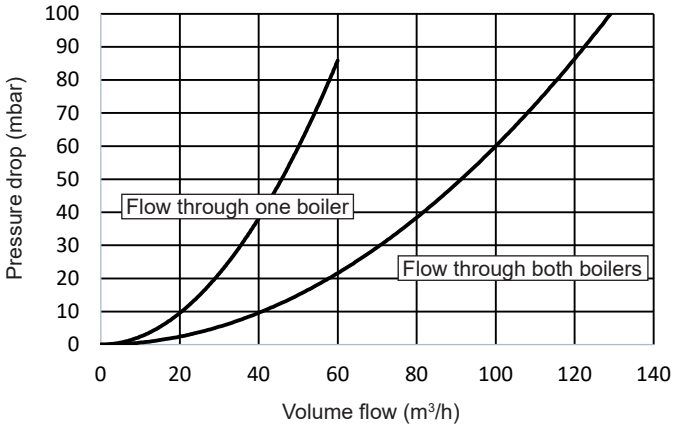
UltraGas® 2 D (380,460)



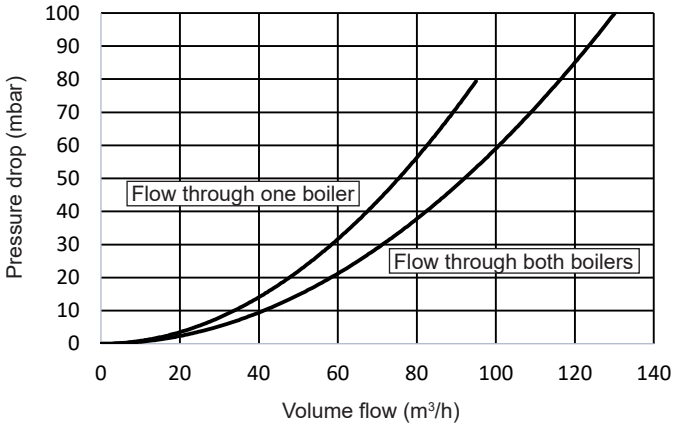
UltraGas® 2 D (600-900)



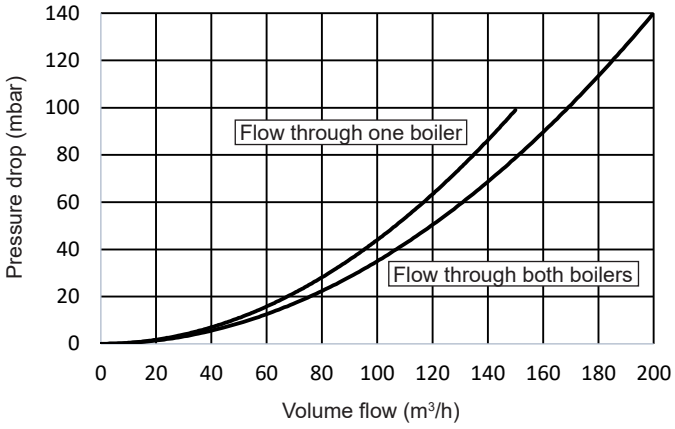
UltraGas® 2 D (1000-1400)



UltraGas® 2 D (1600-2200)

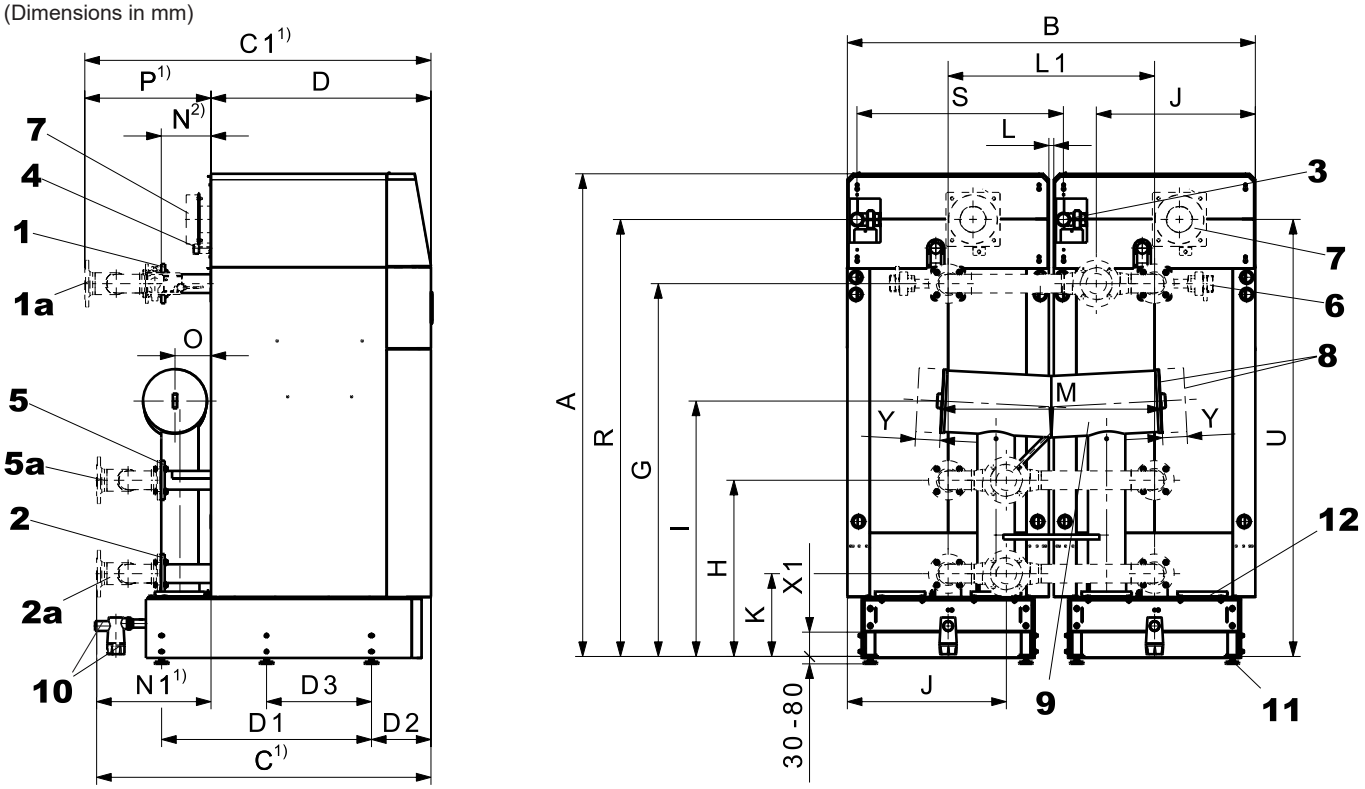


UltraGas® 2 D (2600,3100)



UltraGas® 2 D (250-3100)

(Dimensions in mm)



1 Flow heating
1a Hydraulic connection flow (option) 2)
2 Low-temperature return
2a Hydraulic connection low-temperature return (option) 2)
3 Gas connection
4 Safety flow (safety valve, air vent)
5 High-temperature return
5a Hydraulic connection high-temperature return (option) 2)
6 Hydraulic shut-off valve (option)
7 Combustion air intake connector (option)
8 Flue gas outlet connection left or right
9 Flue gas collector
10 Condensate drain with siphon and screw connection for plastic pipe
11 Boiler feet (adjustable 30-80 mm)
12 Cleaning opening

Notice
For subsequent technical details, see single boiler UltraGas® 2 (125-1550):
- Detailed dimensions and dimensions for multi-part installation
- Mounting position of system flow sensor
- Safety fitting pipe flow/return for mounting the protection set and diaphragm pressure expansion tank

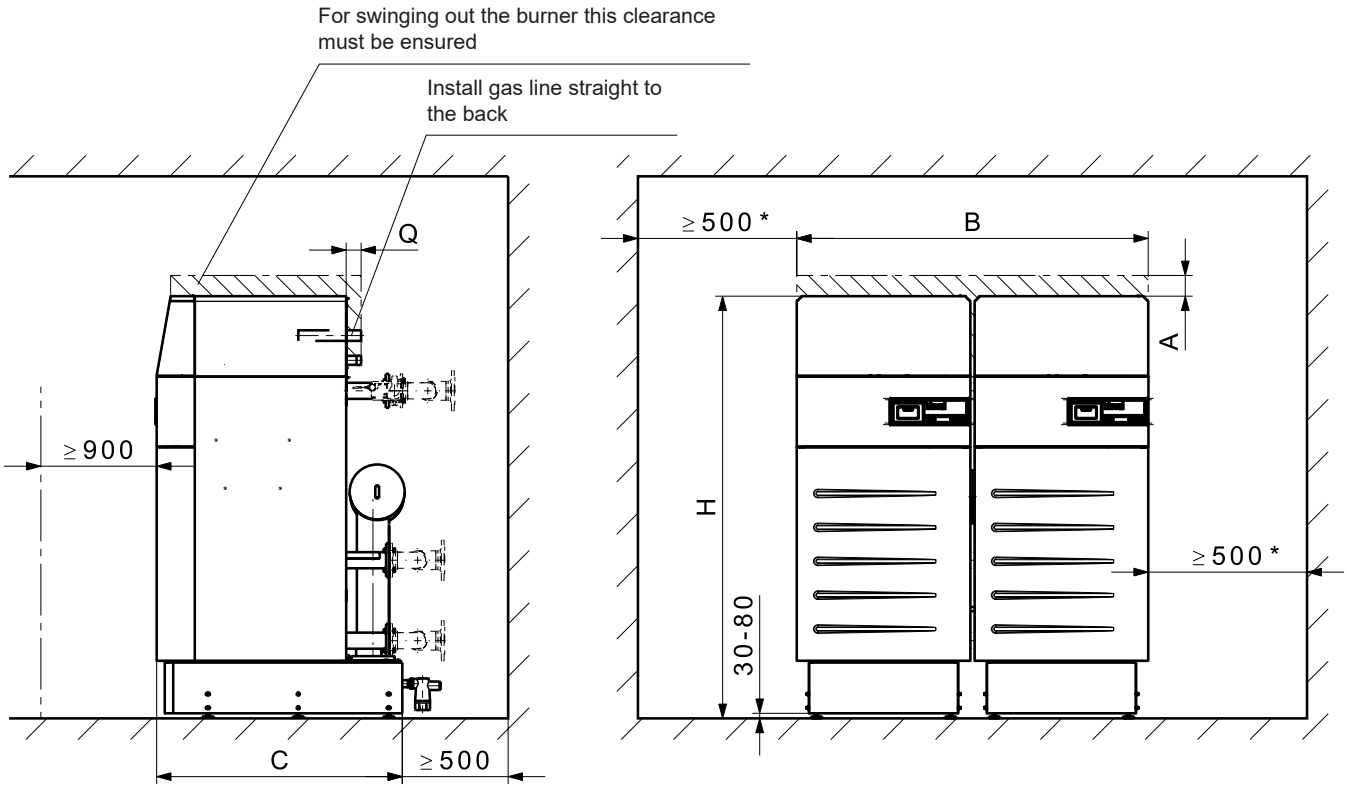
Type	A	B	C 1)	C1 1)	D	D1	D2	D3	G	H	I	J	K	L	L1	M	N 2)	N1 1)	O	P 1)	R	S	U	X1	Y
D (250,300)	1923	1560	1269	1317	799	754	242	-	1479	714	1116	597	334	120	840	902	207	470	142	518	1725	840	1725	99	-
D (380,460)	1968	1660	1363	1411	895	854	242	-	1517	717	1116	647	337	20	840	902	204	468	147	516	1778	840	1778	99	-
D (600-1000)	1923	1880	1807	1864	1165	1204	242	-	1447	745	1143	814	365	20	950	930	285	642	176	699	1735	950	1736	96	-
D (1240,1400)	2234	2240	1827	1884	1184	1294	242	-	1564	757	1195	904	377	20	1130	1019	286	643	205	700	1966	1130	1938	89	-
D (1600-2200)	2255	2600	2158	2218	1364	1480	242	-	1573	788	1280	1054	408	20	1310	1018	378	794	228	854	1959	1310	1959	89	-
D (2600,3100)	2395	3150	2571	2631	1640	1790	250	895	1600	822	1231	1339	442	30	1590	1322	420	931	240	991	2064	1590	2064	89	495
DH (1400)	2234	2240	1827	1884	1184	1294	242	-	1564	757	1195	904	377	20	1130	1019	286	643	205	700	1966	1130	1938	89	-
DH (2200)	2255	2600	-	-	1364	1480	242	-	1573	788	1280	1054	408	20	1310	1018	378	-	228	-	1959	1310	1959	89	-
DH (3100)	2395	3150	-	-	1640	1790	250	895	1600	822	1231	1339	442	30	1590	1322	390	-	240	-	2064	1590	2064	89	495

Type	1,2,5 3)	1a,2a,5a 2), 3)	3	4	7	8	10
D (250,300)	DN 65 / PN 6 / 4-hole	DN 80 / PN 6 / 4-hole	Rp 1″	R 1″	Ø 122/125	Ø 254/256	DN 40
D (380,460)	DN 65 / PN 6 / 4-hole	DN 80 / PN 6 / 4-hole	Rp 1½″	R 1¼″	Ø 197/200	Ø 254/256	DN 40
D (600-1000)	DN 100 / PN 6 / 4-hole	DN 125 / PN 6 / 8-hole	Rp 1½″	R 1½″	Ø 197/200	Ø 306/308	DN 40
D (1240,1400)	DN 100 / PN 6 / 4-hole	DN 125 / PN 6 / 8-hole	Rp 2″	R 2″	Ø 247/250	Ø 356/358	DN 40
D (1600-2200)	DN 125 / PN 6 / 8-hole	DN 150 / PN 6 / 8-hole	Rp 2″	R 2″	Ø 247/250	Ø 402/404	DN 40
D (2600,3100)	DN 150 / PN 6 / 8-hole	DN 200 / PN 6 / 8-hole	Rp 2″	R 2″	Ø 247/250	Ø 504/506	DN 40
DH (1400)	DN 100 / PN 16 / 4-hole	-	Rp 2″	R 2″	Ø 247/250	Ø 356/358	DN 40
DH (2200)	DN 125 / PN 16 / 8-hole	-	Rp 2″	R 2″	Ø 247/250	Ø 402/404	DN 40
DH (3100)	DN 150 / PN 16 / 8-hole	-	Rp 2″	R 2″	Ø 247/250	Ø 504/506	DN 40

1) UltraGas® 2 D: dimensions incl. hydraulic connections and hydraulic butterfly valves
2) UltraGas® 2 D and UltraGas® 2 DH: dimensions without hydraulic connection and hydraulic butterfly valve
No hydraulic connections of the double boilers are available for UltraGas® 2 DH.
3) DN = nominal diameter, PN = nominal pressure

Space requirements

UltraGas® 2 D (250-3100)
(Dimensions in mm)



≥1000 with hydraulic connection set

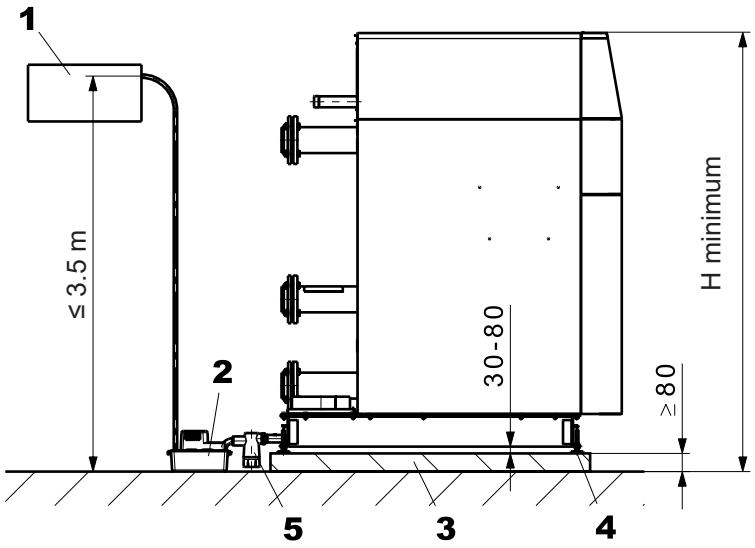
UltraGas® 2 type	A [1]	A minimum [2]	B	C	H [3]	H minimum [4]	Q
D (250,300)	169	106	1560	1060	1953	1934	125
D (380,460)	155	71	1660	1160	1998	1979	2
D (600-1000)	513	156	1880	1510	1953	1937	60
D (1240,1400)	121	121	2240	1600	2264	2255	155
D (1600-2200)	280	195	2600	1786	2285	2276	119
D (2600,3100)	291	154	3150	2104	2425	2416	163
DH (1400)	121	121	2240	1600	2264	2255	155
DH (2200)	280	195	2600	1786	2285	2276	119
DH (3100)	291	154	3150	2104	2425	2416	163

[1] If room height is too small: Reduction of dimension possible (see A minimum).
[2] **Attention!** With A minimum the burner can not be swung out completely anymore! Cleaning with UltraGas® 2 D (250-460) and UltraGas® 2 D (1240-3100) still possible
[3] Height value assumes adjustable feet are set to 30 mm
[4] The base plates cannot be installed without feet and the installer will have to fit a siphon with min. 70 mm barrier height. For details see next page.

- The heat generator can be placed with one side directly on the wall. However, to protect heat-sensitive walls against damage, a distance of at least 150 mm from the wall must be provided.
- The cleaning opening must be easily accessible. As a result, a minimum distance of 500 mm must be maintained on the cleaning opening side.

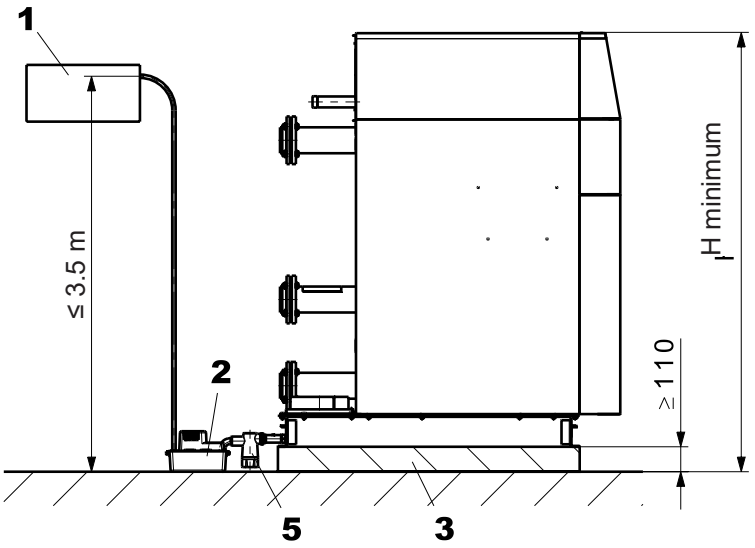
UltraGas® 2 (250-3100) with masonry base and adjustable feet

(Dimensions in mm)



UltraGas® 2 type	H minimum [1]
D (250,300)	1934
D (380,460)	1979
D (600-1000)	1937
D (1240,1400)	2255
D (1600-2200)	2276
D (2600,3100)	2416
DH (1400)	2255
DH (2200)	2276
DH (3100)	2416

UltraGas® 2 (250-3100) with masonry base without adjustable feet



UltraGas® 2 type	H minimum [1]
D (250,300)	1934
D (380,460)	1979
D (600-1000)	1937
D (1240-1400)	2255
D (1600-2200)	2276
D (2600,3100)	2416
DH (1400)	2255
DH (2200)	2276
DH (3100)	2416

1 Neutralisation unit (option)
2 Condensate pump (option)
3 Masonry base
4 Feet adjustable up to 30-80 mm
5 Siphon [2]

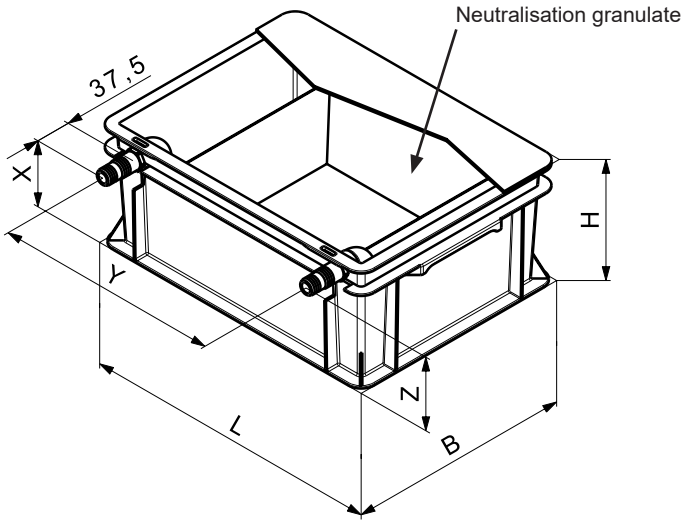
[1] Height value assumes adjustable feet are set to 30 mm
[2] **Caution!** The installer will have to fit a siphon with min. 70 mm barrier height.

Notice

- The steps of the climbing aid provided must be horizontal. Adapt the climbing aid if necessary.
- Base plates and feeds will not be re-funded!
- With H minimum, cleaning the siphon is more difficult.

Neutralisation unit HNB-0400 to HNB-1600

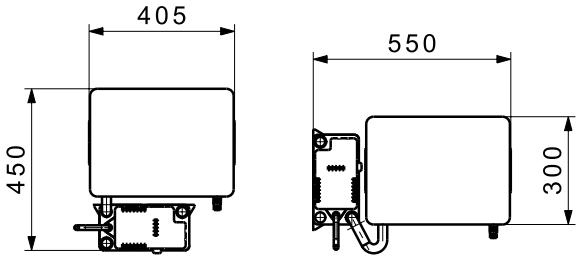
(Dimensions in mm)



	HNB-0400,-0800	HNB-1200,-1600
Dimensions (L x W x H)	405 x 300 x 180 mm	605 x 400 x 180 mm
Inlet height (Z)	128 mm	
Drain height (X)	118 mm	
Distance between the connections (Y)	approx. 350 mm	approx. 550 mm

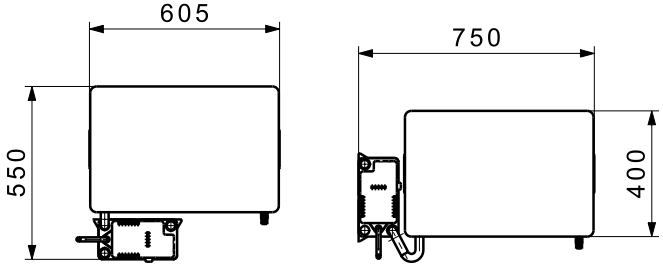
Neutralisation unit HNB-0400,-0800 and condensate pump

(Dimensions in mm)



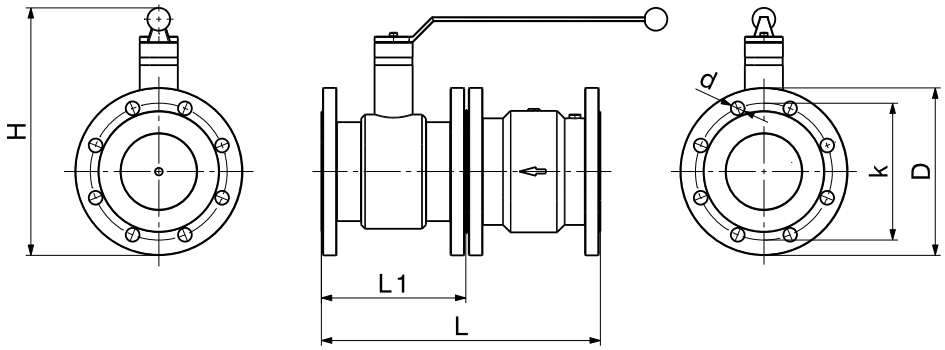
Neutralisation unit HNB-1200,-1600 and condensate pump

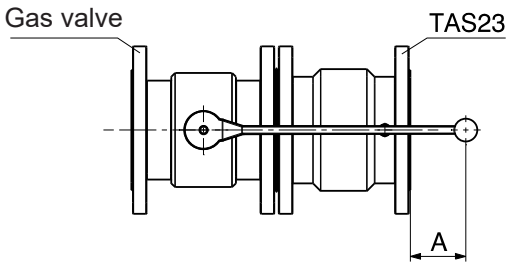
(Dimensions in mm)



Gas ball valves TAS (thermally activating shut-off device) with flange

(Dimensions in mm)





TAS type	L	L1	H	D	k	d/number of flange holes	A
DN 65	297	170	262.8	185	145	18/4	3
DN 80	307	180	298.3	200	160	18/8	128
DN 100	367	190	325.3	218	180	18/8	73

Standards and guidelines

The official regulations for installation and operation must be observed. In particular, these are the country-specific standards (e.g. EN standard, DIN standards, etc.) as well as the corresponding regional regulations.

The following standards and guidelines must be complied with:

- Hoval technical information and installation instructions
- hydraulic and technical control regulations of Hoval
- DVGW directives
- DIN EN 12828
  Safety-relevant requirements
- DIN EN 12831 Heaters
  Rules for the calculation of the heat requirements of buildings
- VDI 2035
  Protection against damage by corrosion and boiler scale formation in heating and service water installations
- EN 14868
  “Protection of metallic materials against corrosion”
- VDE 0100 supplement 2

Water quality in heating systems

Filling and replacement water, heating water

The following applies:

- VDI 2035
- In addition, the EN 14868 standard must be applied, **as well as the manufacturer-specific specifications**

Manufacturer-specific specifications

Filling and replacement water

The filling and replacement water can be both fully demineralised and also merely softened.

Heating water

- In the case of **full demineralisation of the filling and replacement water**, the electrical conductivity of the heating water must not exceed the value of 100 µS/cm.
- In the case of **softening the filling and replacement water**, the following conditions must be complied with:
  The quality of the heating water must be checked and documented periodically:
  - For an installed heat output above 100 kW up to and including 1000 kW, an annual check of the heating water is required.
  - For an installed heat output above 1000 kW, an check of the heating water is required twice a year.

  The following standard values for the heating water must be measured and adhered to:
  - Electrical conductivity of the heating water for operation with water containing salts: > 100 µS/cm to ≤ 1500 µS/cm
  - pH value of the heating water for systems without aluminium alloy as water-side material 8.2 to 10.0 (measurement 10 weeks after commissioning at the earliest)
- The sum of the chloride, nitrate and sulphate contents in the heating water must not exceed 50 mg/l in total.

Additional notices

- Hoval boilers and calorifiers are suitable for heating systems without significant oxygen intake. (System type I according to EN 14868).
- Plants with continual oxygen intake (e.g. underfloor heating without diffusion-proof plastic piping) or intermittent oxygen intake (e.g. requiring frequent topping-up) must be equipped with a system separation.
- In the case of bivalent heating systems, the values of the heat generator with the strictest requirement for water quality must be complied with.
- If only the boiler is replaced in an existing plant, it is not recommended for the entire heating system to be refilled, provided that the heating water already contained in the system complies with the relevant directives or standards.
- Before filling new systems and, where necessary, existing heating systems containing heating water that does not comply with the directives or standards, the heating system must be professionally cleaned and flushed. The boiler must not be filled until the heating system has been flushed.

Frost protection agent

see separate engineering sheet “Use of frost protection agent”.

Heating room

- Boilers cannot be positioned in rooms in which halogen compounds can occur and into which combustion air can enter (e.g. laundrettes, hairdressers).
- Halogen compounds can be caused by cleaning and degreasing solutions, dissolvents, glue and bleaching lyes. Pay attention to the Procal leaflet, corrosion through halogen compounds.

Combustion air supply

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. For direct combustion air to boiler mount the connection for direct combustion air inlet. It is very important to ensure that the combustion air is free from halogen compounds. These are present, for example, in spray cans, varnishes, glues, solvents and cleansing agents.

For the version with common flue gas line with overpressure, the flue gas excess pressure set must be imperatively mounted!

The minimum free cross-section for the combustion air can be assumed simplified as follows:

- *Room air-independent operation with separate combustion air pipe to the boiler:*
  0.8 cm² per 1 kW of output. The pressure drop in the combustion air pipe must be considered for the calculation of the flue gas system.
- In the UltraGas® 2, ventilation of the installation or boiler room must be guaranteed for operation independent from the room air.
- *Room air-dependent operation:*
  Minimum free cross-section of the opening into the open: 150 cm² or twice 75 cm² and additionally 2 cm² necessary for each kW of output over 50 kW for vent into the open.

Gas connection

Commissioning

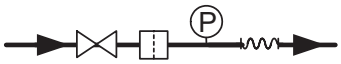
- Initial commissioning must be performed by a specialist technician from Hoval or a gas specialist technician.
- Burner setting values according to the installation instructions.

Manual gas shut-off tap and gas filter

Immediately in front of the boiler a manual gas shut-off device (tap) must be installed according to relevant regulations.

In the UltraGas® 2 (400-1550) type, an external gas filter must be installed in the gas supply line.
Make sure that the gas line from the external gas filter to the gas connection of the boiler is cleaned.
For the UltraGas® 2 (125-350) types, it is necessary to comply with the local regulations concerning the need for a gas filter.

Construction of a recommended gas connection



Legend:


manual gas shut-off valve


gas hose/compensator


gas filter

pressure gauge with test burner and push-button valve

Type of gas

- The boiler is only to be operated with the type of gas stated on the rating plate.

Gas pressure natural gas

Necessary gas flow pressure at the boiler inlet:
UltraGas® 2 D (250-1400) min. 17.4 mbar, max. 80 mbar
UltraGas® 2 D (1600-3100) min. 17.4 mbar, max. 300 mbar

Gas pressure propane

- A gas pressure controller to reduce the boiler inlet pressure must be installed on-site for propane.
- Necessary gas flow pressure at the boiler inlet:
  UltraGas® 2 (125-1550)
  min. 37 mbar, max. 50 mbar

Gas pressure regulator

- The installation of a gas pressure regulator is only necessary if the gas flow pressure in the gas network exceeds the maximum permissible gas flow pressure of the UltraGas® 2 D or if there are considerable fluctuations in the gas flow pressure.

- Pressure fluctuations in the gas network must be prevented by suitable measures (e.g. gas storage tanks or pressure regulators). The local conditions must be checked in each individual case.

Closed heating system
The boiler is only approved for use in closed heating systems.

Minimum circulation water quantity
No minimum water circulation volume is required.

Calorifier connection
If a calorifier is connected, all heating groups must be provided with a mixer.

Installation instructions
Please observe the installation instructions supplied with every boiler.

Space requirements
See “Dimensions” for information

Pump follow-on
For operating temperatures of the boiler above 85 °C, after each burner switch-off, the circulating pump must be in operation for at least 2 minutes (the pump after-run is included in the boiler controller with TopTronic© E control).

Heating boiler in the attic
If the gas boiler is positioned on the top floor, the installation of a low water protection, which automatically turns the gas burner off in case of water shortage, is recommended.

Condensate drain
- A permit for discharge of the flue gas condensate into the sewage system must be obtained from the relevant authority or sewer operator.
- The condensate from the flue gas system can be discharged through the boiler. A condensate trap is not needed anymore with the flue gas system.
- The condensate must be conducted openly (funnel) into the sewage system.
- Suitable materials for condensate drain:
  - stoneware pipes
  - pipes made from glass
  - pipes made from stainless steel
  - pipes made from plastic: PVC, PE, PP, ABS and UP
- A siphon must be installed at the condensate outlet on the gas boiler (included in the boiler scope of delivery).

Diaphragm pressure expansion tank
- An adequately dimensioned diaphragm pressure expansion tank must be provided.
- The diaphragm pressure expansion tank has to be installed in principle at the heating return, or at the safety flow.
- Starting from 70 °C an intermediate tank is necessary.

Safety valve
- At the safety flow a safety valve and an automatic exhauster must be installed.

Noise damping
The following measures are possible for sound insulation:
- Make boiler room walls, ceiling and floor as solid as possible.
- If there are living areas above or below the boiler room, connect pipes flexibly using expansion joints.
- Connect circulating pumps to the piping network using expansion joints

Noise level
- The acoustic power level value is dependent on the local and spacial circumstances.
- The acoustic pressure level is dependent on the installation conditions and can for instance be 5 to 10 dB(A) lower than the acoustic power level at a distance of 1 m.

Recommendation:
If the combustion air intake opening is located on the house facade near a noise-sensitive place (window of bedroom, garden terrace, etc.), we recommend using a silencer in the combustion air duct.

Flue gas system
- Gas boilers must be connected to a certified and approved flue gas system such as flue gas lines.
- Flue gas lines must be gas-, condensate- and over pressure-tight.
- The flue gas lines must be secured against unwanted loosening of the plug connections.
- The flue gas system must be connected with an angle, so that the resulting condensate of the flue gas system can flow back to the boiler and can be neutralised there before discharging into the canalisation.
- Gas boilers with condensation heat utilisation are to be connected to a flue gas line min. temperature class T120.
- A flue gas temperature limiter is integrated into the boiler.

Allocation of gas filters for UltraGas® 2

UltraGas® 2 type	Gas throughput m^3/h	Gas filter type	Dimension	Pressure drop gas filter (with clean filter) mbar
(125)	11.9	70602/6B	Rp 1″	0.2
(150)	14.2	70602/6B	Rp 1″	0.3
(190)	18.0	70603/6B	Rp 1½″	0.2
(230)	22.4	70603/6B	Rp 1½″	0.2
(300)	29.2	70603/6B	Rp 1½″	0.3
(350)	33.9	70603/6B	Rp 1½″	0.4
(400)	38.6	70603/6B	Rp 1½″	0.6
(450)	44.0	70603/6B	Rp 1½″	0.7
(500)	46.4	70631/6B	Rp 2″	0.5
(620)	59.3	70631/6B	Rp 2″	0.7
(700)	67.0	70631/6B	Rp 2″	0.8
(800)	76.1	70631/6B	Rp 2″	0.9
(1000)	94.6	70631/6B	Rp 2″	1.4
(1100)	106.0	70631/6B	Rp 2″	1.6
(1300)	125.5	70610F/6B	DN 65	1.5
(1550)	147.3	70610F/6B	DN 65	2.1

Standard values for flue gas line dimensions

Standard values for the flue gas line dimensions can be found in the following table.

Table with bases for calculation

- Calculation based on max. 1000 m above sea level.
- Installation room with supply air opening (room air dependent operation)
- An individual calculation must be carried out for room air-independent operation (accessories as option) or a combustion air supply via a duct.
- Connecting line was calculated with max. 5 m.
- Flue gas overpressure set: Mandatory, included in the scope of delivery!
- The first 2 m of the flue gas line must be configured with the same dimension as the flue gas connector, after which the size of the flue gas system can be selected according to the table below.

Table "Standard values for flue gas line dimensions"

Boiler		Flue gas line (smooth walled)	Number of elbows 90° (flue gas + combustion air)			
UltraGas® 2	Internal Ø flue gas outlet	Designation	Total pipe length in m (flue gas + combustion air)			
type	mm	DN	1	2	3	4
D (250)	254	200	45	44	43	43
D (300)	254		44	43	43	42
D (380)	254	225	46	45	44	43
D (460)	254	250	47	46	45	44
D (600)	306	300	48	47	46	45
D (700)	306		47	46	45	44
D (800)	306		46	45	44	43
D (900)	306	350	50	50	50	50
D (1000)	306		48	48	47	46
D (1240)	356		47	46	45	44
D (1400)	356	400	48	47	46	45
D (1600)	402		46	45	44	43
D (2000)	402	450	47	46	45	44
D (2200)	402	500	46	45	44	43
D (2600)	504		48	48	47	46
D (3100)	504		48	47	46	45
DH (1400)	356	400	48	47	46	45
DH (2200)	402	500	46	45	44	43
DH (3100)	504		48	47	46	45

Notice: The values in the table "Standard values for flue gas line dimensions" are standard values for reference.
An exact calculation for the flue gas duct must be made on-site.
For chimney systems above 25 m effective height, negative pressure in the chimney is to be expected in some operating conditions.
Therefore, we recommend an individual design of the chimney system and checking the individual pressure conditions.

Hoval quality.
You can count on us.

Hoval

Hoval is one of the leading international companies for heating and indoor climate solutions. Drawing on more than 80 years of experience and benefiting from a close-knit team culture, the Hoval Group delivers exciting solutions and develops technically superior products. This leadership role requires a sense of responsibility for energy and the environment, which is expressed in an intelligent combination of different heating technologies and customised indoor climate solutions.

Hoval also provides personal consultations and comprehensive customer service. With around 2500 employees in 15 companies around the world, Hoval sees itself not as a conglomerate, but as a large family that thinks and acts globally.
Hoval heating and indoor climate solutions are currently exported to more than 50 countries.

Responsibility for energy and environment

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2026 - 04 | Subject to modifications

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