

Hoval UltraGas® 2 (125-1550)

Floor-standing gas condensing boiler

- Floor-standing gas condensing boiler
- Combustion chamber made of stainless steel
- Maximum flue gas condensation by secondary heating surfaces made of **TurboFer** hybrid stainless steel composite pipes;
- flue gas side: stainless steel/aluminium
water side: stainless steel
- Thermal insulation with mineral wool mat
- Water pressure sensor:
 - Fulfills 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 cased with steel plates, red powder-coated
- Heating connections incl. counter flanges, screws and seals backwards for:
 - flow
 - return - high temperature
 - return - low temperature
- **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
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- Rast-5 basic plug set



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)	67-302
(350)	73-350
(400)	85-401
(450)	96-453
(530)	110-533
(620)	136-622
(700)	146-703
(800)	166-804
(1000)	205-999
(1100)	229-1112
(1300)	269-1320
(1550)	324-1550

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

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

- UltraGas® 2 (125-450)**
 - 1 module expansion and 1 controller module
- or**
- 2 controller modules

UltraGas® 2 (530-1100):

- 4 controller modules/module expansions

UltraGas® 2 (1300,1550):

- 6 controller modules/module expansions

Boiler permissions

CE product ID No.
UltraGas® 2 (125-1550) CE-0085DL0175

Availability:

UltraGas® 2 (530-1550)
Available starting 1 July 2021

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, casing and insulation separately packed and delivered

On-site

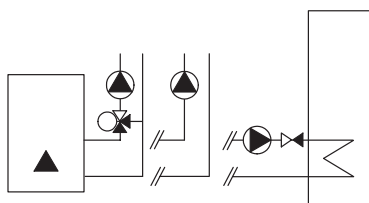
- Mounting of insulation, casing and control panel
- Mounting of boiler feet

Floor-standing gas condensing boiler



Availability:

UltraGas® 2 (530-1550)
Available starting 1 July 2021



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 accounting 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, casing and thermal insulation separately packed

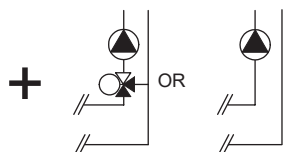
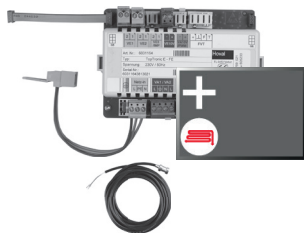
UltraGas® 2 type	Nominal heat output at 50/30 °C kW ¹⁾	Operating pressure bar
(125)	25-126	6
(150)	35-151	6
(190)	38-191	6
(230)	51-233	6
(300)	67-302	6
(350)	73-350	6
(400)	85-401	6
(450)	96-453	6
(530)	110-533	6
(620)	136-622	6
(700)	146-703	6
(800)	166-804	6
(1000)	205-999	6
(1100)	229-1112	6
(1300)	269-1320	6
(1550)	324-1550	6

¹⁾ kW = modulation range

Part No.

7018 420
7018 421
7018 422
7018 423
7018 424
7018 425
7018 426
7018 427
7018 428
7018 429
7018 410
7018 430
7018 547
7018 419
7018 432
7018 433

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



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

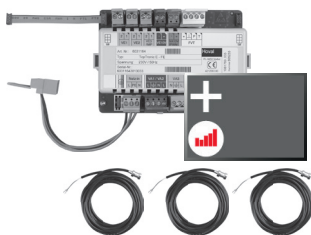
Consisting of:

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

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

incl. energy balancing in each case

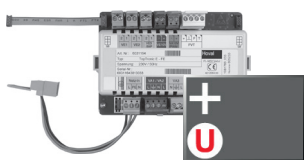
Consisting of:

- Fitting accessories
- 3 contact sensors
- ALF/2P/4/T L = 4.0 m
- Plug set FE module

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.

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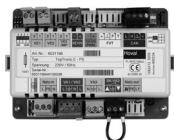
Accessories for TopTronic® E



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"

Accessories

Part No.



Flow temperature switch
for under floor heating (1 guard per heating circuit) 15-95 °C, differential gap 6 K, capillary tube 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

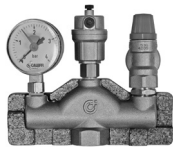
242 902

Set clamp-on thermostat *RAK-TW1000.S*
Thermostat with strap,
with cable (4 m) and plug

6033 745

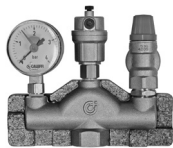
Immersion thermostat *RAK-TW1000.S SB 150*
Thermostat with pocket ½" - depth of
immersion 150 mm, brass nickel-plated

6010 082



Safety set DN 25
complete with safety valve DN32 (3 bar)
Pressure gauge and automatic
aspirator with barrier
Connection: 1" internal thread.

6018 709



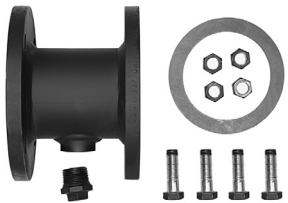
Safety set DN 32
complete with safety valve DN 32 (3 bar).
Pressure gauge and automatic
aspirator with barrier.
Connection 1¼" internal thread.

6018 710



Fitting pipe flow

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 tem-
perature limiter, a maximum pressure limiter
as well as a system flow sensor for flow
temperature regulation and
- for connection of an expansion tank
on the return



Fitting pipe return

Dimension	Suitable for UltraGas® 2	Connection
DN 65	(125-230)	flow
DN 65	(125-230)	return
DN 100	(300-700)	flow
DN 100	(300-700)	return
DN 125	(800-1100)	flow
DN 125	(800-1100)	return
DN 150	(1300,1550)	flow
DN 150	(1300,1550)	return

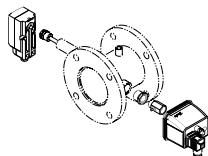
6053 408
6023 108
6053 409
6023 110
6055 078
6023 112
6055 079
6051 680



System flow sensor
for installation in the fitting pipe for
flow temperature control

6053 398

Accessories

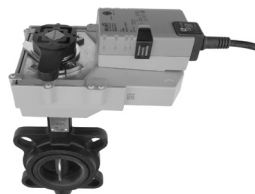


Safety armature set

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)



Hydraulic butterfly valve

for direct installation on the flow and/or return of the boiler.

For 24 V, pre-wired.

Operating method: continuously controlling (2 10 V)

UltraGas® 2 (125-230)	DN 65
UltraGas® 2 (300-700)	DN 100
UltraGas® 2 (800-1100)	DN 125
UltraGas® 2 (1300,1550)	DN 150

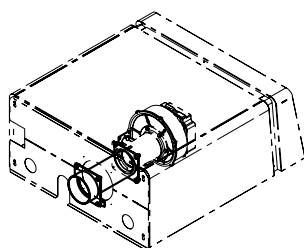
6051 903

6050 605

6050 606

6050 607

6051 891



Connection for direct combustion air input

Must not be combined with motorised air intake damper

UltraGas® 2 (125,150)
UltraGas® 2 (190,230)
UltraGas® 2 (300,350)
UltraGas® 2 (400,450)
UltraGas® 2 (530-700)
UltraGas® 2 (800-1100)
UltraGas® 2 (1300,1550)

6052 548

6052 550

6053 096

6052 844

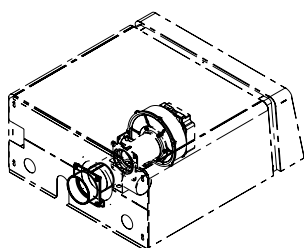
6053 779

6053 781

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 input

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

UltraGas® 2 (125,150)
UltraGas® 2 (190,230)
UltraGas® 2 (300,350)
UltraGas® 2 (400,450)
UltraGas® 2 (530-700)
UltraGas® 2 (800-1100)
UltraGas® 2 (1300,1550)

6052 847

6052 848

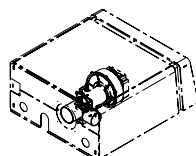
6053 097

6052 849

6053 780

6053 782

6052 849



Motorised air intake suction flap DN 110

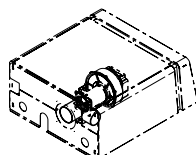
for UltraGas® (125-350),

UltraGas® 2 (125-350)

For cascading boiler systems with a common flue gas line.

Complete with cabling

6015 196



Motorised air intake suction flap DN 180

for UltraGas® (400-1550),

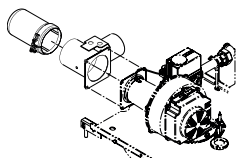
UltraGas® 2 (400-1550)

For cascading boiler systems with a common flue gas line.

Complete with cabling

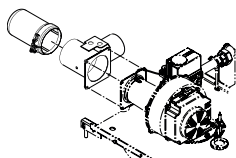
6015 197

Accessories



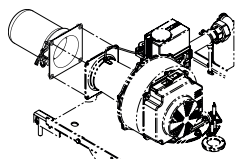
Connection protection filter
for UltraGas® 2 (125-700)
for assembly on air intake damper
for filtering the combustion air
in the building phase
Pore width of the filter < 50 µm

6052 151



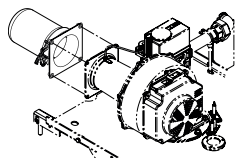
Connection protection filter
for UltraGas® 2 (800-1550)
for assembly on air intake damper
for filtering the combustion air
in the building phase
Pore width of the filter < 50 µm

6052 152



Connection protection filter
for UltraGas® 2 (125-700)
for installation on the air suction
socket of the Venturi for filtering
the combustion air in the building phase
Pore width of the filter < 50 µm

6052 283



Connection protection filter
for UltraGas® 2 (800-1550)
for installation on the air suction
socket of the Venturi for filtering
the combustion air in the building phase
Pore width of the filter < 50 µm

6052 284



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
Max. inlet pressure 100 mbar

Type	Connection
70612/6B	Rp ¾"
70602/6B	Rp 1"
70604/6B	Rp 1 ¼"
70603/6B	Rp 1 ½"
70631/6B	Rp 2"
70610F/6B	DN 65

2007 995

2007 996

2054 495

2007 997

2007 998

2007 999



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

6034 556

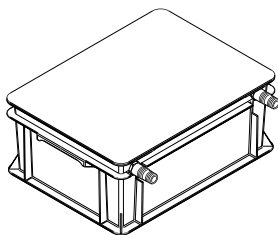


Gas pipe compensator 1½"
for UltraGas® (200-350),
UltraGas® (400D-700D),
UltraGas® 2 (190,230),
UltraGas® 2 D (380,460)
for compensating for connection
tolerances in the gas pipe

6034 557

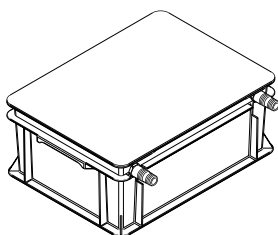
Condensate drainage to UltraGas® 2

Placed under the boiler



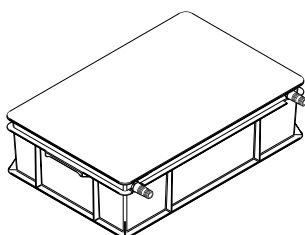
Neutralisation box HNB-0400
for UltraGas® 2 (125-400)
Condensate drain into a lower
drainage duct.
Neutralisation granulate: 3 kg
Connection hose: 2 m
Service life up to 1 year,
depending on the boiler operating mode
Positioning behind or under the boiler
One neutralisation box per boiler

6054 792



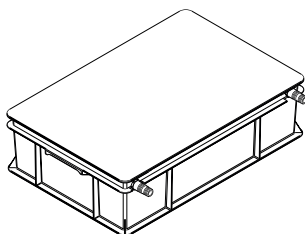
Neutralisation box HNB-0800
for UltraGas® 2 (450-800)
Condensate drain into a lower
drainage duct.
Neutralisation granulate: 6 kg
Connection hose: 2 m
Service life up to 1 year,
depending on the boiler operating mode.
Positioning behind or under the boiler
One neutralisation box per boiler

6054 793



Neutralisation box HNB-1200
for UltraGas® 2 (1000,1100)
Condensate drain into a lower
drainage duct.
Neutralisation granulate: 9 kg
Connection hose: 2 m
Service life up to 1 year,
depending on the boiler operating mode
Positioning behind or under the boiler
One neutralisation box per boiler

6054 794



Neutralisation box HNB-1600
for UltraGas® 2 (1300,1550)
Condensate drain into a lower
drainage duct.
Neutralisation granulate: 12 kg
Connection hose: 2 m
Service life up to 1 year,
depending on the boiler operating mode
Positioning behind or under the boiler
One neutralisation box per boiler

6054 795



Condensate pump
for transporting condensation water
into a higher drainage duct.
Including connection line,
completely wired,
cable and plug for connection
to the boiler controller
max. transport height: 3.5 m
Delivery rate up to 294 l/h
combinable with neutralisation box
can be mounted in boiler socket

6034 771



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

Hoval UltraGas® 2 (125-1550)

Type		(125)	(150)	(190)	(230)
• Nominal heat output at 80/60 °C, natural gas	kW	21-114	33-139	35-177	47-218
• Nominal heat output at 50/30 °C, natural gas	kW	25-126	35-151	38-191	51-233
• Nominal heat output at 80/60 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat output at 50/30 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat input with natural gas ¹⁾	kW	23-116	32-142	35-179	47-223
• Nominal heat input with propane ²⁾	kW	-	-	-	-
• 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 _(H2O))	l	207	195	276	265
• Flow resistance boiler		see diagram			
• Minimum circulation water quantity	l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)	kg	378	400	490	510
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) ³⁾	%	98.6/88.9	97.6/88.1	98.5/88.7	97.7/88.1
• Boiler efficiency at 30 % partial load (NCV/GCV) ³⁾	%	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
• NOx class (EN 15502)		6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx mg/kWh	25	28	33	37
• Carbon monoxide emissions at 50/30 °C ⁴⁾	CO mg/Nm ³	31	21	25	13
• O ₂ content in flue gas min./max. output ⁵⁾	%	5.9/5.6	5.5/6.0	5.9/6.0	6.0/5.9
• CO ₂ content in flue gas at min./max. output	%	8.6/8.7	8.8/8.5	8.6/8.5	8.5/8.6
• Heat loss in standby mode	Watt	380	380	510	510
• 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
- Liquid gas	mbar	-	-	-	-
• 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	2.3-11.6	3.2-14.2	3.5-18.0	4.7-22.4
- Natural gas LL (Wo = 12.4 kWh/m ³) NCV = 8.57 kWh/m ³	m ³ /h	2.7-13.5	3.7-16.6	4.1-20.9	5.5-26.0
- Propane (NCV = 25.9 kWh/m ³)	m ³ /h	-	-	-	-
• Operating voltage	V/Hz	1x230/50	1x230/50	1x230/50	1x230/50
• 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)	-	-	-	-
- Sound pressure level heating noise (depending on installation conditions) ⁶⁾	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.)	4.2	4.2	4.2	4.2
• Construction		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 ⁵⁾	°C	64	65	68	69
- Flue gas temperature at max. nominal heat output and 50/30 °C ⁵⁾	°C	43	45	46	47
- Flue gas temperature at min. nominal heat output and 50/30 °C ⁵⁾	°C	29	28	29	29
- Max. permissible temperature of the combustion air	°C	48	48	48	48
- Volume flow of combustion air	Nm ³ /h	154	180	232	280
- Maximum supply pressure for supply air and flue gas line	Pa	120	120	130	130
- Maximum draught/underpressure 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 resetting.

²⁾ Data related to NCV.

³⁾ Conversion acc. to EN 15502-1, Appendix J

⁴⁾ Data related to 3 % of O₂

⁵⁾ Technical data ascertained during the approval test

⁶⁾ Compare notice for engineering.

Type		(300)	(350)	(400)	(450)
• Nominal heat output at 80/60 °C, natural gas	kW	62-283	70-332	80-378	87-429
• Nominal heat output at 50/30 °C, natural gas	kW	67-302	73-350	85-401	96-453
• Nominal heat output at 80/60 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat output at 50/30 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat input with natural gas ¹⁾	kW	62-291	70-338	78-385	89-437
• Nominal heat input with propane ²⁾	kW	-	-	-	-
• 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 _(H2O))	l	522	496	483	457
• Flow resistance boiler		see diagram			
• Minimum circulation water quantity	l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)	kg	770	810	830	850
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) ³⁾	%	98.2/88.5	98.1/88.5	98.3/88.6	98.3/88.7
• Boiler efficiency at 30 % partial load (NCV/GCV) ³⁾	%	109.2/98.4	108.4/97.7	108.3/97.6	108.3/97.9
• Room heating energy efficiency					
- without control	ηs %	93	93	93	-
- with control	ηs %	95	95	95	-
- with control and room sensor	ηs %	97	97	97	-
• NOx class (EN 15502)		6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx mg/kWh	31	38	41	37
• Carbon monoxide emissions at 50/30 °C ⁴⁾	CO mg/Nm ³	21	21	26	31
• O ₂ content in flue gas min./max. output ⁵⁾	%	6.0/5.9	6.0/5.9	6.0/5.9	5.9/5.8
• CO ₂ content in flue gas at min./max. output	%	8.5/8.6	8.6/8.6	8.5/8.6	8.6/8.6
• Heat loss in standby mode	Watt	750	750	750	750
• 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
- Liquid gas	mbar	-	-	-	-
• 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	6.2-29.2	7.0-33.9	7.8-38.6	8.9-43.8
- Natural gas LL (Wo = 12.4 kWh/m ³) NCV = 8.57 kWh/m ³	m ³ /h	7.2-34.0	8.2-39.4	9.1-44.9	10.4-51.0
- Propane (NCV = 25.9 kWh/m ³)	m ³ /h	-	-	-	-
• Operating voltage	V/Hz	1x230/50	1x230/50	1x230/50	1x230/50
• Electrical power consumption min./max.	Watt	42/260	44/292	53/560	63/580
• Standby	Watt	5	8	5	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)	-	69	-	76
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)	dB(A)	-	-	-	-
- Sound pressure level heating noise (depending on installation conditions) ⁶⁾	dB(A)	-	59	-	66
• Condensate quantity (natural gas) at 50/30 °C	l/h	26	31	35	40
• pH value of the condensate	(approx.)	4.2	4.2	4.2	4.2
• Construction		B23P, C53, C63			
• Flue gas system					
- Temperature class		T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)	kg/h	460	538	608	695
- Flue gas mass flow at min. nominal heat input (dry)	kg/h	98	112	123	142
- Flue gas temperature at max. nominal heat output and 80/60 °C ⁵⁾	°C	68	66	67	69
- Flue gas temperature at max. nominal heat output and 50/30 °C ⁵⁾	°C	47	46	48	48
- Flue gas temperature at min. nominal heat output and 50/30 °C ⁵⁾	°C	28	28	29	29
- Max. permissible temperature of the combustion air	°C	48	48	48	48
- Volume flow of combustion air	Nm ³ /h	376	440	497	569
- Maximum supply pressure for supply air and flue gas line	Pa	130	130	130	130
- Maximum draught/underpressure 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 resetting.

²⁾ Data related to NCV.

⁵⁾ Technical data ascertained during the approval test

³⁾ Conversion acc. to EN 15502-1, Appendix J

⁶⁾ Compare notice for engineering.

⁴⁾ Data related to 3 % of O₂

Type		(530)	(620)	(700)	(800)
• Nominal heat output at 80/60 °C, natural gas	kW	100-497	125-580	132-653	150-743
• Nominal heat output at 50/30 °C, natural gas	kW	110-533	136-622	146-703	166-804
• Nominal heat output at 80/60 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat output at 50/30 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat input with natural gas ¹⁾	kW	101-506	124-591	134-668	151-759
• Nominal heat input with propane ²⁾	kW	-	-	-	-
• 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 _(H2O))	l	571	536	509	831
• Flow resistance boiler		see diagram			
• Minimum circulation water quantity	l/h	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)	kg	978	1050	1100	1370
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) ³⁾	%	98.2/88.5	98.2/88.5	98.2/88.5	98.3/88.6
• Boiler efficiency at 30 % partial load (NCV/GCV) ³⁾	%	109.1/98.3	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 %	-	-	-	-
• NOx class (EN 15502)		6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx mg/kWh	33	33	40	36
• Carbon monoxide emissions at 50/30 °C ⁴⁾	CO mg/Nm ³	20	24	26	23
• O ₂ content in flue gas min./max. output ⁵⁾	%	5.9/5.9	5.9/6.0	6.0/5.7	6.0/5.8
• CO ₂ content in flue gas at min./max. output	%	8.6/8.6	8.5/8.5	8.5/8.7	8.5/8.6
• Heat loss in standby mode	Watt	1000	1000	1000	1200
• Dimensions		see dimensional drawing			
• Gas flow pressure min./max.					
- Natural gas E/LL	mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Liquid gas	mbar	-	-	-	-
• 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	10.1-50.8	12.4-59.3	13.4-67.0	15.1-76.1
- Natural gas LL (Wo = 12.4 kWh/m ³) NCV = 8.57 kWh/m ³	m ³ /h	11.8-59.0	14.5-69.0	15.6-77.9	17.6-88.6
- Propane (NCV = 25.9 kWh/m ³)	m ³ /h	-	-	-	-
• Operating voltage	V/Hz	1x230/50	1x230/50	1x230/50	1x230/50
• Electrical power consumption min./max.	Watt	67/805	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)	77	75	76	78
- Flue gas noise radiated from the mouth (DIN 45635 part 47) (room air dependent/independent of room air)	dB(A)	-	-	-	-
- Sound pressure level heating noise (depending on installation conditions) ⁶⁾	dB(A)	67	65	66	-
• Condensate quantity (natural gas) at 50/30 °C	l/h	39	51	48	57
• pH value of the condensate	approx.	4.2	4.2	4.2	4.2
• Construction		B23P, C53, C63			
• Flue gas system					
- Temperature class		T120	T120	T120	T120
- Flue gas mass flow at max. nominal heat input (dry)	kg/h	800	933	1055	1198
- Flue gas mass flow at min. nominal heat input (dry)	kg/h	159	196	211	238
- Flue gas temperature at max. nominal heat output and 80/60 °C ⁵⁾	°C	67	68	69	66
- Flue gas temperature at max. nominal heat output and 50/30 °C ⁵⁾	°C	45	47	49	44
- Flue gas temperature at min. nominal heat output and 50/30 °C ⁵⁾	°C	28	28	29	28
- Max. permissible temperature of the combustion air	°C	48	48	48	48
- Volume flow of combustion air	Nm ³ /h	654	764	863	981
- Maximum supply pressure for supply air and flue gas line	Pa	130	130	130	130
- Maximum draught/underpressure 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 resetting.

²⁾ Data related to NCV.

⁵⁾ Technical data ascertained during the approval test

³⁾ Conversion acc. to EN 15502-1, Appendix J

⁶⁾ Compare notice for engineering.

⁴⁾ Data related to 3 % of O₂

Type		(1000)	(1100)	(1300)	(1550)
• Nominal heat output at 80/60 °C, natural gas	kW	185-926	203-1038	241-1230	297-1447
• Nominal heat output at 50/30 °C, natural gas	kW	205-999	229-1112	269-1320	324-1550
• Nominal heat output at 80/60 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat output at 50/30 °C, propane ²⁾	kW	-	-	-	-
• Nominal heat input with natural gas ¹⁾	kW	187-943	206-1057	247-1251	297-1469
• Nominal heat input with propane ²⁾		-	-	-	-
• Operating pressure heating min./max. (PMS)	°C	1/6	1/6	1/6	1/6
• Operating temperature max. (T _{max})	l	95	95	95	95
• Boiler water content (V _(H2O))		756	718	1211	1118
• Flow resistance boiler	l/h	see diagram			
• Minimum circulation water quantity	kg	-	-	-	-
• Boiler weight (without water capacity, incl. cladding)		1540	1600	2130	2300
• Boiler efficiency at 80/60 °C in full-load operation (NCV/GCV) ³⁾	%	98.2/88.5	98.2/88.5	98.2/88.5	98.2/88.6
• Boiler efficiency at 30 % partial load (NCV/GCV) ³⁾		109.0/98.2	108.6/97.8	108.7/97.9	108.5/97.9
• Room heating energy efficiency	%				
- without control	ηs	-	-	-	-
- with control	ηs	-	-	-	-
- with control and room sensor	ηs	-	-	-	-
• NOx class (EN 15502)	mg/kWh	6	6	6	6
• Nitrogen oxide emissions (EN 15502) (GCV)	NOx mg/Nm ³	36	41	37	35
• Carbon monoxide emissions at 50/30 °C ⁴⁾	CO %	25	26	23	23
• O ₂ content in flue gas min./max. output ⁵⁾	%	6.0/5.9	6.0/5.9	6.0/5.9	6.0/6.0
• CO ₂ content in flue gas at min./max. output	Watt	8.5/8.6	8.5/8.5	8.5/8.6	8.5/8.5
• Heat loss in standby mode		1200	1200	1600	1600
• Dimensions	see dimensional drawing				
• Gas flow pressure min./max.	mbar				
- Natural gas E/LL	mbar	17.4-80	17.4-80	17.4-80	17.4-80
- Liquid gas		-	-	-	-
• Gas connection values at 15 °C/1013 mbar:	m ³ /h				
- Natural gas E (Wo = 15.0 kWh/m ³) NCV = 9.97 kWh/m ³	m ³ /h	18.8-94.6	20.7-106.0	24.8-125.5	29.8-147.3
- Natural gas LL (Wo = 12.4 kWh/m ³) NCV = 8.57 kWh/m ³	m ³ /h	21.8-110.0	24.0-123.3	28.8-146.0	34.7-171.4
- Propane (NCV = 25.9 kWh/m ³)		-	-	-	-
• Operating voltage	Watt	1x230/50	1x230/50	1x230/50	1x230/50
• Electrical power consumption min./max.	Watt	3x400/50	3x400/50	3x400/50	3x400/50
• Standby	IP	7	7	5	7
• Type of protection	°C	20	20	20	20
• Permitted ambient temperature during operation		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)	-	-	-	-
- Sound pressure level heating noise (depending on installation conditions) ⁶⁾	dB(A)	-	72	76	75
• Condensate quantity (natural gas) at 50/30 °C	approx.	68	72	100	138
• pH value of the condensate		4.2	4.2	4.2	4.2
• Construction	B23P, C53, C63				
• Flue gas system					
- Temperature class	kg/h	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)	°C	295	325	390	450
- Flue gas temperature at max. nominal heat output and 80/60 °C ⁵⁾	°C	69	70	66	68
- Flue gas temperature at max. nominal heat output and 50/30 °C ⁵⁾	°C	47	49	45	46
- Flue gas temperature at min. nominal heat output and 50/30 °C ⁵⁾	°C	28	29	29	28
- Max. permissible temperature of the combustion air	°C	48	48	48	48
- Volume flow of combustion air	Pa	1219	1366	1617	1830
- Maximum supply pressure for supply air and flue gas line	Pa	130	130	130	130
- Maximum draught/underpressure at flue gas outlet		-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 resetting.

²⁾ Data related to NCV.

³⁾ Conversion acc. to EN 15502-1, Appendix J

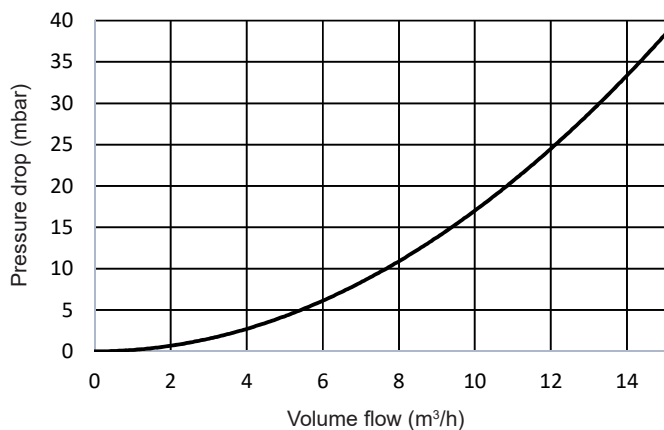
⁴⁾ Data related to 3 % of O₂

⁵⁾ Technical data ascertained during the approval test

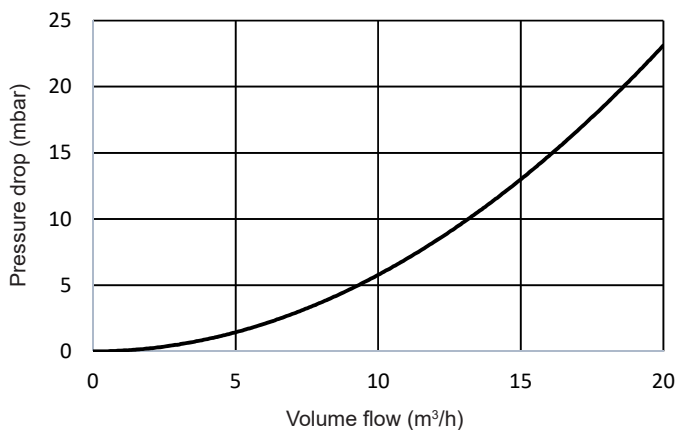
⁶⁾ Compare notice for engineering.

Flow resistance on the heating water side

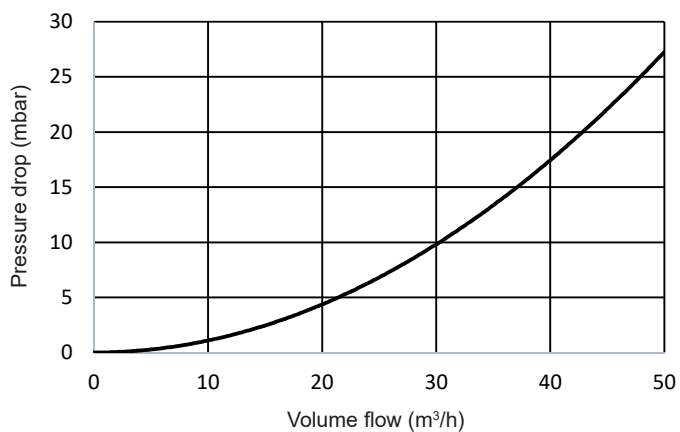
UltraGas® 2 (125,150)



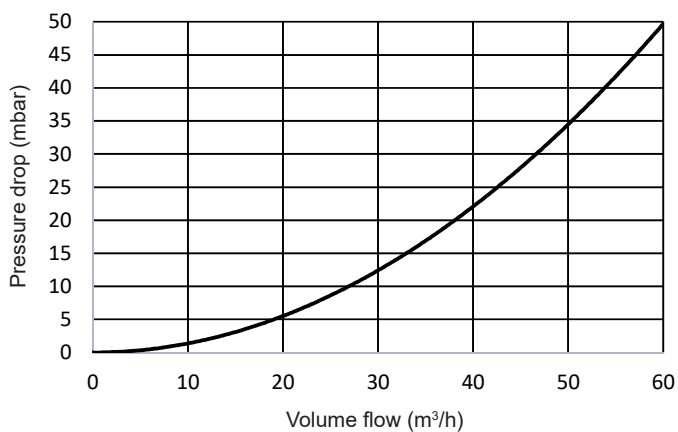
UltraGas® 2 (190,230)



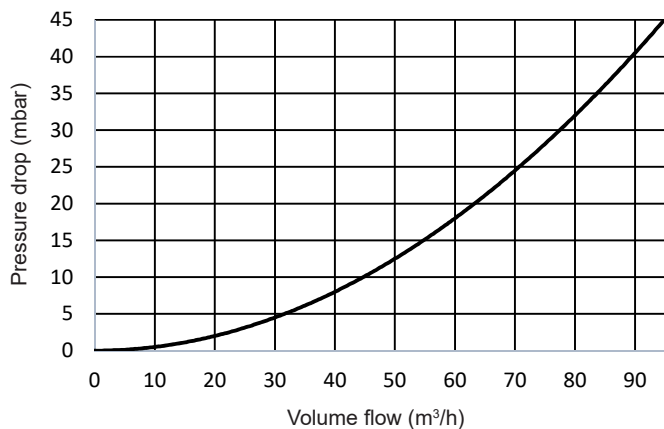
UltraGas® 2 (300-450)



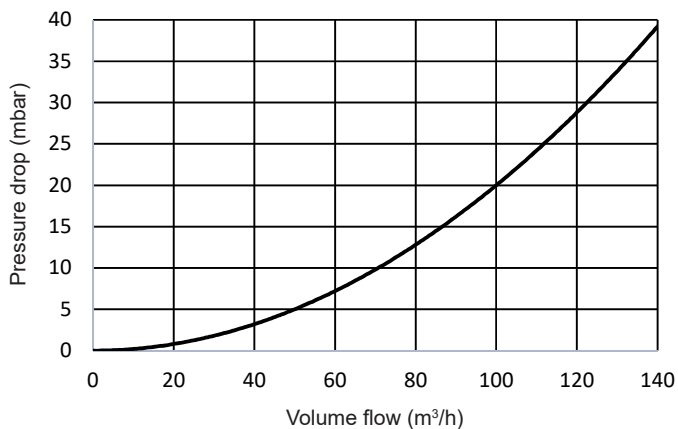
UltraGas® 2 (530-700)



UltraGas® 2 (800-1100)

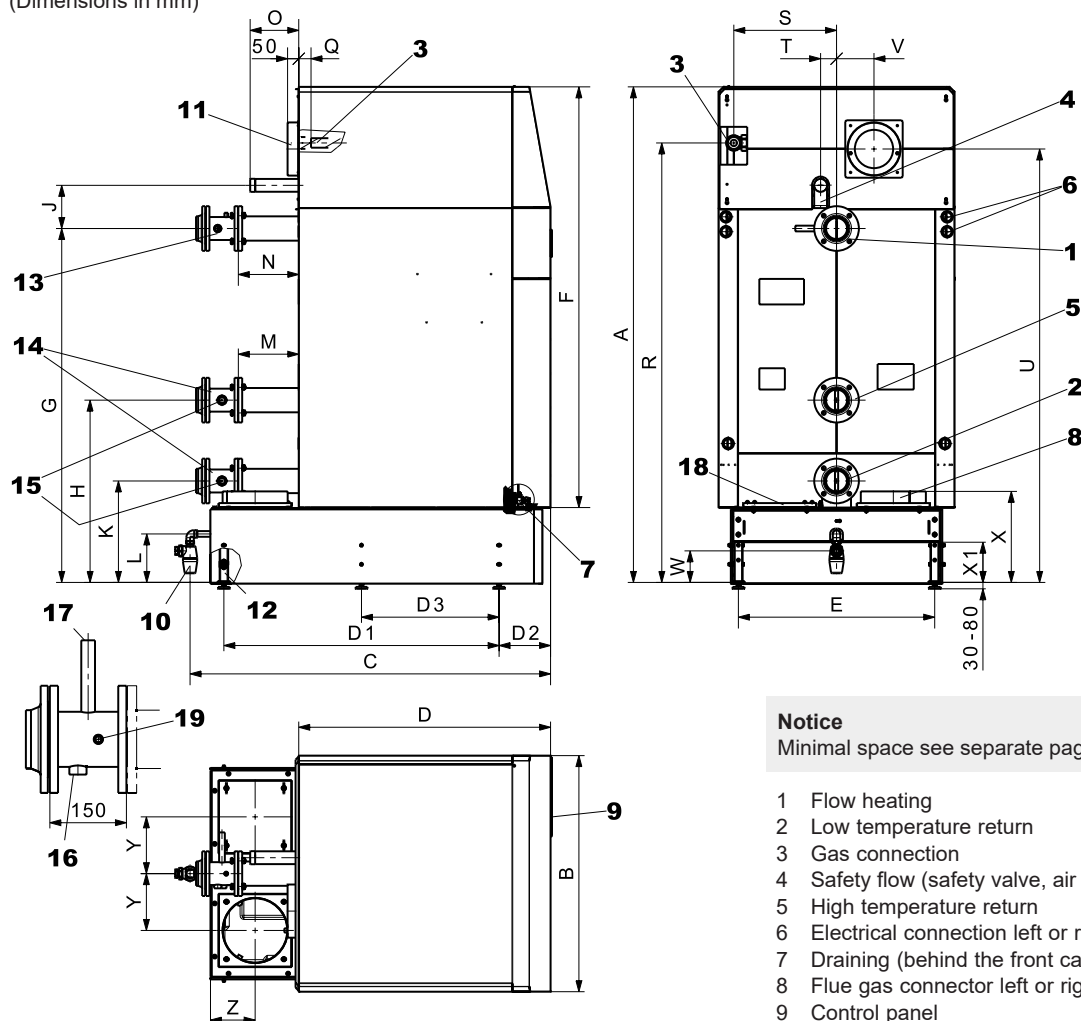


UltraGas® 2 (1300,1550)



UltraGas® 2 (125-1550)

(Dimensions in mm)



Notice

Minimal space see separate page

- 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 syphon for plastic tube
- 11 Air inlet connector (option)
- 12 Boiler feet (adjustable to 80 mm)
- 13 Assembly tube connection flow (option)
- 14 Assembly tube connection return (option)
- 15 Expansion Rp 1"
- 16 Pressure limiter Rp ¾"
- 17 Safety temperature control Rp ½"
- 18 Cleaning opening left or right
- 19 System flow sensor Rp ¼"

Type	A	B	C	D	D1	D2	D3	E	F	G	H	J	K	L	M	N	O	Q	R
(125,150)	2023	720	1154	799	754	242	-	533	1681	1579	814	122	434	234	207	207	65	192	1825
(190,230)	2068	820	1254	895	854	242	-	633	1726	1617	817	144	437	234	204	204	69	226	1878
(300,350)	2128	930	1604	1165	1204	242	-	743	1788	1652	845	169	465	231	285	285	189	58	1939
(400,450)	2198	930	1604	1165	1204	242	-	743	1858	1652	845	169	465	231	285	285	189	24	2015
(530-700)	2334	1110	1695	1184	1294	242	-	923	1982	1664	857	203	477	228	286	286	225	-2	2066
(800-1100)	2355	1290	1857	1364	1480	242	-	1103	1987	1673	888	215	508	228	378	378	225	58	2059
(1300,1550)	2495	1560	2175	1640	1790	250	895	1363	2103	1700	922	238	542	238	420	420	218	22	2164

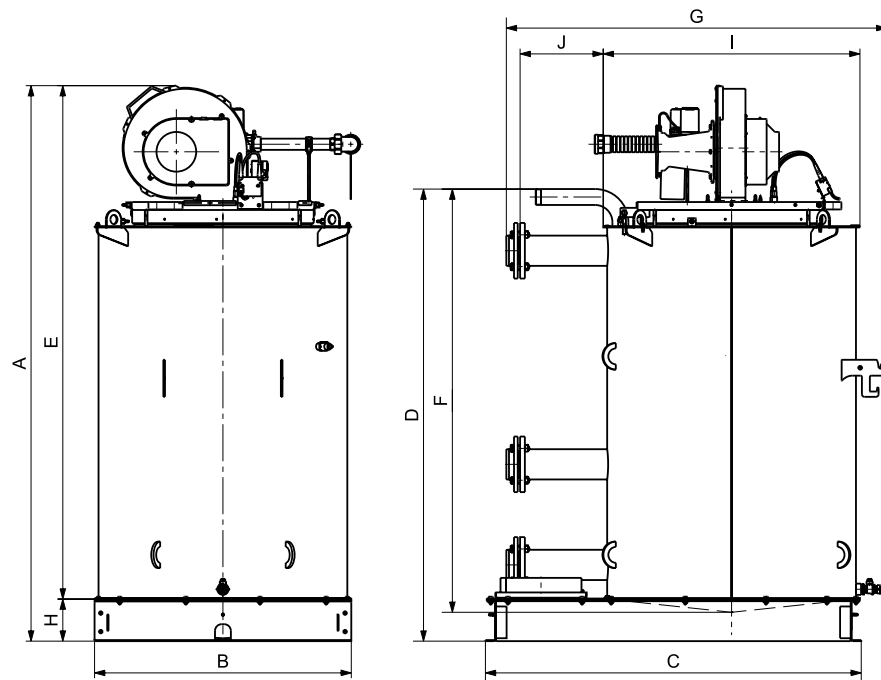
Type	S	T	U	V	W	X	X1	Y	Z	1,2,5*	3	4	8	10	11
(125,150)	318	40	1825	101	154	419	199	157	139	DN 65 / PN 6 / 4-hole	Rp 1"	R 1"	Ø 155/159	DN 25	Ø 122/125
(190,230)	371	50	1878	101	154	419	199	195	139	DN 65 / PN 6 / 4-hole	Rp 1 ½"	R 1 ¼"	Ø 155/159	DN 25	Ø 197/200
(300,350)	367	40	1940	101	151	416	196	217	184	DN 100 / PN 6 / 4-hole	Rp 2"	R 1 ½"	Ø 252/256	DN 25	Ø 197/200
(400,450)	397	40	1986	124	151	416	196	217	184	DN 100 / PN 6 / 4-hole	Rp 2"	R 1 ½"	Ø 252/256	DN 25	Ø 247/250
(530-700)	483	75	2038	176	148	428	189	267	211	DN 100 / PN 6 / 4-hole	Rp 2"	R 2"	Ø 302/306	DN 25	Ø 247/250
(800-1100)	572	100	2059	176	148	474	189	357	219	DN 125 / PN 6 / 8-hole	Rp 2"	R 2"	Ø 302/306	DN 40	Ø 247/250
(1300,1550)	621	100	2164	190	158	498	189	455	244	DN 150 / PN 6 / 8-hole	Rp 2"	R 2"	Ø 402/406	DN 40	Ø 247/250

* DN = nominal diameter, PN = nominal pressure

Installation dimensions

Boiler without casing and insulation
(Dimensions in mm)

UltraGas® 2 (125-1550)

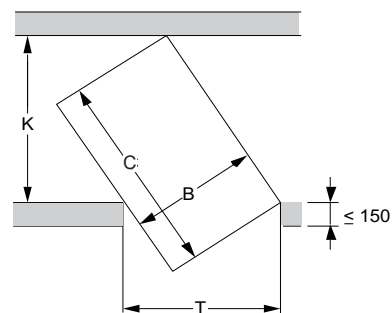


UltraGas® 2

Type	A	B	C	D
(125,150)	1765	580	880	1519
(190,230)	1818	680	980	1583
(300,350)	1882	790	1330	1649
(400,450)	1956	790	1330	1649
(530-700)	2099	970	1420	1708
(800-1100)	2120	1150	1606	1729
(1300,1550)	2255	1410	1916	1779

Required minimum width of door and corridor for boiler installation

The following values are the calculated minimum values



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

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

B = Boiler width
C = Max. boiler length
T = Door width
K = Corridor width

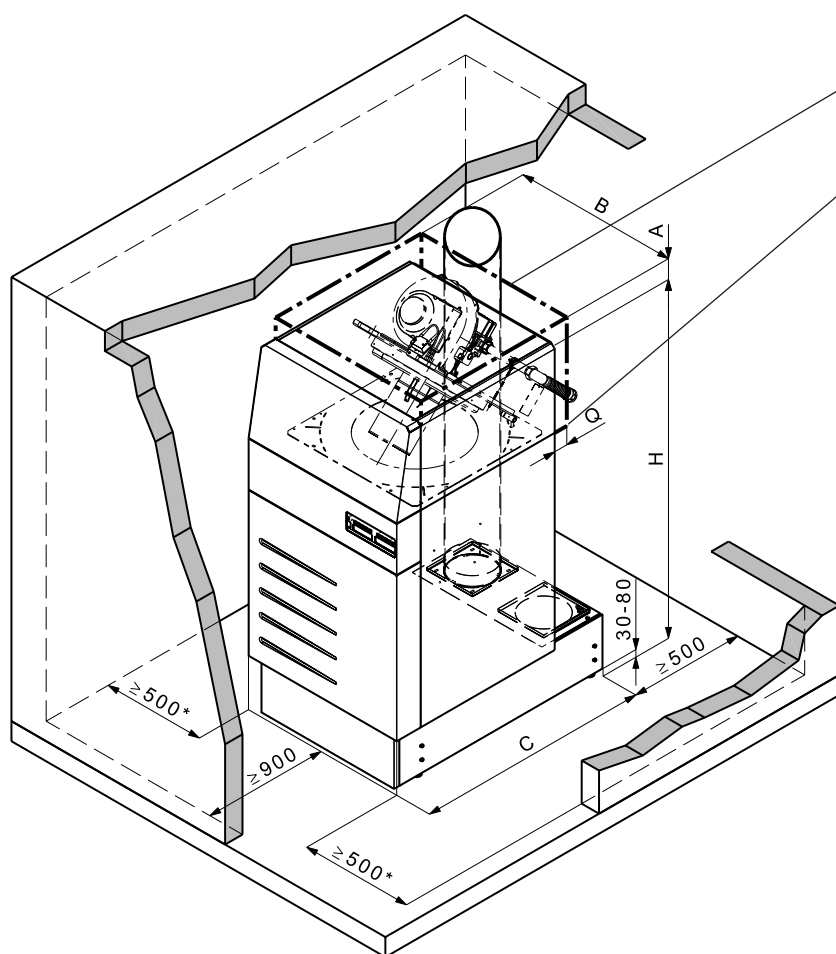
Calculation example for the necessary corridor width, door width T = 1000

UltraGas® 2 (700) $K = \frac{970}{1000} \times 1420 = \text{corridor width} \geq 1377$

Space requirements

(Dimensions in mm)

UltraGas® 2 (125-1550)



For swinging out the burner this area must remain free (see dimension table).

If the gas line is routed horizontally to the left, the minimum distance Q must be observed.

UltraGas® 2

Type	A ¹⁾	A minimal ²⁾	B	C	H ³⁾	H minimal ⁴⁾	Q
(125,150)	169	106	720	1060	2053	1933	125
(190,230)	155	71	820	1160	2098	1978	2
(300,350)	285	170	930	1510	2158	2038	65
(400,450)	230	157	930	1510	2228	2108	141
(530-700)	121	121	1110	1600	2364	2244	155
(800-1100)	280	195	1290	1786	2385	2265	119
(1300,1550)	291	154	1560	2104	2525	2405	163

¹⁾ If room height is too small: Reduction of dimension possible. See A minimal.

²⁾ **Attention!** With A minimal the burner can not be swung out completely anymore! This makes cleaning more difficult!

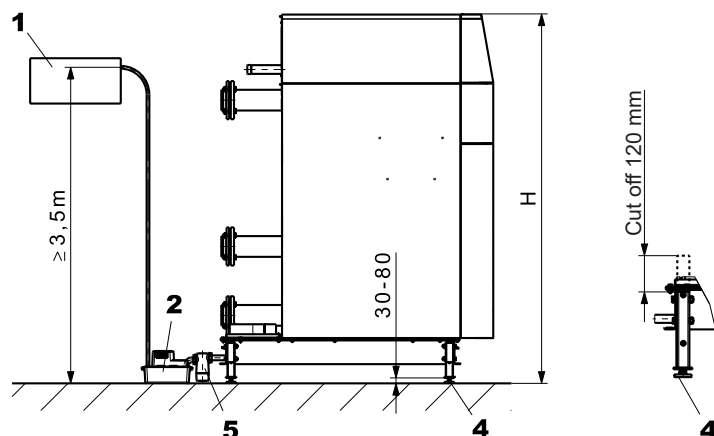
³⁾ Height value assumes adjustable feet are set to 30 mm

⁴⁾ The feet can be shortened. **Caution!** If the feet are shortened, the base cladding cannot be installed and the installer will have to fit a siphon with min. 70 mm barrier height. For details see next page.

- The boiler 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.

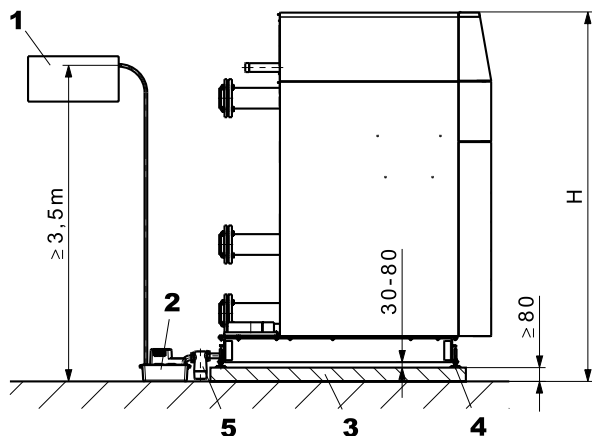
UltraGas® 2 (125-1550) with shortened boiler feet

(Dimensions in mm)



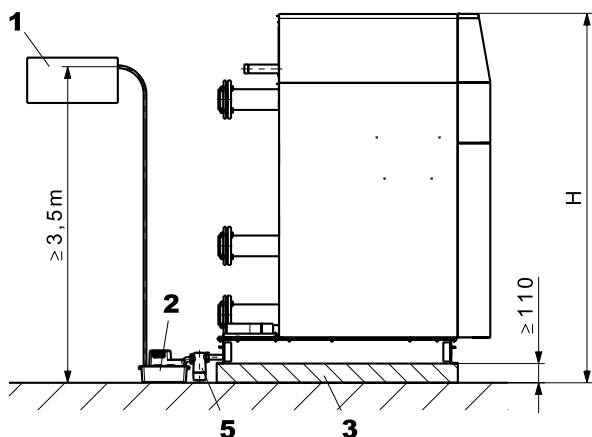
UltraGas® 2 Type	H ¹⁾
(125,150)	1933
(190,230)	1978
(300,350)	2038
(400,450)	2108
(530-700)	2244
(800-1100)	2265
(1300,1550)	2405

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



UltraGas® 2 Type	H ¹⁾
(125,150)	1934
(190,230)	1979
(300,350)	2042
(400,450)	2112
(530-700)	2255
(800-1100)	2276
(1300,1550)	2416

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



UltraGas® 2 Type	H
(125,150)	1934
(190,230)	1979
(300,350)	2042
(400,450)	2112
(530-700)	2255
(800-1100)	2276
(1300,1550)	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 refunded!

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, ÖNORM, 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/ÖVGW 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
- ÖNORM H 5195
- 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:

- For Germany VDI 2035
- For Austria ÖNORM H5195
- 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.
- 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

- Gas 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, solvents, glue and bleaching lyes. Pay attention to the Procal leaflet, corrosion through Halogen compounds.

Combustion air

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

- *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

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® (125-350) types, it is necessary to comply with the local regulations concerning the need for a gas filter.

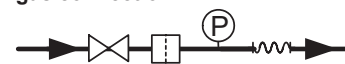
Commissioning

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

Shut-off valve

- A shut-off valve must be installed upstream of every gas boiler.

Construction of a recommended gas connection



Legend:

 Gas ball 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: min. 17.4 mbar, max. 80 mbar

Gas pressure regulator

- In boilers with a heat input in excess of 70 kW, install a pressure regulator in accordance with EN88-1 in the gas supply line directly before the boiler.

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

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.
- A siphon must be installed at the condensate outlet on the gas boiler (included in the boiler scope of delivery).
- Suitable materials for condensate drain:
 - stoneware pipes
 - pipes made from PVC
 - pipes made from polyethylene (PE)
 - pipes made from ABS or ASA

Expansion tank

- An adequately dimensioned expansion tank must be provided.
- The expansion tank has to be installed in principle at the boiler return, or at the safety flow.
- 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 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.

Allocation of gas filters for UltraGas® 2

UltraGas® 2	Gas throughput	Gas filter type	Dimension	Pressure drop gas filter (with clean filter) mbar
Type	m³/h			
(125)	11.9	70602/6B	Rp 1"	0.2
(150)	14.2	70603/6B	Rp 1 ½"	0.1
(190)	18.0	70603/6B	Rp 1 ½"	0.2
(230)	22.4	70603/6B	Rp 1 ½"	0.2
(300)	29.2	70603/6B	Rp 1 ½"	0.3
(350)	33.9	70603/6B	Rp 1 ½"	0.4
(400)	38.6	70631/6B	Rp 2"	0.4
(450)	43.8	70631/6B	Rp 2"	0.3
(530)	50.8	70631/6B	Rp 2"	0.5
(620)	59.3	70631/6B	Rp 2"	0.6
(700)	67.0	70631/6B	Rp 2"	0.7
(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"	1.7
(1300)	125.5	70610F/6B	DN 65	1.4
(1550)	147.3	70610F/6B	DN 65	1.9

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 in 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 + supply air)			
Type	Flue gas dim. mm	Designation	Total pipe length in m (flue gas + supply air)			
UltraGas® 2	internal	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		43	42	41	40
(530)	302		44	43	42	41
(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

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.