

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

Wall-hanging gas condensing boiler

- With condensing boiler technology
- 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 cased with white varnished steel plates

Basic boiler control panel G04

- Gas firing sequence controller with monitoring unit
- Modulating burner control
- Main switch "I/O"
- Operation and fault indication

Optional

- Gas valve

Delivery

- Wall-hanging gas condensing boiler fully cased
- 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 dm ³ /10 min
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(21/18)	5.9-18.6	60
(26/23)	7.6-23.4	80
(32/28)	7.8-27.1	124

Energy efficiency class of the compound system with control.

Boiler permissions

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

Notice







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

Wall-hanging gas condensing boiler



Wall-hanging gas condensing boiler
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, ready cased.







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

Part No.
7014 106
7014 107
7014 108
7013 539
7013 540
7013 541

Energy efficiency class of the compound system with control



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

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

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

Accessories



Gas filter 70612/6b Rp 3/4"
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

Modification set for propane
for TopGas® combi (21/18),
TopGas® classic (24)
no external main gas valve possible!

2057 298

Modification set for propane
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 quick release air vent 3/8"
with cut-off valve

2052 976



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
for TopGas® classic
without calorifier
without/with mounting frame
Consisting of:
flow fitting, return flow fitting with integrated bypass valve, safety valve 3 bar
Filling/drain valve, expansion connection, 2 ball stop valves
Inner bore for heating flow/return flow Rp 3/4"
Clamp ring screwing for gas connection

2001 257

Part No.

Accessories



Extension set sanitary tube
for TopGas® combi
essential for installation of
connection set 3
2 pieces

6016 874



**Mounting frame MR50
without 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)
TopGas® combi (26/23)
TopGas® combi (32/28)

2029 696
2029 701
2029 702



**Mounting frame MR110 with expansion tank
and corrugated pipe hose for connecting to
connection set 3. Connection for expansion
tank on-site when connection set below!**
Frame for fixing Hoval TopGas® combi with
expansion tank and connection hose.
Content 12 l/pre-pressure 0.75 bar
TopGas® combi (21/18)
TopGas® combi (26/23)
TopGas® combi (32/28)

6016 863
6016 864
6016 865



Screen
for TopGas® classic, TopGas® combi
to cover the connection range gas,
heating flow and return
for TopGas® classic (12-30),
TopGas® combi (21/18, 26/23, 32/28),
in connection with connection set 3
Combination with/without mounting
frame MR50/MR110 possible
Connection: possible at the bottom
and at the top

2029 787

Flow temperature guard
for underfloor heating (per heating circuit
1 guard) 15-95 °C, SD 6 K, capillary max.
700 mm. Setting (visible from the outside)
inside the housing cover.



Clamp-on thermostat RAK-TW1000.S
Thermostat with strap, without cable and plug

242 902



Gas valve, passage DN 15, R 1/2"
with thermally releasing cut-off device

2012 075



Gas valve, corner version DN 15, R 1/2"
with thermally releasing cut-off device

2012 076

Accessories



Clamp ring screwing
(1/2" external thread x 15)
 For gas cock when no connection set or finery panel is used for pre-installation.

2001 824



Clamp ring screwing
(3/4" external thread x 22)
 For flow/return when no connection set or finery panel is used for pre-installation.

2006 330



Sludge separator with magnet
 Type: MB3 DN 25 Rp 1"
 With variable connection for vertical or horizontal pipelines
 Removal of ferromagnetic and non-magnetic dirt and sludge particles from heating or cooling circuits with the medium water or water/glycol (50/50%)
 Brass casing
 Sludge separation up to a particle size of 5 µm
 With unscrewable casing bottom part for cleaning and inspection work complete with sludge removal tap

2062 165

Nominal diameter: DN 25
 Pipe connection: Rp 1" (internal thread)
 Installation length: 90 mm
 Max. operating pressure: 6 bar
 Max. flow temperature: 110 °C
 Max. throughput: 2.0 m³/h
 Max. flow speed: 1.0 m/s
 Max. pressure drop: 3.8 kPa
 Contents: 0.36 l
 Weight: 2.3 kg

Additional sludge separators
 see "Various system components"



Automatic quick release air vent 1/2"
 with cut-off valve

2002 582

Service



Commissioning
 Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Part No.

TopGas® combi (21/18, 26/23, 32/28)

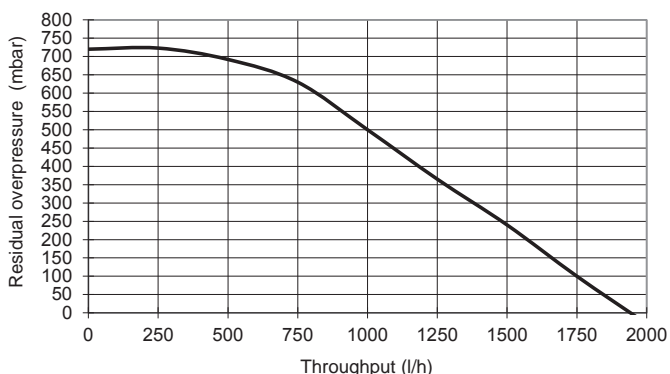
Type		(21/18)	(26/23)	(32/28)	
• Nominal heat output at 80/60 °C, natural gas	kW	5.4-17.8	6.9-22.8	7.1-26.3	
• Nominal heat output at 50/30 °C, natural gas	kW	5.9-18.6	7.6-23.4	7.8-27.1	
• Nominal heat output at 80/60 °C, propane ²⁾	kW	5.7-17.8	7.3-22.8	7.3-26.3	
• Nominal heat output at 50/30 °C, propane ²⁾	kW	6.3-18.6	8.0-23.4	8.0-27.4	
• Nominal heat input with natural gas ¹⁾	kW	5.6-18.7	7.1-23.7	7.2-27.3	
• Nominal heat input domestic water heating, natural gas ¹⁾	kW	5.6-22.1	7.1-28.0	7.5-32.7	
• Nominal heat input with propane ²⁾	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 _(H2O))	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)			6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	27	34	51
• CO ₂ content in flue gas at min./max. nominal heat output		%	8.8/9.0	8.8/9.0	8.8/9.0
• 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	25-50	25-50	25-50	
• 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	0.65-2.18	0.83-2.77	0.84-3.19	
- Propane ²⁾ (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	15/35	15/35	15/35	
• Standby	Watt	2	2	2	
• Type of protection	IP	44	44	44	
• 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	
- Maximum permitted 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 supply air and flue gas line	Pa	75	75	75	
- Maximum draught/depression at flue gas outlet	Pa	-50	-50	-50	

¹⁾ 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.

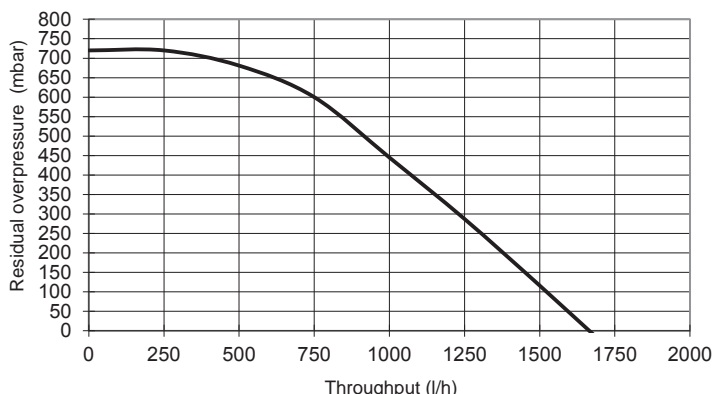
²⁾ Data related to NCV. TopGas® combi can also be operated with propane.

Maximum residual overpressure heating pump

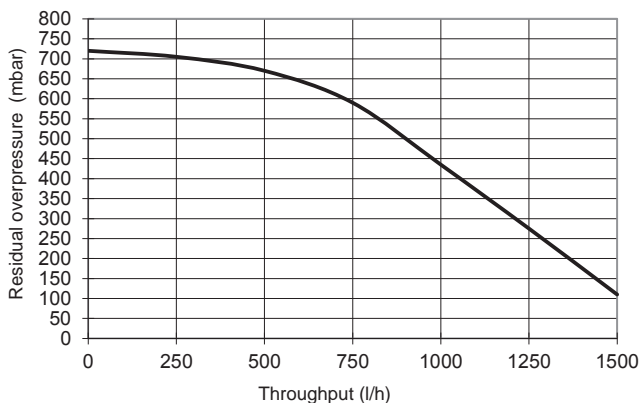
TopGas® combi (21/18)



TopGas® combi (26/23)



TopGas® combi (32/28)



Hot water output with TopGas® combi

TopGas® combi type	Hot water output				Max. flow rate through boiler dm ³ /10 min	Number of flats ³⁾	Stand-by deficiency qB (70 °C) Watt
	dm ³ /10 min ¹⁾ 40 °C	dm ³ /h ²⁾ 40 °C	dm ³ /10 min ¹⁾ 45 °C	dm ³ /h ²⁾ 45 °C			
(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!

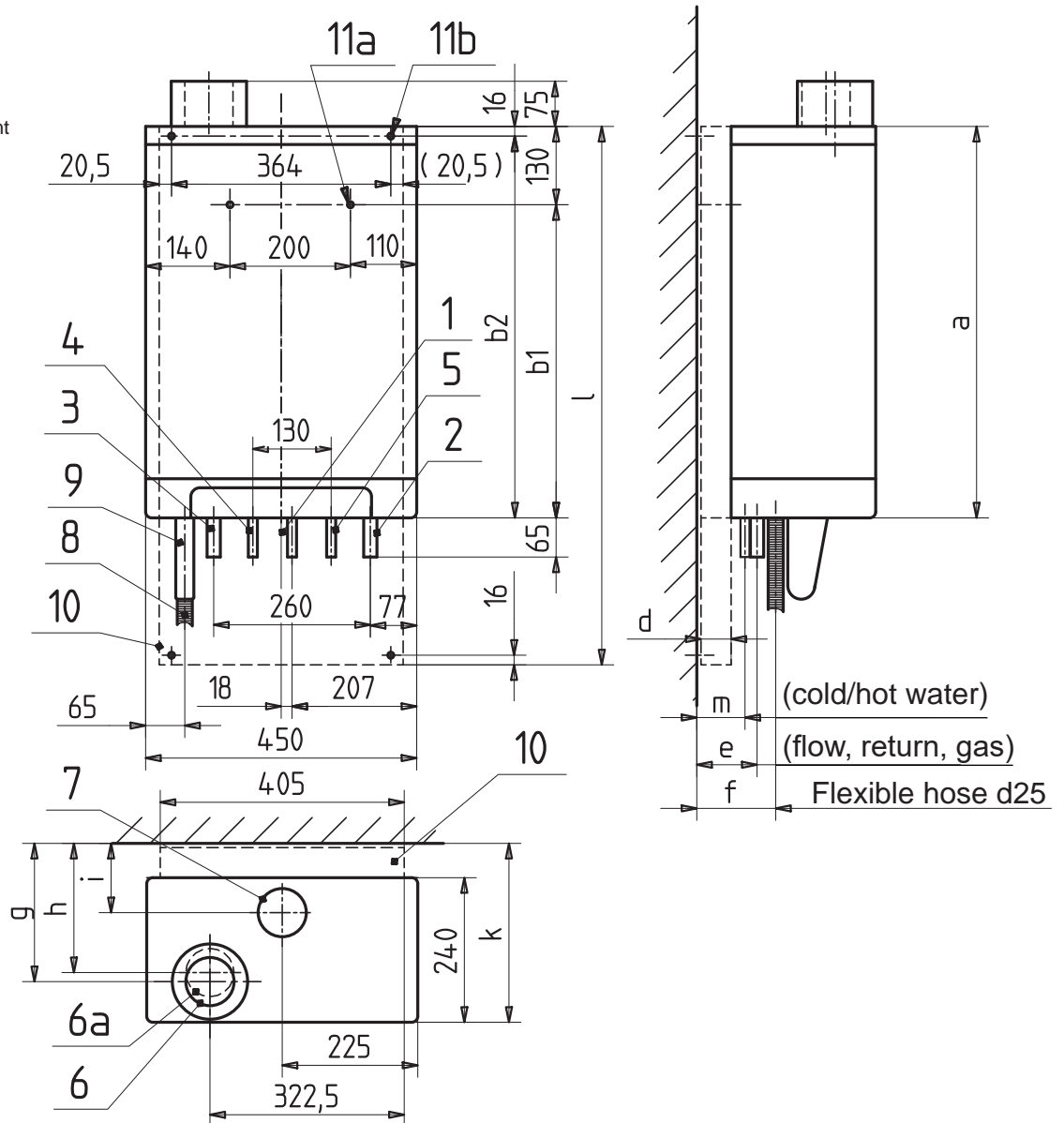
Notice

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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



TopGas® combi type

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 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 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 expansion tank (MR110)	710		694	110	160	185	295	280	175	357	954	140

- | | | |
|--|---|--|
| 1 Gas connection D15 for clamp ring screwing Rp 1/2" | 5 Cold water D15 for clamp ring screwing Rp 1/2" | 8 Condensate connection Ø 32 mm (hose D25/21) |
| 2 Return Heating D22 for clamp ring screwing Rp 3/4" | 6 Concentrical flue gas/combustion air connection C80/125 including measuring opening | 9 Syphon |
| 3 Flow Heating D22 for clamp ring screwing Rp 3/4" | 6a Single combustion air connection E80 (optional) | 10 Mounting frame, width 50 mm or 110 mm with expansion tank optional, see Accessories |
| 4 Hot water D15 for clamp ring screwing Rp 1/2" | 7 External supply air D80 | 11a Drill hole D10 without mounting frame |
| | | 11b Drill hole D10 with mounting frame |

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, ...) 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
- 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.

Heating room

Gas 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

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. An air pipe D = 80 for direct combustion air (air-exhaust system) can be directly connected to the boiler. 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 cm² or 2 x 75 cm² cross-section is necessary for of boiler output up to 50 kW. For each further kW output 2 cm² more cross-section must be provided.
- **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.

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 flow pressure at the boiler inlet: natural gas min. 18 mbar, max. 50 mbar. Propane min. 25 mbar, max. 50 mbar.

Sludge separator

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

Pump after-run time

- 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).

Minimum quantity of rotating water

- Depending on type of boiler, different minimum quantities of rotating water are demanded. See also technical data.
- During the burner mode the circulating pump must always be in function and the minimum heating water circulation must be guaranteed.

Boiler on the top storey of the building

If the gas boiler TopGas® classic 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 PVC
 - pipes made from polyethylene (PE)
 - pipes made from ABS or ASA

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.

Expansion tank

- An adequately dimensioned expansion tank must be provided.
- The expansion tank has to be installed at the connection of expansion tank (pump intake side) (see "Dimensions").
- Starting from 70 °C a connecting container is necessary.

Noise level

- The sound **power** level value is dependent on local and spacial circumstances.
- The sound **pressure** level is dependent on the installation conditions and can e.g. be 10 to 15 dB(A) lower than the sound **power** level at a distance of 1 m.

Looking for the appropriate hydraulic schematic?
Please contact your local Hoval partner.

Hoval TopGas® classic (12-30)

Wall-hanging gas condensing boiler

- With condensing boiler technology
- Heat exchanger made of corrosion resistant aluminium alloy with integrated forced flow copper coil;
 - flue 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 cased with varnished white steel plates

Basic boiler control panel G04

- 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 expansion
- Connection set

Delivery

- Wall-hanging gas condensing boiler fully cased
- 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!

Delivery

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



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

Energy efficiency class of the compound system with control

TopTronic® E controller

As supplement for basic boiler control panel G04.

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)

Boiler permissions

Hoval TopGas® classic (12-30):

CE product ID No. 0063BQ3155t

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 accounting 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 panelled
- Control and wall casing separately packed, mounting on-site

Mounted below/free-standing calorifier TopVal (130,160)

- Water heater with fixed, smooth pipe enamelled stainless steel heat exchanger.
- As calorifier placed below for TopGas® classic (12-30).
- Magnesium protection anode
- Thermal insulation using HCFC free PU foam, with foil mantle, white

Delivery

- Calorifier completely mounted

Calorifier

CombiVal ERW (200), white

- Calorifier made of steel, enamelled inside.
- Smooth pipe heat exchanger enamelled, built in.
- As free-standing calorifier for TopGas® classic (12-30).
- Magnesium protection anode integrated.
- Flange for electrical heating inset.
- Thermal insulation made of Polyurethane foamed on the calorifier, dismantable foil casing, white, completely mounted.
- Pocket welded in including thermometer

On request

- Electrical heating inset

Delivery

- Calorifier completely mounted

Wall-mounted 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 cased.

TopGas® classic		Nominal heat output 50/30 °C kW
Type		
(12)	A ➤	3.8-12.0
(18)	A ➤	5.7-18.0
(24)	A ➤	7.7-24.0
(30)	A ➤	9.2-30.0

7014 088
7014 099
7014 100
7014 101

Energy efficiency class of the compound system with control

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



Hoval TopGas® classic (12-30)
incl. TopTronic® E controller

Version as above, but with TopTronic® E control in a separate wall housing.

TopGas® classic		Nominal heat output 50/30 °C kW
Type		
(12)	A ➤	3.8-12.0
(18)	A ➤	5.7-18.0
(24)	A ➤	7.7-24.0
(30)	A ➤	9.2-30.0

7014 102
7014 103
7014 104
7014 105

Energy efficiency class of the compound system with control

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



Hoval TopGas® classic (12-30)

Design as above but without controller.

TopGas® classic		Nominal heat output 50/30 °C kW
Type		
(12)	A ➤	3.8-12.0
(18)	A ➤	5.7-18.0
(24)	A ➤	7.7-24.0
(30)	A ➤	9.2-30.0

7013 515
7013 516
7013 517
7013 518

Part No.

Accessories



Gas filter 70612/6b Rp 3/4"
 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

Modification set for propane
 no external main gas valve possible!

TopGas® classic type	min. output kW (80/60 °C)
----------------------	---------------------------

TopGas® classic (12)	3.5
TopGas® classic (18)	5.8
TopGas® classic (24)	7.4
TopGas® classic (30)	9.2

2007 995

2037 926

2057 295

2057 298

2057 299



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

2029 057



Automatic quick release air vent 3/8"
 with cut-off valve

2052 976



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
 for TopGas® classic
 without calorifier
 without/with mounting frame
 Consisting of:
 flow fitting, return flow fitting with integrated bypass valve, safety valve 3 bar
 Filling/drain valve, expansion connection, 2 ball stop valves
 Inner bore for heating flow/return flow Rp 3/4"
 Clamp ring screwing for gas connection

2001 257



Screen
 for TopGas® classic, TopGas® combi to cover the connection range gas, heating flow and return
 for TopGas® classic (12-30), TopGas® combi (21/18, 26/23, 32/28), in connection with connection set 3
 Combination with/without mounting frame MR50/MR110 possible
 Connection: possible at the bottom and at the top

2029 787



Mounting frame MR50 without 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)
 TopGas® classic (18)
 TopGas® classic (24,30)

2029 696

2029 701

2029 702

Accessories



Mounting frame MR110 with expansion tank and corrugated pipe tubing for connecting to connecting set 3, 4 or 10

Frame for fixation of the Hoval TopGas® classic with integrated expansion tank and connecting hose.

Content 12 l/pre-pressure 0.75 bar

TopGas® classic (12)

TopGas® classic (18)

TopGas® classic (24)

Part No.

6016 863

6016 864

6016 865



Connection set 10

for Hoval TopGas® 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, expansion connection

3-way valve Rp 3/4"

2 shut-off ball valves heating

flow/return, internal thread Rp 3/4"

Squeezing ring screw connection for gas connection

2025 577



Gas valve, passage DN 15, R 1/2"

with thermally releasing cut-off device

2012 075



Gas valve, corner version DN 15, R 1/2"

with thermally releasing cut-off device

2012 076



Clamp ring screwing

(1/2" external thread x 15)

For gas cock when no connection set or finery panel is used for pre-installation.

2001 824



Clamp ring screwing

(3/4" external thread x 22)

For flow/return when no connection set or finery panel is used for pre-installation.

2006 330

Accessories



Sludge separator with magnet

Type: MB3 DN 25 Rp 1"
 With variable connection for vertical or horizontal pipelines
 Removal of ferromagnetic and non-magnetic dirt and sludge particles from heating or cooling circuits with the medium water or water/glycol (50/50%)
 Brass casing
 Sludge separation up to a particle size of 5 µm
 With unscrewable casing bottom part for cleaning and inspection work complete with sludge removal tap

Nominal diameter: DN 25
 Pipe connection: Rp 1" (internal thread)
 Installation length: 90 mm
 Max. operating pressure: 6 bar
 Max. flow temperature: 110 °C
 Max. throughput: 2.0 m³/h
 Max. flow speed: 1.0 m/s
 Max. pressure drop: 3.8 kPa
 Contents: 0.36 l
 Weight: 2.3 kg

Additional sludge separators
 see "Various system components"



Automatic quick release air vent 1/2"
 with cut-off valve

2002 582



3-way reversing valve VC 4012 3/4"
 for calorifier
 external thread 3/4"
 230 V / 50 Hz
 single wire control
 running time: 7 s
 incl. 1 m cable

6016 891



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

Heating armature groups and wall distributors
 see "Various system components"

Free-standing calorifier



B **Calorifier TopVal (130) round**
 made of steel, inside enamel painted,
 with permanently installed coil 0.96 m²
 and magnesium sacrificial anode
 Useful volume: 126 l
 Operating/test pressure: 6/13 bar
 Operating temperature max.: 95 °C
 Foil jacket made of synthetic material,
 RAL 9010, pure white

6037 757



B **Calorifier TopVal (160) round**
 made of steel, inside enamel painted,
 with permanently installed coil 1.01 m²
 and magnesium sacrificial anode
 Useful volume: 160 l
 Operating/test pressure: 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® 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, expansion
 connection
 3-way valve Rp 3/4"
 2 ball stop valves
 Inner bore for heating flow/return
 flow Rp 3/4"
 Clamp ring screwing for gas connection

2025 576



B **CombiVal ERW (200) white**
 Calorifier with thermal insulation
 made from steel, enamelled on the inside
 With built-in enamelled
 plain-tube heat exchanger,
 Magnesium protection anode built in

7015 961

Thermal insulation made of polyurethane
 rigid foam, foam-lined at the
 calorifier, removable foil jacket,
 colour white

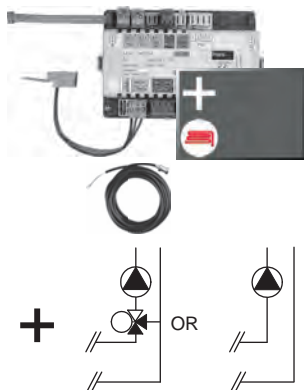
Technical data:
 Volume: 196 dm³
 Energy efficiency class: B
 Inspection port flange Ø 180/120 mm
 Heating surface coil: 0.95 m²
 Max. operating temperature: 95 °C
 Operating pressure:
 max. 10 bar (SVGW 6 bar)
 Test pressure: 13 bar (SVGW 12 bar)
 Dimensions (H): 1464 mm Ø 600 mm
 Tilting dimension: 1583 mm
 Weight: 77 kg

Delivery:
 Calorifier, thermal insulation
 and thermometer mounted
 packaged and delivered

SVGW No. 0503-4950

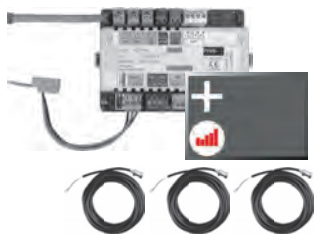
**Pressure expansion tanks, heating
 armature groups and wall distributors**
 see "Various system components"

TopTronic® E module expansions
for TopTronic® E basic module heat generator



Notice

The supplementary plug set may have to be ordered to implement functions differing from the standard!



Notice

The flow rate sensor set must be ordered as well.



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

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 w/o mixer or
- 1 heating/cooling circuit with mixer

Consisting of:

- Fitting accessories
- 1x contact sensor
- ALF/2P/4/T L = 4.0 m
- Basic plug set FE module

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 w/o 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

Flow rate sensor sets

Plastic housing

Size	Connection	Flow rate l/min
DN 8	G 3/4"	0.9-15
DN 10	G 3/4"	1.8-32
DN 15	G 1"	3.5-50
DN 20	G 1 1/4"	5-85
DN 25	G 1 1/2"	9-150

Flow rate sensor sets

Brass housing

Size	Connection	Flow rate l/min
DN 10	G 1"	2-40
DN 32	G 1 1/2"	14-240

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

Part No.

6034 576

6037 062

6038 526

6038 507

6038 508

6038 509

6038 510

6042 949

6042 950

6034 575

Accessories for TopTronic® E



Supplementary plug set
for basic module heat generator (TTE-WEZ)
for controller modules and module expansion
TTE-FE HK

6034 499
6034 503



TopTronic® E controller modules
TTE-HK/WW TopTronic® E heating circuit/
hot water module
TTE-SOL TopTronic® E solar module
TTE-PS TopTronic® E buffer module
TTE-MWA TopTronic® E measuring module

6034 571
6037 058
6037 057
6034 574



TopTronic® E room control modules
TTE-RBM TopTronic® E room control modules
easy white
comfort white
comfort black

6037 071
6037 069
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

6039 253



HovalConnect
HovalConnect LAN
HovalConnect WLAN

6049 496
6049 498

TopTronic® E interface modules
GLT module 0-10 V
HovalConnect Modbus
HovalConnect KNX

6034 578
6049 501
6049 593



TopTronic® E wall casing
WG-190 Wall casing small
WG-360 Wall casing medium
WG-360 BM Wall casing medium with
control module cut-out
WG-510 Wall casing large
WG-510 BM Wall casing large with
control module cut-out

6052 983
6052 984
6052 985
6052 986
6052 987



TopTronic® E sensors
AF/2P/K Outdoor sensor
TF/2P/5/6T Immersion sensor, L = 5.0 m
ALF/2P/4/T Contact sensor, L = 4.0 m
TF/1.1P/2.5S/6T Collector sensor, L = 2.5 m

2055 889
2055 888
2056 775
2056 776



System housing
System housing 182 mm
System housing 254 mm

6038 551
6038 552



Bivalent switch

2061 826

Further information
see "Controls"



Flow temperature guard

for floor heating (per heating circuit 1 guard)
15-95 °C, switching difference 6 K, capillary
tube max. 700 mm, setting (from the outside
visibly) inside the housing cover.

Clamp-on thermostat *RAK-TW1000.S*
Thermostat with strap, without cable and plug

Part No.

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 V0-100 °C

Cannot be installed in boiler control
panel:

- TopGas® classic (12-30)

Can be installed in boiler control
panel:

- TopGas® classic (35-120),
- TopGas® comfort

6016 725

TopGas® classic (12-30)
without controller on request

Service



Commissioning

Commissioning by works service or Hoval
trained authorised serviceman/company
is condition for warranty.

For commissioning and other services
please contact your Hoval sales office.

TopGas® classic (12-30)

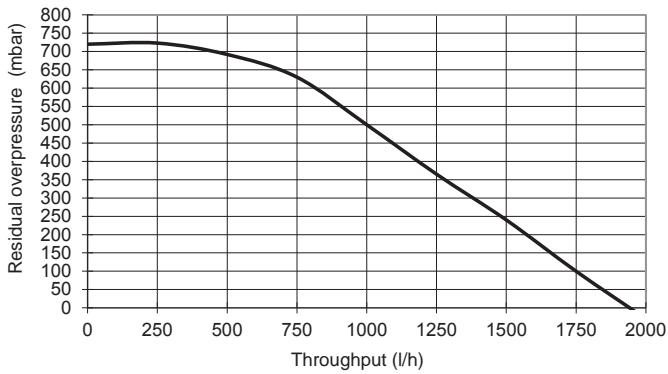
Type		(12)	(18)	(24)	(30)	
• Nominal heat output at 80/60 °C, natural gas	kW	3.4-11.5	5.3-17.2	7.0-22.9	8.7-28.5	
• Nominal heat output at 50/30 °C, natural gas	kW	3.8-12.0	5.7-18.0	7.7-24.0	9.2-30.0	
• Nominal heat output at 80/60 °C, propane ²⁾	kW	3.5-11.5	5.8-17.3	7.4-22.9	9.2-28.5	
• Nominal heat output at 50/30 °C, propane ²⁾	kW	3.4-12.0	6.3-18.0	8.0-24.0	9.6-30.0	
• Nominal heat input with natural gas ¹⁾	kW	3.5-11.8	5.3-17.8	7.1-23.5	8.8-28.9	
• Nominal heat input with propane ²⁾	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 _(H₂O))	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)		6	6	6	6	
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx	mg/kWh	27	27	24	53
• CO ₂ content in flue gas at min./max. nominal heat output	%	8.8/9.0	8.8/9.0	8.8/9.0	8.8/9.0	
• 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	25-50	25-50	25-50	25-50	
• 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	0.35-1.18	0.53-1.79	0.71-2.36	0.88-2.90	
- Natural gas LL- (Wo = 12.4 kWh/m ³) NCV = 8.57 kWh/m ³	m ³ /h	0.41-1.38	0.62-2.08	0.83-2.74	1.03-3.37	
- Propane ²⁾ (NCV = 25.9 kWh/m ³)	m ³ /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	15/40	15/40	15/45	15/40	
• Stand-by	Watt	2	2	2	2	
• Type of protection	IP	44	44	44	44	
• 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	T120	T120	T120	
- 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	
- Maximum permitted temperature of the combustion air	°C	50	50	50	50	
- Flow rate combustion air	Nm ³ /h	14.5	21.9	28.9	35.6	
- Maximum supply pressure for supply air 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. 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.

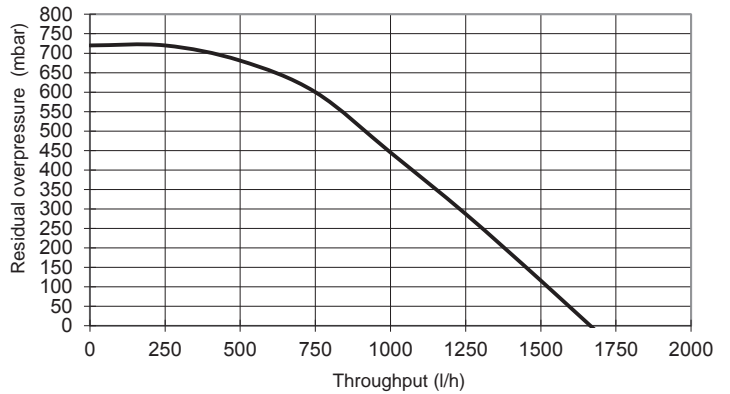
²⁾ Data related to NCV. TopGas® classic is also suitable for propane/butane (liquid gas) mixtures.

Residual overpressures of heating pumps

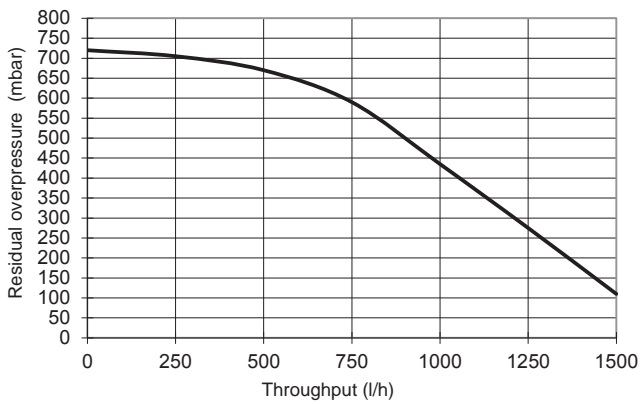
TopGas® classic (12)



TopGas® classic (18)

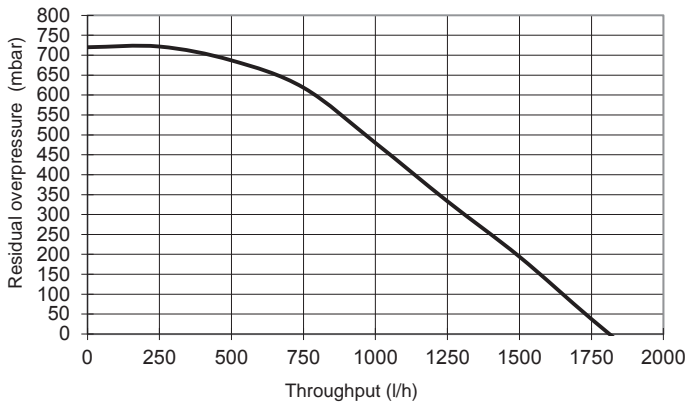


TopGas® classic (24, 30)

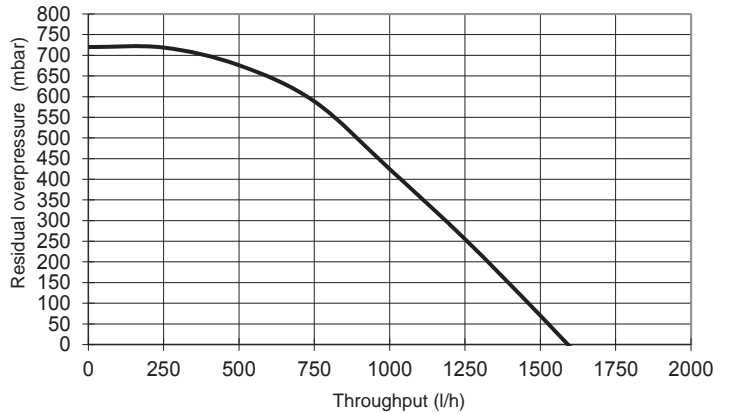


Residual overpressures of heating pumps TopGas® classic with connection set 4 or connection set 10 (reversing valve included in the set)

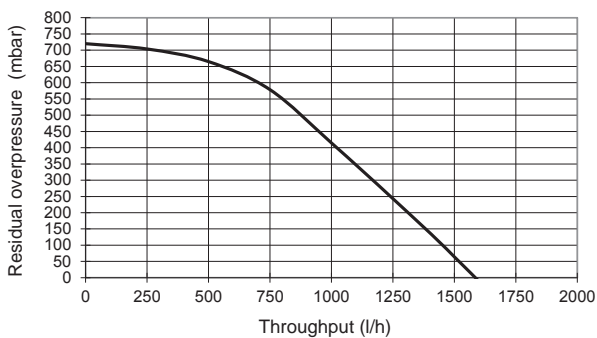
TopGas® classic (12)



TopGas® classic (18)



TopGas® classic (24, 30)



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

Type		TopVal (130)	TopVal (160)	CombiVal ERW (200)
• Capacity	dm ³	128	157	196
• Operating pressure/test pressure	bar	6/13	6/13	6/12
• Max. operating temperature	°C	95	95	95
• Fire protection class		B2	B2	B2
• Heat loss at 65 °C	W	53	56	49
• Weight	kg	53	56	77
• Dimensions	Diameter	590	590	600
	Height	869	1036	1464
<i>Heating register (built-in)</i>				
• Heating surface	m ²	0,96	1,01	0,95
• Heating water	dm ³	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		Number ³⁾ of flats	
		dm ³ /10 min ¹⁾ 45 °C	dm ³ /h ²⁾ 45 °C		
classic	TopVal	(130)	166	267	1
		(130)	179	411	1
		(130)	190	546	1
		(130)	198	610	1
classic	TopVal	(160)	199	267	1
		(160)	212	411	1-2
		(160)	223	546	1-2
		(160)	232	610	1-2
classic	CombiVal ERW	(200)	243	267	1-2
		(200)	256	411	1-2
		(200)	267	546	2
		(200)	276	610	2

¹⁾ Hot water peak performance in 10 min.

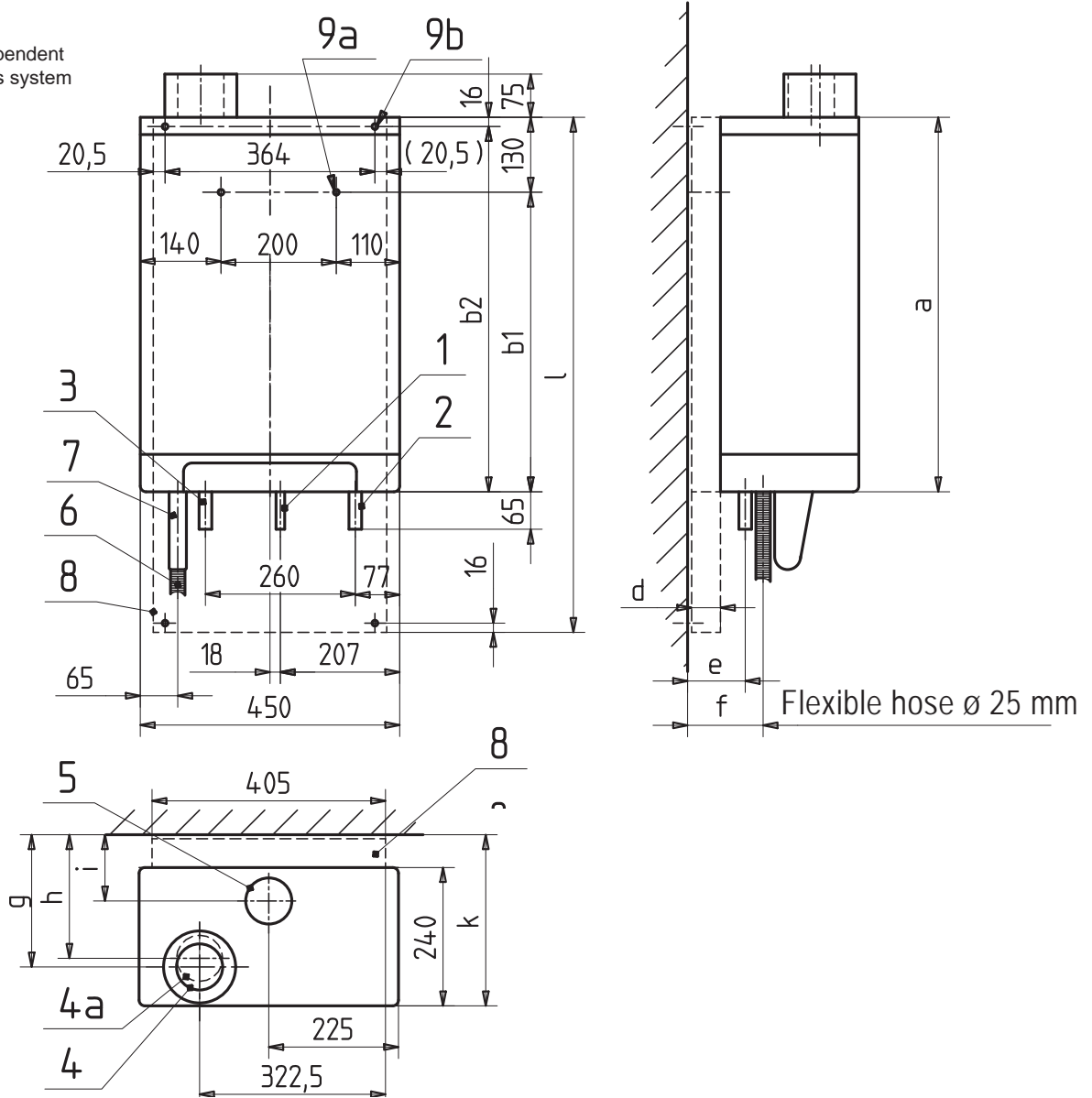
²⁾ Hot water output per hour.

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



TopGas® classic type

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 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 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 expansion tank (MR110)	710		694	110	160	185	295	280	175	357	954

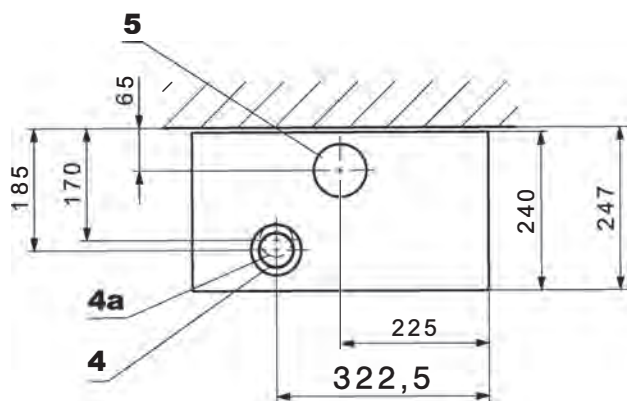
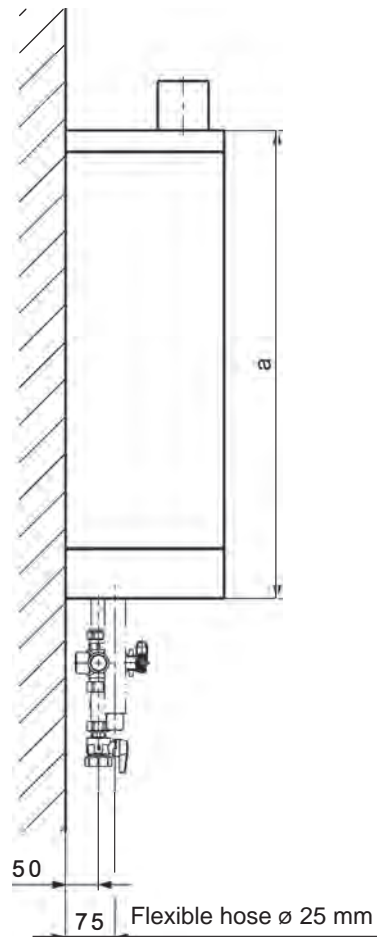
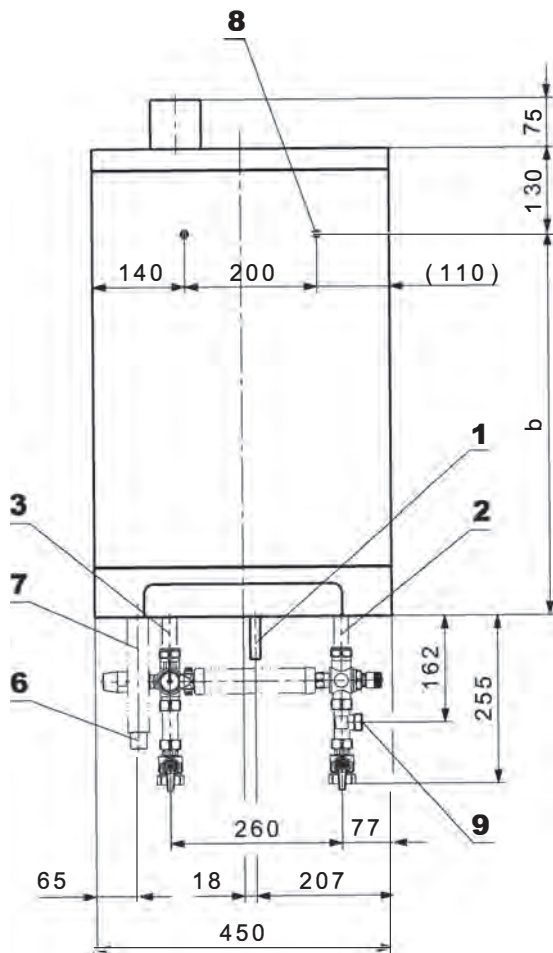
- | | | |
|--|---|---|
| 1 Gas connection D15 (for clamp ring screwing) | 4 Concentrical flue gas delivery air connection C80/125 including measuring opening | 8 Mounting frame, 50 mm or 110 mm with expansion tank optionally, see Accessories |
| 2 Return heating D22 (for clamp ring screwing) | 4a Single flue gas connection E80, (optional), see Accessories | 9a Drill hole D10 without mounting frame |
| 3 Flow heating D22 (for clamp ring screwing) | 5 External delivery air D80 | 9b Drill hole D10 with mounting frame |
| | 6 Condensate drain Ø 32 mm (hose D25/21) | |
| | 7 Siphon | |

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



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

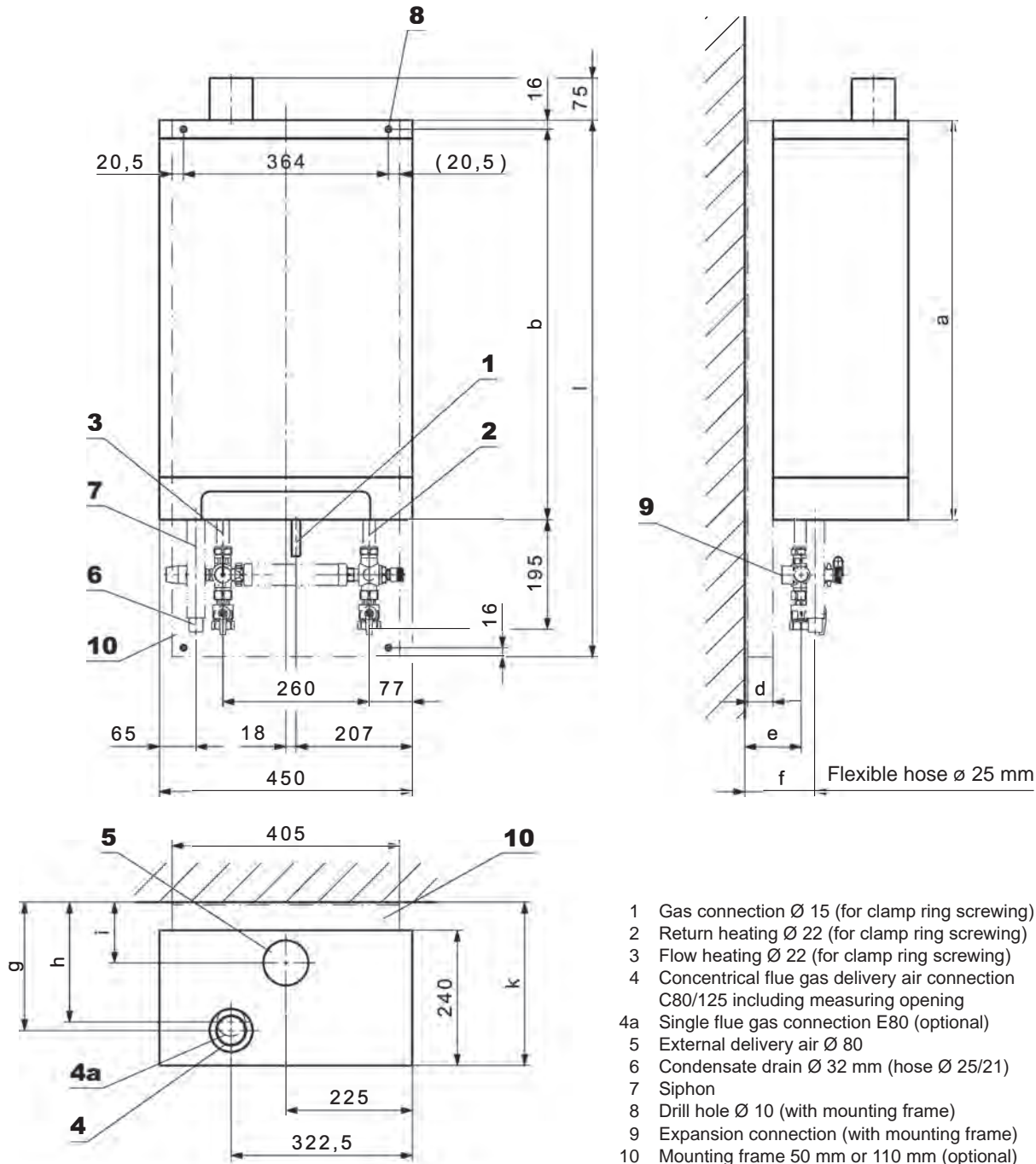
- 1 Gas connection Ø 15 (for clamp ring screwing)
- 2 Return heating Ø 22 (for clamp ring screwing)
- 3 Flow heating Ø 22 (for clamp ring screwing)
- 4 Concentric flue gas delivery air connection C80/125 including measuring opening
- 4a Single flue gas connection E80 (optional)
- 5 External delivery air Ø 80
- 6 Condensate drain Ø 32 mm (hose Ø 25/21)
- 7 Siphon
- 8 Drill hole Ø 10 (without mounting frame)
- 9 Expansion connection (without mounting frame)

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 (for clamp ring screwing)
- 2 Return heating Ø 22 (for clamp ring screwing)
- 3 Flow heating Ø 22 (for clamp ring screwing)
- 4 Concentral flue gas delivery air connection C80/125 including measuring opening
- 4a Single flue gas connection E80 (optional)
- 5 External delivery air Ø 80
- 6 Condensate drain Ø 32 mm (hose Ø 25/21)
- 7 Siphon
- 8 Drill hole Ø 10 (with mounting frame)
- 9 Expansion connection (with mounting frame)
- 10 Mounting frame 50 mm or 110 mm (optional)

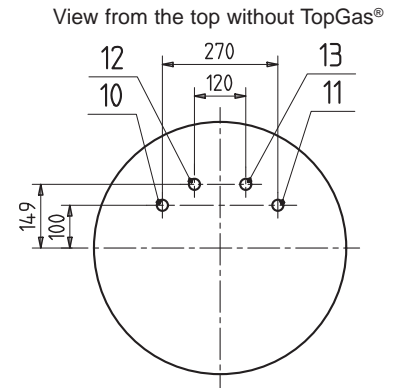
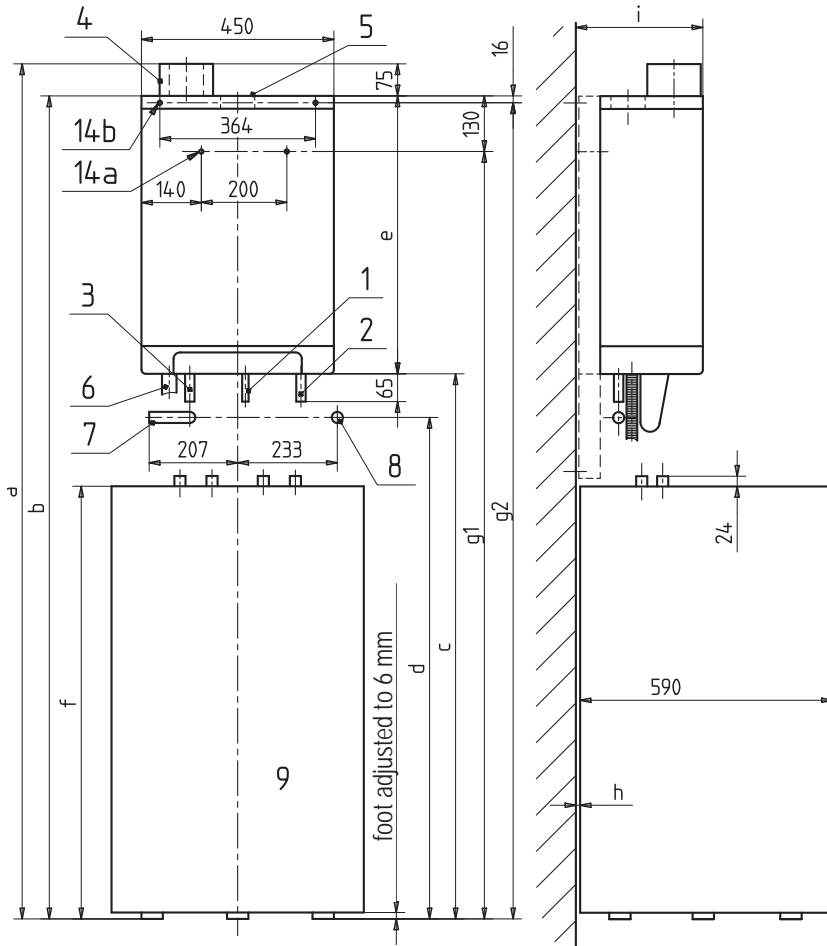
TopGas® classic
type

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

CombiVal ERW (200)
see Calorifiers



- 1 Gas connection D15 (for clamp ring screwing, on site)
 - 2 Return heating D22 (for clamp ring screwing, on site)
 - 3 Flow heating D22 (for clamp ring screwing, on site)
 - 4 Concentrical flue gas/combustion air connection C80/125 including measurement vents
 - 5 External delivery air D80
 - 6 Condensate drain Ø 32 mm
 - 7 Connection positions sideways heating flow Rp 3/4"
 - 8 Connection positions behind heating return Rp 3/4"
 - 9 Calorifier TopVal (130,160)
 - 10 Flow heating G 3/4" external thread
 - 11 Return heating G 3/4" external thread
 - 12 Hot water R 3/4" external thread
 - 13 Cold water R 3/4" external thread
- 14a Drill hole D10 without mounting frame
14b Drill hole D10 with mounting frame

TopGas® classic with TopVal 130

TopGas® classic type

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 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 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 expansion tank (MR110)	1943	1868	1156	998	710	860	–	1852	10	357

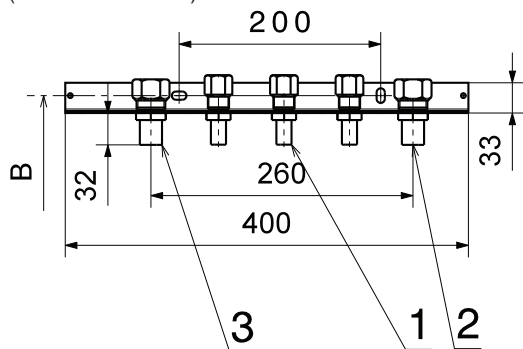
TopGas® classic with TopVal 160

TopGas® classic type

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 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 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 expansion tank (MR110)	2110	2035	1323	1163	710	1027	–	2020	10	357

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

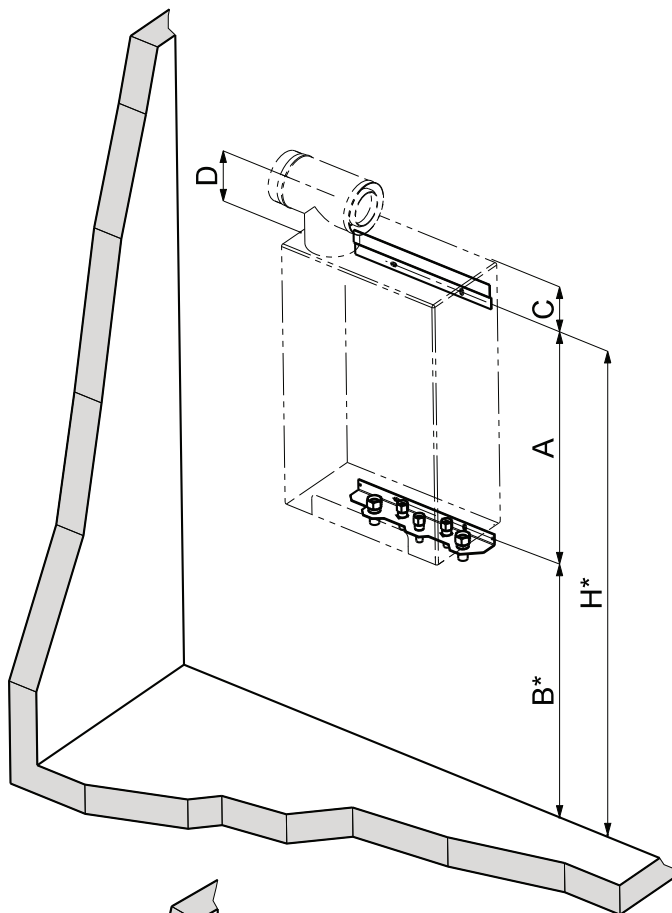
(Dimensions in mm)



- 1 Gas connection D15 (for locking ring fitting, on site)
- 2 Return (for locking ring fitting, on site)
- 3 Flow (for locking ring fitting, on site)

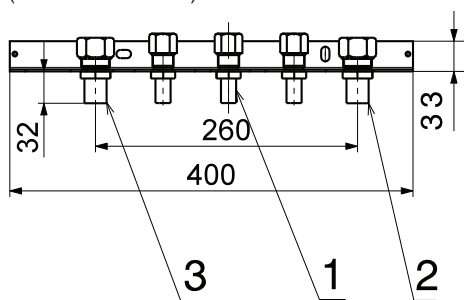
TopGas® classic type	TopVal type	A	B*	H*	C	D
(12)	(130)	518	1052	1570	130	175
	(160)	518	1219	1737	130	175
(18)	(130)	578	1052	1630	130	175
	(160)	578	1219	1797	130	175
(24,30)	(130)	638	1052	1690	130	175
	(160)	638	1219	1857	130	175

* Measures for drill hole



Visible console for preinstallation with mounting frame

(Dimensions in mm)



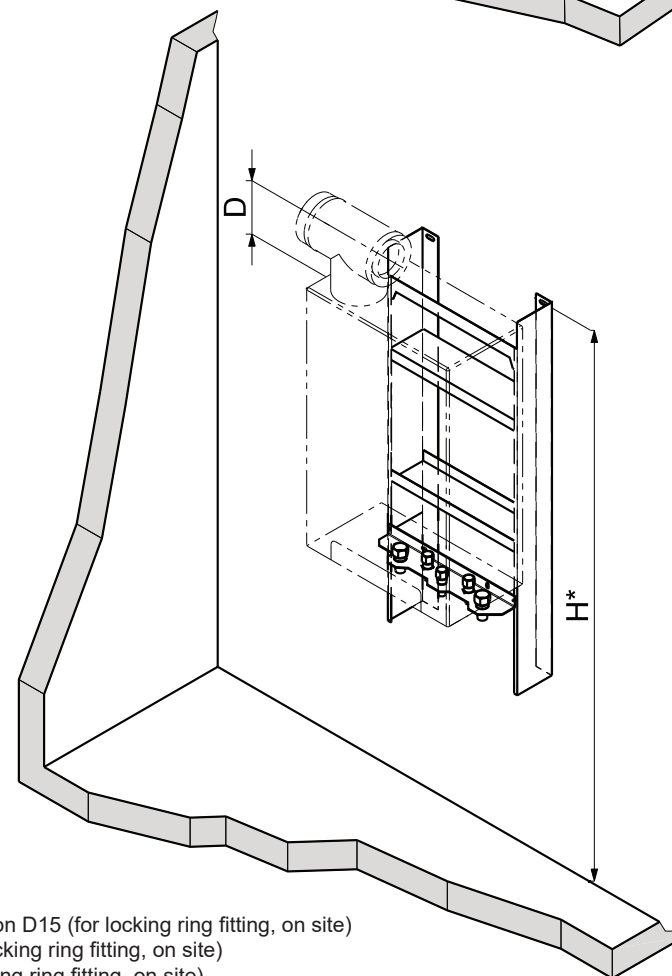
With mounting frame MR50

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 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 D15 (for locking ring fitting, on site)
- 2 Return (for locking ring fitting, on site)
- 3 Flow (for locking ring 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, ...) 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
- 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 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

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

Combustion air

The supply of combustion air must be guaranteed. There must be no possibility to close the air supply opening. An air pipe $D = 80$ for direct combustion air (air-exhaust system) can be directly connected to the boiler.

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 cm² or 2 x 75 cm² cross-section is necessary for of boiler output up to 50 kW. For each further kW output 2 cm² more cross-section must be provided.
- **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.

Gas connection

Commissioning

- Stat-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 flow pressure at the boiler inlet: natural gas min. 17.4 mbar, max. 50 mbar. Propane min. 25 mbar, max. 50 mbar.

Sludge separator

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

Pump after-run time

- 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).

Minimum quantity of rotating water

- Depending upon type of boiler different minimum quantities of rotating water are demanded. See also technical data.
- During the burner mode the circulating pump must always be in function and the minimum heating water circulation must be guaranteed.

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 PVC
 - pipes made from polyethylene (PE)
 - pipes made from ABS or ASA

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.

Expansion tank

- **An adequately dimensioned expansion tank must be provided.**
- The expansion tank has to be installed
- at the connection of expansion tank at the connection set 3, 4 or 10 (pump intake side) (see "Dimensions").
- Starting from 70 °C a connecting container is necessary.

Noise level

- The sound **power** level value is dependent on local and spacial circumstances.
- The sound **pressure** level is dependent on the installation conditions and can e.g. be 10 to 15 dB(A) lower than the sound **power** level at a distance of 1 m.

Looking for the appropriate hydraulic schematic?

Please contact your local Hoval partner.