

## Datasheet

Part no. and prices: See pricelist



### **VITOPLEX 200** Type SX2A

#### **Low temperature oil/gas boiler**

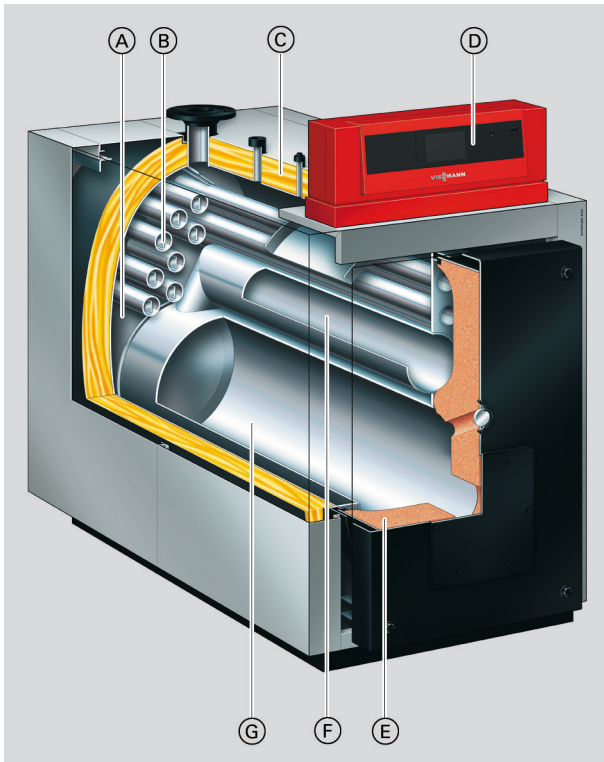
- Three-pass boiler
- For operation with modulating boiler water temperature

#### **Information for type SX2A, 90 to 350 kW:**

In accordance with the Ecodesign Directive for Heating Appliances and Water Heaters (Dir. 2009/125/EC), Implementing Regulation (EU) No. 813/2013 and (EU) No. 814/2013, these boilers may not be sold and used within the EU for the purpose of generating space heating and domestic hot water. A sale is subject to the proviso of exclusive use for purposes not included in the regulations stated above.

## Benefits at a glance

- Economical and environmentally responsible thanks to modulating boiler water temperature
- Standard seasonal efficiency [to DIN] for operation with fuel oil: 89 % (H<sub>s</sub>) [gross cv]
- Optional stainless steel flue gas/water heat exchanger for higher standard seasonal efficiency [to DIN], utilising the condensing effect
- Three-pass boiler with low combustion chamber loading, resulting in clean combustion with low emissions
- Wide water galleries and large water content provide excellent natural circulation and reliable heat transfer.
- Integral Therm-Control start-up system for easy hydraulic connection – no shunt pump or return temperature raising facility are required.
- Compact design for easy handling into boiler rooms and space saving positioning – important for modernisation projects
- Fastfix installation system for control unit and thermal insulation
- Easy to use Vitotronic control unit with colour touchscreen
- Integral WiFi for service interface
- Economical and safe operation of the heating system through the Vitotronic control system with communication capability which, in conjunction with Vitogate 300 (accessories), enables integration into building management systems.
- Vitocontrol control panel can be supplied on request.



- Ⓐ Wide water galleries and large water content ensure excellent natural circulation and easy hydraulic connection.
- Ⓑ Hot gas flue (third pass)
- Ⓒ Highly effective thermal insulation
- Ⓓ Vitotronic control unit with colour touchscreen
- Ⓔ Thermal insulation on boiler door
- Ⓕ Hot gas flue (second pass)
- Ⓖ Combustion chamber

## Boiler specification

### Specification

Rated heating output	kW	90	120	150	200	270	350	440	560	
Rated heat input	kW	98	130	163	217	293	380	478	609	
<b>CE designation</b> – According to Efficiency Directive – According to Gas Appliances Directive		CE-0085BQ0020 CE-0085BQ0020						—	—	
<b>Permiss. flow temperature</b> (= safety temperature)	°C	110 (up to 120 °C on request)								
<b>Permiss. operating temperature</b>	°C	95								
<b>Permiss. operating pressure</b>	bar kPa	4 400								
<b>Pressure drop on the hot gas side</b>	Pa mbar	60 0.6	80 0.8	100 1.0	200 2.0	180 1.8	310 3.1	280 2.8	400 4.0	
<b>Boiler body dimensions</b>										
Length (dim. q) <sup>*1</sup>	mm	1195	1400	1385	1580	1600	1800	1825	1970	
Width (dim. d)	mm	575	575	650	650	730	730	865	865	
Height (incl. connectors) (dim. t)	mm	1145	1145	1180	1180	1285	1285	1455	1455	
<b>Total dimensions</b>										
Total length (dim. r)	mm	1260	1460	1445	1640	1660	1860	1885	2030	
Total width (dim. e)	mm	755	755	825	825	905	905	1040	1040	
Total height (dim. b)	mm	1315	1315	1350	1350	1460	1460	1625	1625	
Service height (control unit) (dim. a)	mm	1485	1485	1520	1520	1630	1630	1795	1795	
<b>Height</b>										
– Adjustable anti-vibration feet	mm	28	28	28	28	28	28	28	28	
– Anti-vibration boiler supports (under load)	mm	–	–	–	–	–	37	37	37	
<b>Foundation</b>										
Length	mm	1000	1200	1200	1400	1400	1650	1650	1800	
Width	mm	760	760	830	830	900	900	1040	1040	
<b>Combustion chamber diameter</b>	mm	380	380	400	400	480	480	570	570	
<b>Combustion chamber length</b>	mm	800	1000	1000	1200	1200	1400	1400	1550	
<b>Weight of boiler body</b>	kg	315	365	415	460	585	700	895	1100	
<b>Total weight</b>	kg	360	410	465	510	635	760	960	1170	
Boiler with thermal insulation and boiler control unit										
<b>Boiler water capacity</b>	Litres	180	210	255	300	400	445	600	635	
<b>Boiler connections</b>										
Boiler flow and return	PN 6 DN	65	65	65	65	65	80	100	100	
Safety connection (safety valve) (male thread)	R	1¼	1¼	1¼	1¼	1¼	1¼	1½	1½	
Drain (male thread)	R	1¼								
<b>Flue gas parameters<sup>*2</sup></b>										
Temperature (at 60 °C boiler water temperature)										
– At rated heating output	°C	180								
– At partial load	°C	125								
Temperature (at 80 °C boiler water temperature)	°C	195								
Flue gas mass flow rate		1.5225 x combustion output in kW 1.5 x combustion output in kW								
– With natural gas	kg/h									
– With EL fuel oil	kg/h									
<b>Flue gas connection</b>	Ø mm	180	180	200	200	200	200	250	250	
<b>Standard seasonal efficiency [to DIN]</b> (for operation with fuel oil) For heating system temperature 75/60 °C	%	89 (H <sub>s</sub> ) [gross cv]								
<b>Standby loss</b> q <sub>B,70</sub>	%	0.40	0.35	0.30	0.30	0.25	0.25	0.22	0.20	

\*1 Boiler door removed.

\*2 Values for calculating the size of the flue system to EN 13384, relative to 13.2 % CO<sub>2</sub> for EL fuel oil and 10 % CO<sub>2</sub> for natural gas.

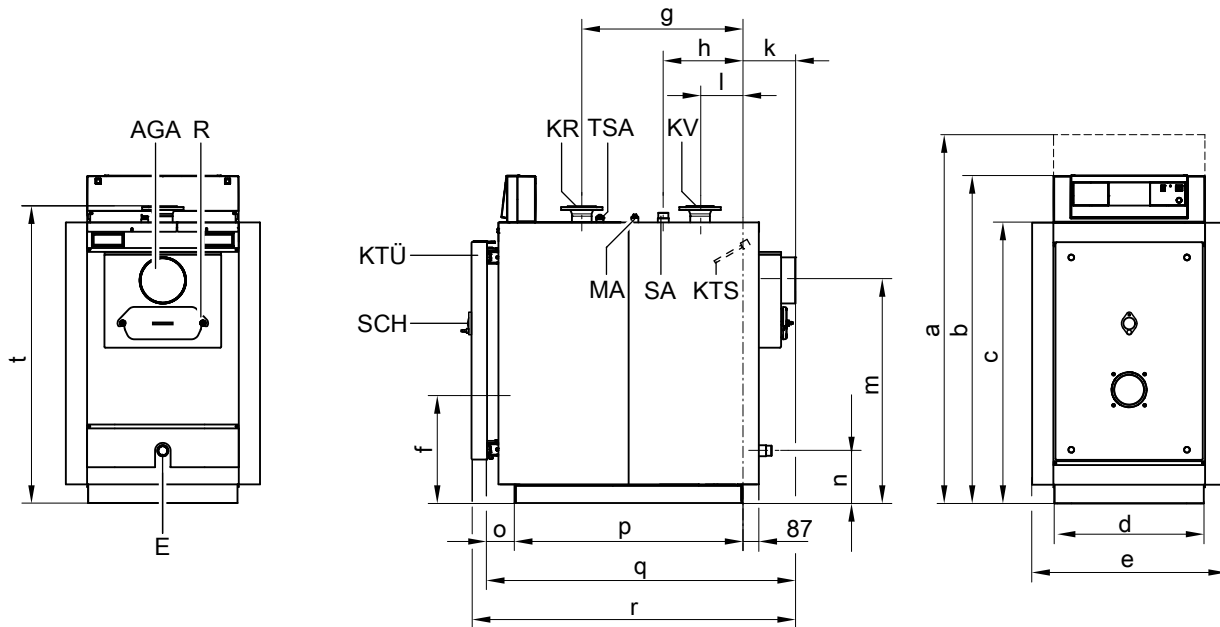
Flue gas temperatures as actual gross values at 20 °C combustion air temperature.

The details for partial load refer to an output of 60 % of rated heating output. If the partial load differs (depending on operating mode), calculate the flue gas mass flow rate accordingly.

## Boiler specification (cont.)

Rated heating output	kW	90	120	150	200	270	350	440	560
Sound pressure level <sup>*3</sup>									
1 m in front of the boiler (stage 1/2)	dB(A)			<68/<69				–	
In the flue pipe (stage 1/2)	dB(A)			<96/<103				–	

## Dimensions

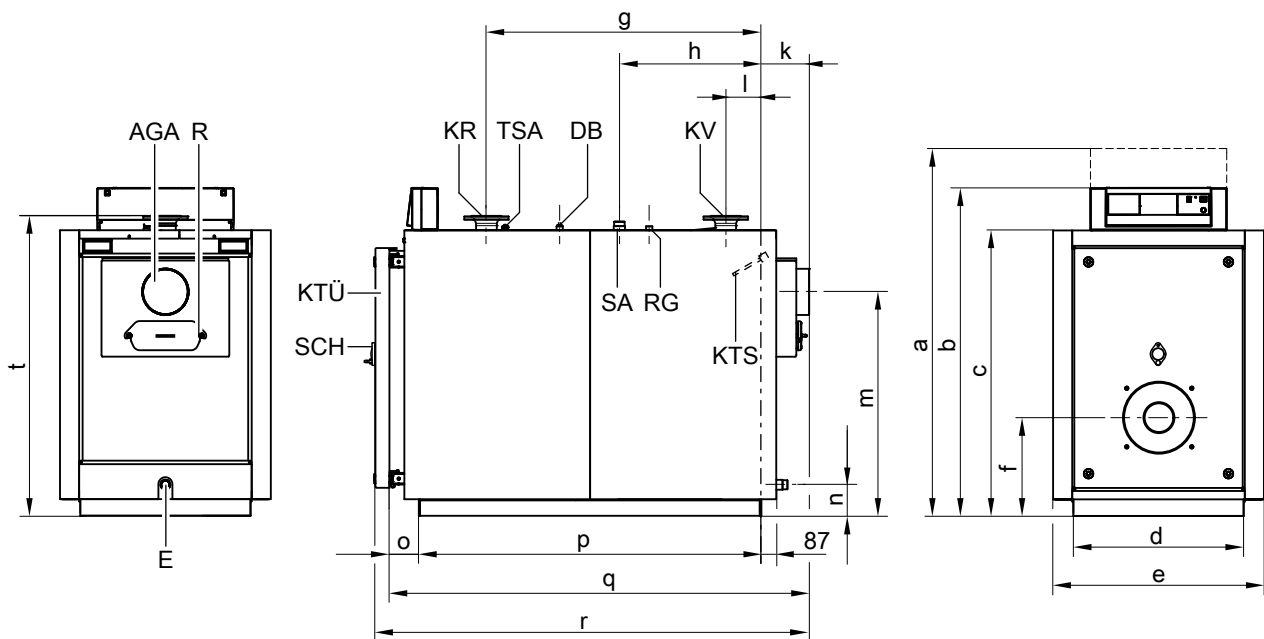


90 to 270 kW

AGA	Flue outlet	MA	Female connection R ½ (male thread) for pressure gauge
E	Drain	R	Cleaning aperture
KR	Boiler return	SA	Safety connection (safety valve)
KTS	Boiler water temperature sensor	SCH	Inspection port
KTÜ	Boiler door	TSA	Female connection R ½ (male thread) for Therm-Control temperature sensor
KV	Boiler flow		

<sup>\*3</sup> Standard values resulting from sound pressure level testing cannot be guaranteed, as sound pressure level tests are always dependent on the specific system. The data provided here refers to Viessmann Vitoflame 100 pressure-jet oil/gas burners.

## Boiler specification (cont.)



350 to 560 kW

AGA	Flue outlet	KV	Boiler flow
DB	Female connection R ½ (male thread) for maximum pressure limiter	R	Cleaning aperture
E	Drain	RG	Female connection R ½ (male thread) for additional control equipment
KR	Boiler return	SA	Safety connection (safety valve)
KTS	Boiler water temperature sensor	SCH	Inspection port
KTÜ	Boiler door	TSA	Female connection R ½ (male thread) for Therm-Control temperature sensor

**Table of dimensions**

Rated heating output	kW	90	120	150	200	270	350	440	560
a	mm	1485	1485	1520	1520	1630	1630	1795	1795
b	mm	1315	1315	1350	1350	1460	1460	1625	1625
c	mm	1085	1085	1115	1115	1225	1225	1395	1395
d	mm	575	575	650	650	730	730	865	865
e	mm	755	755	825	825	905	905	1040	1040
f	mm	440	440	440	440	420	420	470	470
g	mm	622	825	811	1009	979	1179	1146	1292
h	mm	307	395	324	423	409	609	710	783
k	mm	203	203	203	203	203	203	224	224
l	mm	165	165	151	151	153	153	166	166
m	mm	860	860	885	885	960	960	1110	1110
n	mm	200	200	190	190	135	135	135	135
o	mm	110	110	110	110	130	130	130	130
p (length of base rails)	mm	882	1085	1071	1268	1269	1469	1471	1617
q (handling dimension)	mm	1195	1400	1385	1580	1600	1800	1825	1970
r	mm	1260	1460	1445	1640	1660	1860	1885	2030
t	mm	1145	1145	1180	1180	1285	1285	1455	1455

Where access to the boiler room is difficult, the boiler door can be removed.

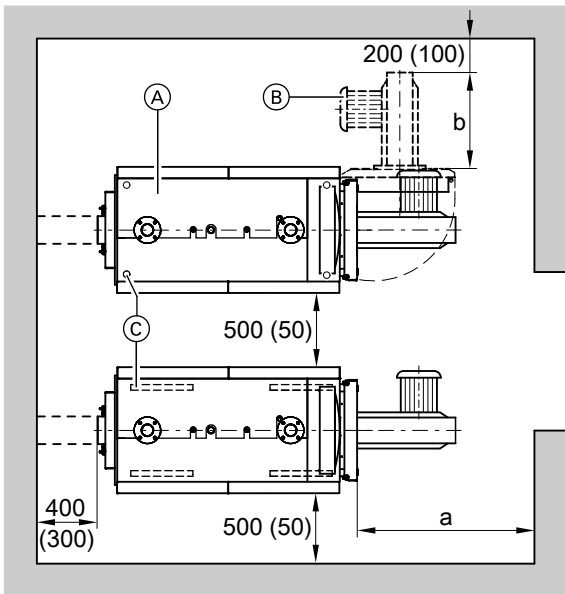
Dim. f: Observe the installed burner height.

Dim. q: With boiler door removed

## Boiler specification (cont.)

### Siting

#### Minimum clearances



Observe the stated dimensions to ensure straightforward installation and maintenance. Where space is tight, only the minimum clearances (dimensions in brackets) need to be maintained. In the delivered condition, the boiler door is fitted so it opens to the left. The hinge pins can be repositioned so the door opens to the right.

- (A) Boiler
- (B) Burner
- (C) Adjustable anti-vibration feet or anti-vibration boiler supports (350 to 560 kW)

Rated heating output	kW	90	120	150	200	270	350	440	560
a	mm		1100		1400		1600		

Dim. a: Maintain this space in front of the boiler to enable removal of the turbulators and cleaning of the hot gas flues.

Dim. b: Observe the installed burner length.

#### Siting conditions

- Prevent air contamination by halogenated hydrocarbons (e.g. as contained in sprays, paints, solvents and cleaning agents)
- Prevent very dusty conditions
- Prevent high levels of humidity
- Prevent frost and ensure good ventilation

Otherwise the system may suffer faults and damage.

In rooms where air contamination through **halogenated hydrocarbons** may occur, install the boiler only if adequate measures can be taken to provide a supply of uncontaminated combustion air.

### Burner installation

Boilers up to 120 kW:

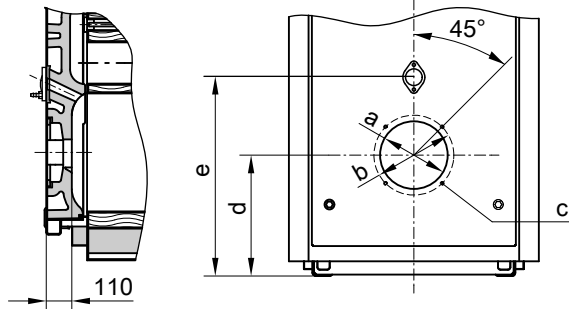
The burner fixing hole circle, burner fixing holes and flame tube aperture comply with EN 226.

Boilers from 150 kW:

The burner fixing hole circle, burner fixing holes and flame tube aperture are as detailed in the table below.

The burner can be fitted directly to the hinged boiler door. If the burner dimensions deviate from those stated in the table below, use the burner plate included in the standard delivery.

Burner plates can be prepared at the factory on request (chargeable option). If this is required, state the burner make and type when ordering. The flame tube must protrude from the thermal insulation of the boiler door.

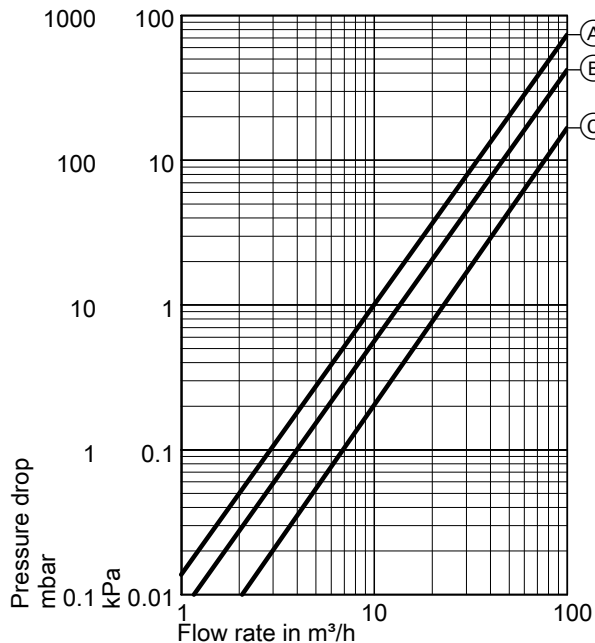


Rated heating output	kW	90	120	150	200	270	350	440	560
a	Ø mm	135	135	240	240	240	240	290	290
b	Ø mm	170	170	270	270	270	270	330	330
c	Quantity/thread	4/M 8	4/M 8	4/M 10	4/M 10	4/M 10	4/M 10	4/M 12	4/M 12

## Boiler specification (cont.)

Rated heating output	kW	90	120	150	200	270	350	440	560
d	mm	440	440	440	440	420	420	470	470
e	mm	650	650	650	650	670	670	780	780

### Pressure drop on the heating water side



The Vitoplex 200 is only suitable for fully pumped hot water heating systems.

- (A) Rated heating output 90 to 270 kW
- (B) Rated heating output 350 kW
- (C) Rated heating output 440 and 560 kW

### Delivered condition of the boiler

Boiler shell with fitted boiler door and cleaning cover  
 Mating flanges are fitted to all connectors.  
 The adjusting screws are supplied in the combustion chamber.  
 Cleaning equipment can be found on top of the boiler.

- 1 Therm-Control
- 1 Coding card and technical documentation for Vitoplex 200
- 1 Burner plate (from 150 kW)

- 2 Box with thermal insulation
- 1 Box with boiler control unit and 1 bag with technical documentation

### Control unit versions

#### For a single boiler system

##### ■ Vitotronic 100, type CC1E

For the control unit with a constant boiler water temperature.  
 For weather-compensated or room temperature-dependent operation in conjunction with an external control unit.

##### ■ Vitotronic 200, type CO1E

For weather-compensated operation and mixer control for up to 2 heating circuits with mixer. For the 2 heating circuits with mixer, the accessory "Extension for heating circuits 2 and 3" is required.

## Control unit versions (cont.)

### For a multi boiler system (up to 8 boilers)

#### ■ Vitotronic 300, type CM1E

For weather-compensated operation of a multi boiler system. This Vitotronic control unit also handles control of the boiler water temperature of a boiler within this multi boiler system.

#### Vitotronic 100, type CC1E and LON communication module

To control the boiler water temperature for each additional boiler in the multi boiler system.

#### ■ Vitocontrol 100-M/200-M multi mode system controller

For weather-compensated cascade control of boilers with Vitotronic 100 control unit and a Vitobloc 200 CHP unit or other heat generator.

### Multi mode system controller in the control panel

For single and multi boiler systems

#### Vitocontrol 100-M

■ For operation of multi mode heating systems with up to 4 heat generators, with various combinations of oil/gas boilers, heat pumps, CHP units and solid fuel boilers. The Vitocontrol 100-M can operate a range of defined standard schemes. The schemes are available via the Viessmann Schematic Browser. For the compatibility of the Vitocontrol 100-M in conjunction with Viessmann control units, see the compatibility list. Connection to ViScada for web-based system visualisation is available as an option. This requires an internet connection.

Viessmann Schematic Browser: [www.viessmann-schemes.com](http://www.viessmann-schemes.com)

Compatibility list: [www.vitocontrol.info](http://www.vitocontrol.info)

#### Vitocontrol 200-M

■ For the operation of customer-specific multi mode energy systems with any number of heat generators in various combinations, as well as cooling, solar, ventilation and electricity components. Solutions are based on a modular system and can be flexibly extended with new functions and process applications. Connection to ViScada for web-based system visualisation is available as an option. This requires an internet connection.

## Boiler accessories

See pricelist.

## Operating conditions for systems with Vitotronic boiler protection

Vitotronic boiler protection, e.g. Therm-Control.

Operation with burner load	Requirements	
	≥ 60 %	< 60 %
1. Heating water flow rate	None	
2. Boiler return temperature (minimum value) <sup>*4</sup>	None <sup>*5</sup>	
3. Lower boiler water temperature	– Oil operation 50 °C – Gas operation 60 °C	– Oil operation 60 °C – Gas operation 65 °C
4. 2-stage burner operation	1st stage 60 % of rated heating output	No minimum load required
5. Modulating burner operation	Between 60 and 100 % of rated heating output	No minimum load required
6. Reduced mode	Single boiler systems and lead boiler in multi boiler systems – Operation with lower boiler water temperature Lag boilers in multi boiler systems – Can be shut down	
7. Weekend setback	As per reduced mode	

For water quality requirements see the technical guide to this boiler.

<sup>\*4</sup> For a corresponding sample system for using the Therm-Control start-up system, see the Viessmann schematic browser at [www.viessmann-schemes.com](http://www.viessmann-schemes.com)

<sup>\*5</sup> No requirements; only in conjunction with Therm-Control.



## Operating conditions for systems with on-site boiler protection

	Requirements	
	≥ 60 %	< 60 %
Operation with burner load	None	
1. Heating water flow rate	None	
2. Boiler return temperature (minimum value)	– Oil operation 40 °C – Gas operation 53 °C	– Oil operation 53 °C – Gas operation 58 °C
3. Lower boiler water temperature	– Oil operation 50 °C – Gas operation 60 °C	– Oil operation 60 °C – Gas operation 65 °C
4. 2-stage burner operation	1st stage 60 % of rated heating output	No minimum load required
5. Modulating burner operation	Between 60 and 100 % of rated heating output	No minimum load required
6. Reduced mode	Single boiler systems and lead boiler in multi boiler systems – Operation with lower boiler water temperature Lag boilers in multi boiler systems – Can be shut down	
7. Weekend setback	As per reduced mode	

For water quality requirements see the technical guide to this boiler.

## Design information

### Installing a suitable burner

The burner must be suitable for the relevant rated heating output and the boiler pressure drop on the hot gas side (see the burner manufacturer's specification).

The material of the burner head must be suitable for operating temperatures up to at least 500 °C.

#### Pressure-jet oil burner

The burner must be tested and designated to EN 267.

#### Pressure-jet gas burner

The burner must be tested to EN 676 and be identified with the CE designation.

#### Burner adjustment

Adjust the oil or gas throughput of the burner to suit the rated boiler heating output.

### Low water indicator

If the standard boiler control unit is connected in accordance with the installation instructions, the Vitoplex 200 up to 300 kW (except in attic heating centres) does not require a low water indicator to EN 12828.

In the event of a water shortage due to a leak in the heating system and simultaneous burner operation, the control unit will automatically shut down the burner before the boiler and/or flue system reach impermissible high temperatures.

### Permissible flow temperatures

Hot water boiler for permissible flow temperatures (= safety temperatures)

Up to 110 °C

#### ■ CE designation:

- CE-0085 (90 to 350 kW) compliant with Efficiency Directive and
- CE-0085 compliant with the Gas Appliances Directive

Above 110 °C (up to 120 °C) (with individual test certification on request)

#### ■ CE designation:

CE-0035 in compliance with the Pressure Equipment Directive  
For operation with safety temperatures in excess of 110 °C additional safety equipment is required.

Boilers with a safety temperature **above 110 °C** require supervision, according to the Health & Safety at Work Act [Germany]. In accordance with the conformity assessment diagram no. 5 of the EU Pressure Equipment Directive, these boilers must be classed as category III.

The system must be tested prior to commissioning.

- Annually: External inspection, inspection of the safety equipment and water quality.
- Every 3 years: Internal inspection (or water pressure test as an alternative).
- Every 9 years: Water pressure test (for max. test pressure see type plate).

An approved inspection body (e.g. TÜV [in Germany]) must carry out the test.

### Further information on design/engineering

See the technical guide to this boiler.

## Tested quality



CE designation according to current EC Directives



Subject to technical modifications.

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