

Technical Data Manual

Model Nos. and pricing: see Price List



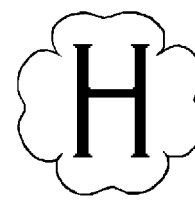
Product may not be exactly as illustrated.

Vitorond 200

Oil-/Gas-fired boiler

sectional cast iron design
with Eutectoplex heat transfer surface, in triple-pass design
for operation with modulating water temperatures

Heating input: 1255 to 4387 MBH
368 to 1285 kW



VITOROND 200

The modular sectional cast iron design of the Vitorond 200, VD2 allows for problem-free transport into difficult-to-access boiler rooms and permits easy assembly.

The triple-pass design ensures clean, low-emission combustion, while the Eutectoplex heat exchanger surface guarantees economical energy consumption, high operational reliability and a long service life.

The benefits at a glance:

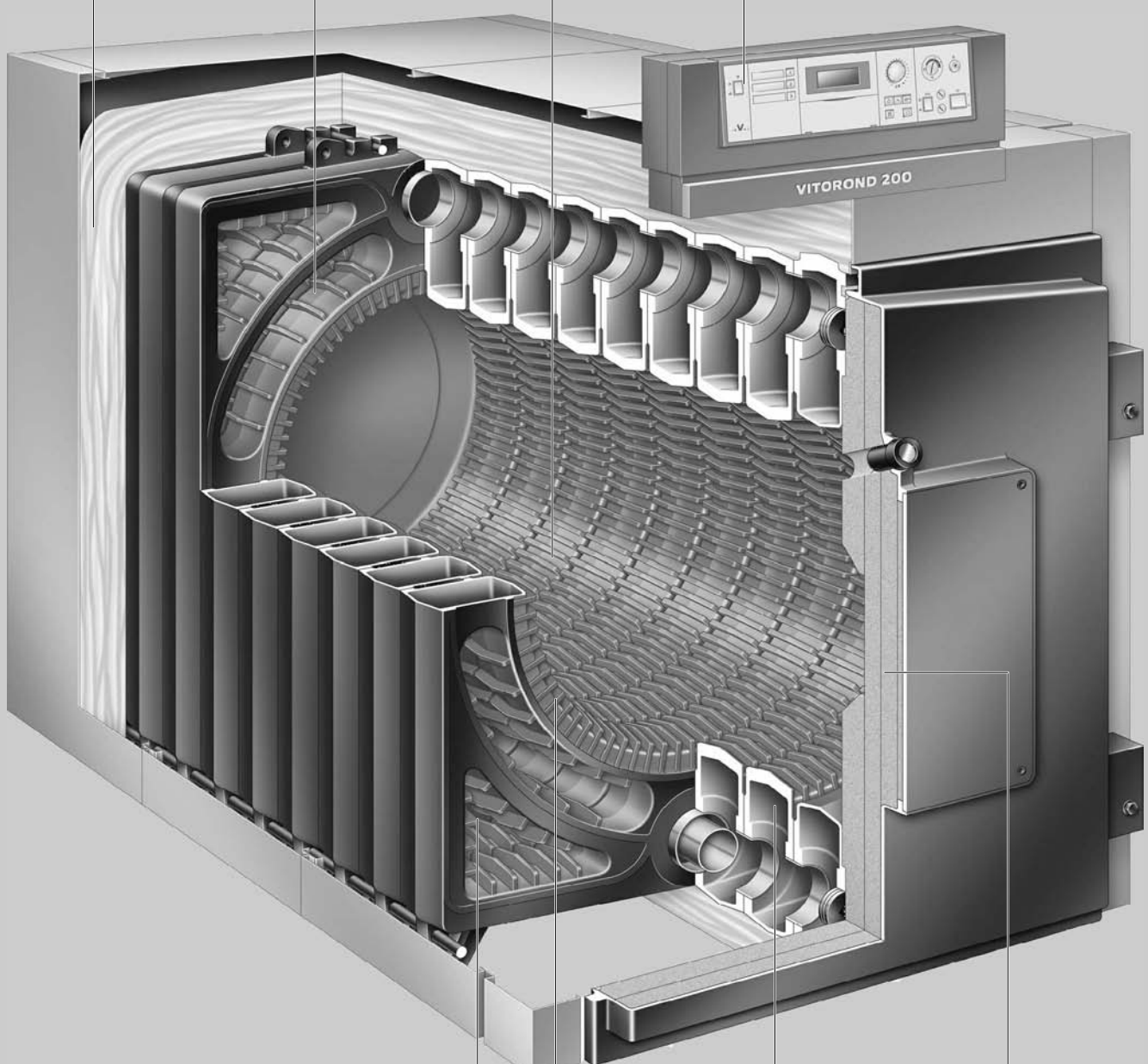
- Eutectoplex heat exchanger surface for high operational reliability and a long service life. The homogeneous structure of the Eutectoplex special gray cast iron ensures uniform heat transfer, minimizing stress fractures and counteracting the formation of condensate. Shape and geometry of the cast iron sections, excellent water flow characteristics and uniform temperature distribution further increase the level of operational reliability.
- Problem-free transport into difficult-to-access boiler rooms due to sectional construction and low weight of individual sections.
- Efficient and environmentally friendly operation due to modulated boiler water temperatures.
Combustion efficiency up to:
 - oil 88.1%
 - gas 85.5%Thermal efficiency up to:
 - oil 88.0%
 - gas 85.4%
- Low-emission combustion through triple-pass design.
- Simple, quick assembly of the individual cast iron sections is achieved with a double-groove seal fit system for the flue gas passageways. The gasket seal is secured in place by the double groove, and therefore not subject to mechanical stresses.
- Problem-free cleaning access facilitated by a hinged (left or right) swing-open combustion chamber door, allowing easy access to all three heat exchanger passes from boiler front, reducing side clearance.
- Economical and safe operation of the heating system with Vitotronic or Dekamatik digital boiler and heating system control. Tailored to every requirement, this control covers all known control strategies and applications.
- Economical and hygienic DHW production with indirect-fired Vitocell 100 steel or Vitocell 300 stainless steel tanks. Tanks may be combined into multiple-tank batteries for applications requiring larger quantities of hot water.

Extremely effective
4" / 100 mm thick
insulation

Second
pass

Combustion
chamber

Vitotronic 300 control -
intelligent and easy to install,
operate and service



Third
pass

Eutectoplex heat
exchanger surface
constructed from
homogeneous special
gray cast iron

Wide water
passageways

Burner door
insulation

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Product may not be exactly as illustrated.

Technical Data

Technical data ^{*1}

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
Input (oil) ^{*1}	MBH	1255	1490	1726	1961	2196	2471	2745	3059	3373	3727	4236
	kW	368	436	506	574	643	724	804	896	988	1091	1241
Input (gas) ^{*1}	MBH	1300	1544	1787	2031	2275	2559	2843	3168	3493	3860	4387
	kW	381	452	523	595	666	750	833	928	1023	1130	1285
Output (oil/gas) ^{*2}	MBH	1110	1319	1526	1732	1941	2183	2425	2699	2976	3135	3738
	kW	325	387	447	508	569	640	711	791	872	919	1095
Combustion efficiency (oil)	%	88.1	88.0	88.0	87.9	87.8	87.8	87.7	87.6	87.5	87.4	87.3
Combustion efficiency (gas)	%	85.5	85.4	85.4	85.3	85.2	85.1	85.1	85.0	84.9	84.8	84.6
Thermal efficiency (oil)	%	88.0	88.0	88.0	88.0	88.0	87.9	87.9	87.9	87.9	87.8	87.8
Thermal efficiency (gas)	%	85.4	85.4	85.4	85.3	85.3	85.3	85.3	85.2	85.2	85.2	85.2
Number of cast iron sections		9	10	11	12	13	14	15	16	17	18	19
Cast iron block dimensions												
Length	inches	57	62	67	72	77½	82½	88	93	98	103	108
	mm	1450	1580	1710	1840	1970	2100	2230	2360	2490	2620	2750
Width	inches	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½
	mm	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
Height	inches	45¼	45¼	45¼	45¼	45¼	45¼	45¼	45¼	45¼	45¼	45¼
	mm	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
Cast iron section dimensions												
Front section (with combustion chamber door)	inches	45¼ x 40½ x 10¾										
	mm	1150 x 1030 x 270										
Intermediate section	inches	45¼ x 36¼ x 5										
	mm	1150 x 920 x 125										
Rear section (with flue gas collar)	inches	45¼ x 36¼ x 9										
	mm	1150 x 920 x 290										
Dimensions (with insul. jacket)												
Total length	inches	58¾	63¾	68¾	73¾	78¾	83¾	89	93¾	98¾	104	108¾
	mm	1490	1620	1750	1870	2000	2130	2260	2380	2510	2640	2760
Total width with NR2 control (side-mounted)	inches	49¼	49¼	49¼	49¼	49¼	49¼	49¼	49¼	49¼	49¼	49¼
	mm	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Total width with Dekamatik (side-mounted)	inches	52¾	52¾	52¾	52¾	52¾	52¾	52¾	52¾	52¾	52¾	52¾
	mm	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340	1340
Total width with KR control (side-mounted)	inches	54¾	54¾	54¾	54¾	54¾	54¾	54¾	54¾	54¾	54¾	54¾
	mm	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390
Total height	inches	50¾	50¾	50¾	50¾	50¾	50¾	50¾	50¾	50¾	50¾	50¾
	mm	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290	1290
Weight												
Front section (with combustion chamber door)	lbs	529	529	529	529	529	529	529	529	529	529	529
	kg	240	240	240	240	240	240	240	240	240	240	240
Intermediate section	lbs	353	353	353	353	353	353	353	353	353	353	353
	kg	160	160	160	160	160	160	160	160	160	160	160
Rear section (with flue gas collar)	lbs	507	507	507	507	507	507	507	507	507	507	507
	kg	230	230	230	230	230	230	230	230	230	230	230
Cast iron heat exchanger block	lbs	3748	4100	4453	4762	5115	5423	5776	6085	6437	6790	7143
	kg	1700	1860	2020	2160	2320	2460	2620	2760	2920	3080	3240
Overall weight complete with insulation												
	lbs	3924	4299	4652	4982	5335	5666	6019	6349	6702	7070	7429
	kg	1780	1950	2110	2260	2420	2570	2730	2880	3040	3210	3370

^{*1} Input ratings are based on ANSI Z21.13a*CSA 4.9a-2005 - Gas Fired Steam and Hot Water Boilers; CSA B140.7-05 - Oil Burning Equipment - Steam and Hot Water Boilers; CSA B140.0-03 - Oil Burning Equipment - General Requirements; UL 726 - 7th ed. - Oil-Fired Boiler Assemblies; and UL 795 - Commercial Industrial Gas Heating Equipment.

^{*2} Output ratings are based on the IBR BTS-2000 "method to determine efficiency of commercial space heating boilers".

Technical data

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
Boiler water content	USG	65	73	80	87	95	102	110	117	124	132	139
	ltr	247	275	303	331	359	387	415	443	471	499	527
Max. boiler temperature *2 (= fixed high limit)	°F	248	248	248	248	248	248	248	248	248	248	248
	°C	120	120	120	120	120	120	120	120	120	120	120
Max. allow. operating pressure *3	psig	75	75	75	75	75	75	75	75	75	75	75
Boiler connections												
Boiler supply and return	inches	4	4	4	4	4	4	4	4	4	4	4
Safety supply *4	inches	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½
Safety return *4	inches	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½
Drain valve	inches	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾
Heating surface area												
Flue gas side	ft. ²	170	196	212	232	254	274	296	317	339	358	380
	m ²	15.8	18.2	19.7	21.5	23.6	25.5	27.5	29.5	31.5	33.3	35.3
Water side	ft. ²	98	109	120½	131	142	153	165	175	187	198	209
	m ²	9.1	10.1	11.2	12.2	13.2	14.2	15.3	16.3	17.4	18.4	19.4
Flue gas *5												
– Temperature (gross) *6	°F	374	374	374	374	374	374	374	374	374	383	383
	°C	190	190	190	190	190	190	190	190	190	195	195
– Flue gas mass flow rate	lbs/h	1301	1598	1854	2081	2337	2601	2897	3196	3527	3825	4277
	kg/h	590	725	841	944	1060	1180	1314	1450	1600	1735	1940
With minimum heating input and a 2-stage burner (operation of stage 1)												
– Temperature	°F	266	266	266	266	266	266	266	266	266	275	275
	°C	130	130	130	130	130	130	130	130	130	135	135
– Flue gas mass flow rate at minimum input rate	lbs/h	710	842	974	1109	1241	1398	1552	1730	1907	2110	2394
	kg/h	322	382	442	503	563	634	704	785	865	957	1086
Boiler standby loss based on max. heating input and hot water supply and return temperatures of 167 / 140°F 75 / 60 °C	%	0.40	0.38	0.35	0.32	0.31	0.29	0.28	0.27	0.26	0.25	0.24
Vent pipe collar outer Ø*7	in	12	12	12	12	12	12	12	12	12	12	12
	mm	300	300	300	300	300	300	300	300	300	300	300
Flue gas resistance	"w.c.	0.20	0.35	0.51	0.67	0.75	0.83	1.10	1.54	1.93	1.77	2.28
	mbar	0.5	0.9	1.3	1.7	1.9	2.1	2.8	3.9	4.9	4.5	5.8
Required flue draft	Pa	0	0	0	0	0	0	0	0	0	0	0
	"w.c.	0	0	0	0	0	0	0	0	0	0	0
Positive pressure	Pa	20	20	20	20	20	20	20	20	20	20	20
	"w.c.	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08

*1 Inch dimensions are rounded to the nearest ¼".

*2 The maximum supply operating temperature (= max. adjustable high limit) lies approx. 27°F / 15°C below the fixed high limit setting.

*3 May be less in some Canadian provinces.

*4 Connections for boiler connection kit (standard equipment).

*5 Combustion results are based on 13.0% CO₂ with fuel oil #2 and 10% CO₂ with natural gas, as well as a system supply temperature of 167 °F / 75 °C, and a system return temperature of 140 °F / 60 °C.

*6 Measured flue gas temperature with a combustion air temperature of 68 °F / 20 °C and a boiler water temperature of 176 °F / 80 °C.

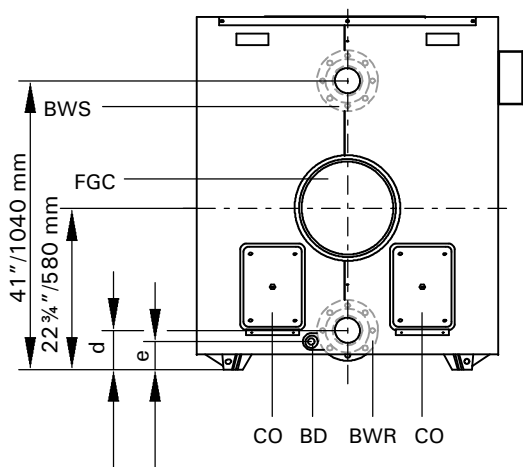
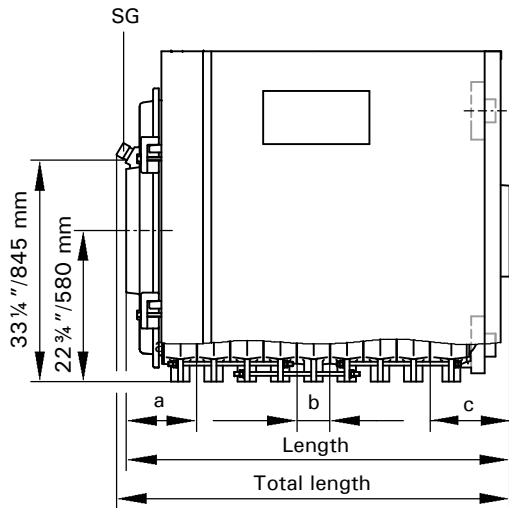
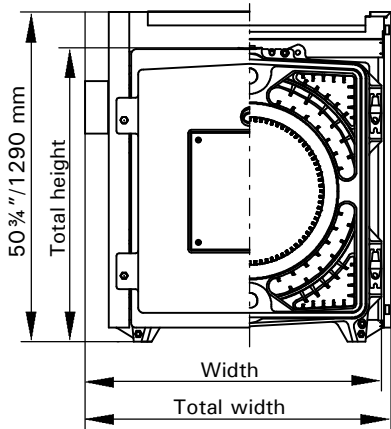
*7 Vent pipe collar diameter does not automatically indicate vent/chimney size. See page 13 for details.

► The combustion burner head material must be suitable for temperatures of at least 932 °F / 500 °C.

► Vitorond 200, VD2-950 and VD2-1080 boiler sizes have unique characteristics, including differences in insulation jacket and dimensions.

► For information regarding other Viessmann System Technology componentry, please reference documentation of respective product.

Technical Data



Legend

- BD Boiler drain 3/4"
- BWR Boiler water return
- BWS Boiler water supply
- CO Clean-out opening
- FGC Flue gas collar
- SG Sight glass

- a 10 1/2" / 270 mm
- b 5" / 125 mm
- c 11 1/2" / 290 mm
- d 5 1/2" / 140 mm
- e 4" / 100 mm

Attention

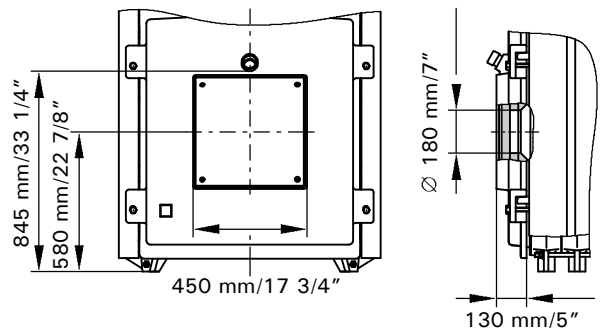
Viessmann North America offers the side-mounted control option only. Refer to the side-mounted control dimension on page 4.

Burner Installation

The burner must be fitted to the burner plate; installations direct to the boiler door are not feasible. Viessmann supplies a pre-drilled end burner plate in accordance with the supplied burner dimensions.

Note

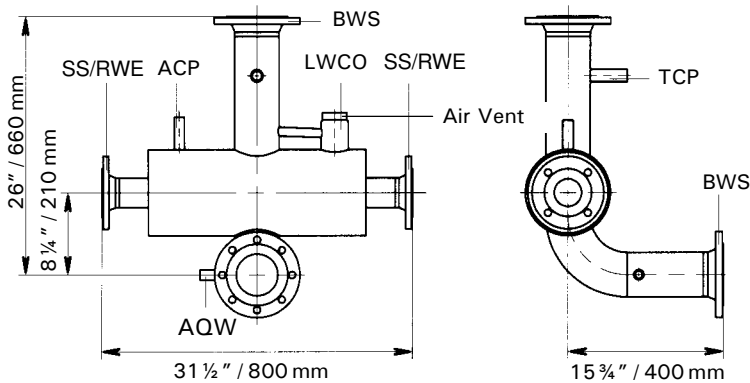
For mounting burners with blast tube diameters of 180 mm / 7" to 280 mm / 11", the door insulation (refractory material) can be cut to the required size. The blast tube must protrude from the thermal insulation on the boiler door.



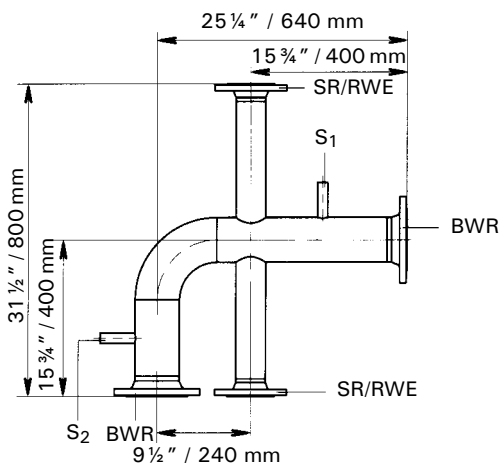
Boiler Connection Kit (Standard Equipment)

consisting of boiler supply and return header

Boiler supply header



Boiler return header (top view)



Legend

- TCP Additional temperature control port, 1/2"
- AQW Aquastat well tapping, 1/2"
- BWR Boiler water return
- BWS Boiler water supply
- ACP Additional control port, 1/2" (pressure gage)
- S₁ Return temperature sensor port
- S₂ Boiler pump temperature sensor, 1/2"
- RWE Return water elevation, 2 1/2"
- SR Safety return - connection to precharged membrane expansion tank
- SS Safety supply - connection to pressure relief valve

Low Temperature Protection

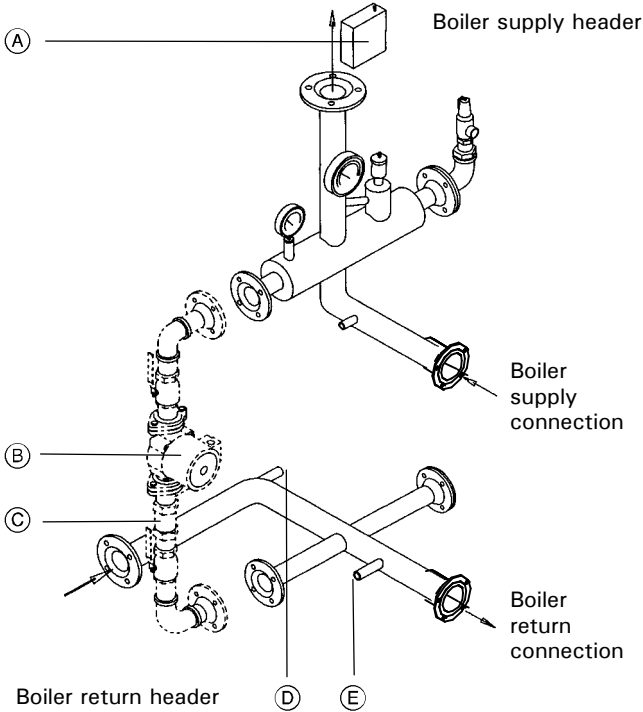
Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
30% Boiler Flow Package	Ø"	1 1/2		1 1/2		not applicable						
100% Boiler Flow Package	Ø"	3	4	4		5	5		6			

Low temperature protection packages from Viessmann are required for Vitorond 200 boilers. A 30% Boiler Flow Package is typically utilized in single-boiler installations. 100% Boiler Flow Packages are utilized in single- and multiple-boiler installations.

Selection of the correct package depends on the characteristics of the heating system and the degree of control necessary to protect the boiler. Contact Viessmann for assistance.

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30% Boiler Flow Package

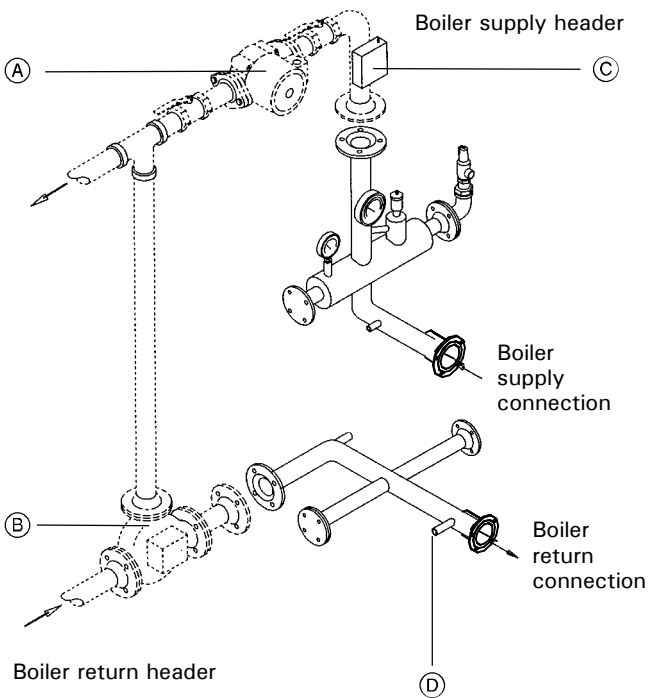


The 30% boiler flow package consists of:

- 1 boiler pump
 - 2 ball valves
 - 1 flow check valve
- (A) Low water cut-off (standard equipment)
 (B) Boiler shunt pump for return water temperature elevation
 (C) Flow check valve
 (D) Location of Honeywell aquastat (to control boiler pump)
 (E) Location of 17 sensor (installed in stainless steel well)

All boiler piping field supplied.

100% Boiler Flow Package



The 100% boiler flow package consists of:

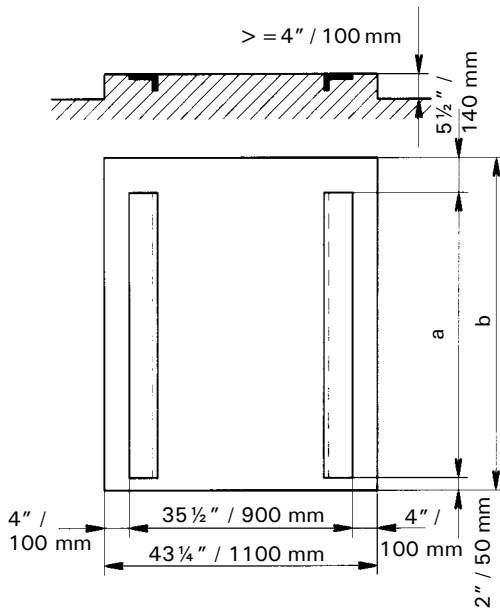
- 1 3-way mixing valve
 - 1 actuator
 - 1 boiler pump
- (A) Boiler pump
 (B) 3-way mixing valve
 (C) Low water cut-off (standard equipment)
 (D) Location of 17 sensor (installed in stainless steel well)

All boiler piping field supplied.

IMPORTANT

It is essential that the heating system designer review the sizing of all pumps including the boiler pump normally supplied with the 100% Boiler Flow Package to verify that all pumps in the system will operate correctly. The responsibility for the distribution system design, including all circulation pumps, remains with the system designer.

Boiler Base

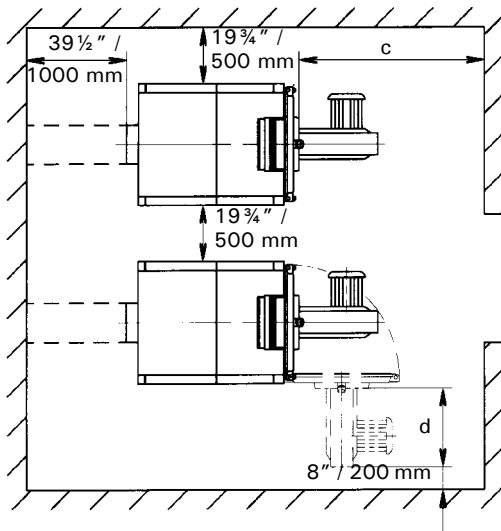


The boiler must be installed on a levelled base or foundation, which must be designed to carry the entire weight of the boiler, water fill, burner and attached piping. To ease the installation of the individual sections, angle-iron or flat steel may be incorporated into the concrete foundation. Surface width of steel strips should be 4" / 100 mm.

Boiler model	VD-320	VD-380	VD-440	VD-500	VD-560	VD-630	VD-700	VD-780	VD-860	VD-950	VD-1080
a inches	45	49 $\frac{3}{4}$	54 $\frac{3}{4}$	59 $\frac{3}{4}$	64 $\frac{1}{2}$	69 $\frac{1}{2}$	74 $\frac{1}{2}$	79 $\frac{3}{4}$	84 $\frac{3}{4}$	87	94
mm	1140	1265	1390	1515	1640	1765	1890	2015	2140	2205	2390
b inches	52 $\frac{1}{4}$	57 $\frac{1}{4}$	62 $\frac{1}{4}$	67	72	77	82	86 $\frac{3}{4}$	91 $\frac{1}{4}$	96 $\frac{1}{2}$	101 $\frac{1}{2}$
mm	1330	1455	1580	1705	1830	1955	2080	2205	2330	2460	2580

Inch dimensions rounded to the nearest 1/4".

Recommended Minimum Clearances



The combustion chamber door is factory assembled to hinge on the left-hand side. A right-hand hinge is feasible by rebuilding the door hinge hardware.

Boiler model	VD-320	VD-380	VD-440	VD-500	VD-560	VD-630	VD-700	VD-780	VD-860	VD-950	VD-1080
c inches	65 $\frac{1}{4}$	70 $\frac{1}{2}$	75 $\frac{1}{2}$	80 $\frac{3}{4}$	85 $\frac{3}{4}$	91	96	101 $\frac{1}{4}$	106 $\frac{3}{4}$	111 $\frac{1}{2}$	116 $\frac{1}{2}$
mm	1660	1790	1920	2050	2180	2310	2440	2570	2700	2830	2960
d inches	Dependent on burner model size										
mm	Dependent on burner model size										

Inch dimensions rounded to the nearest 1/4".

Front clearances (dimension "c" above) will allow for easy removal of flue gas turbulator inserts, as well as for full insertion of bristle brush for heat exchanger cleaning.

IMPORTANT

Minimum side clearance of $19\frac{3}{4}" / 500 \text{ mm}$ must be maintained for side-mounted KR or Dekamatik controls.

Waterside Flow

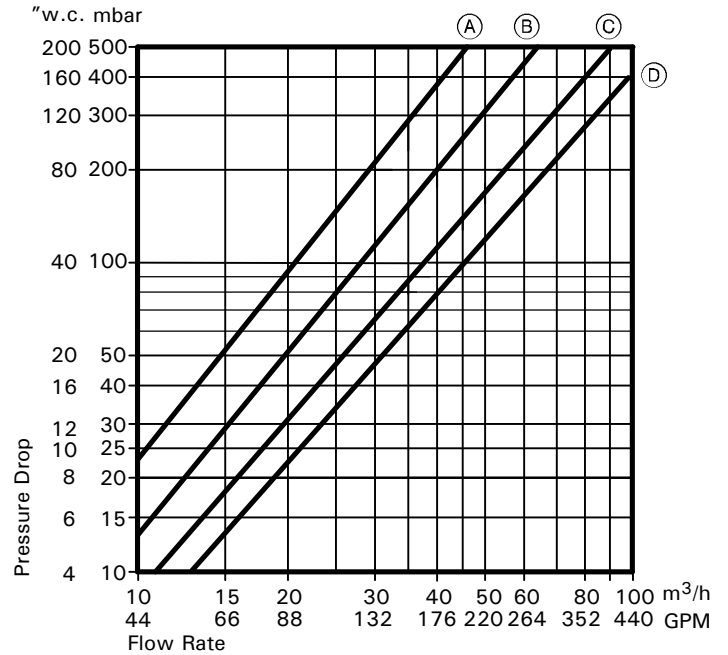
The Vitorond 200 is designed for closed loop, forced circulation, hot water heating systems only.

The recommended water flow rate through the Vitorond 200 is based on a temperature difference of between 20°F and 40°F / 11°C and 22°C. When a balancing valve is used for proper balancing and water flow through the boiler, the valve should be installed 5 pipe diameters from any fittings and 10 pipe diameters from circulation pumps to allow for laminar flow.

The consulting engineer or contractor should review the system design if more balancing valves are required to properly balance the system.

Viessmann can supply TA (Vicaltic) balancing valves upon request. The balancing should be carried out by a certified balancing firm prior to boiler start-up. Please contact Viessmann for your closest certified balancing firm.

- Ⓐ VD2-320, VD2-380 and VD2-440
- Ⓑ VD2-500, VD2-560 and VD2-630
- Ⓒ VD2-700, VD2-780 and VD2-860
- Ⓓ VD2-950 and VD2-1080



Recommended Flow Rates

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
20°F Δt	GPM	109	130	150	171	191	215	239	266	293	324	369
40°F Δt	GPM	55	65	75	85	96	108	119	133	147	162	184
11°C Δt	ltrs/s	6.9	8.2	9.5	10.8	12.1	13.6	15.1	16.8	18.5	20	23.2
22°C Δt	ltrs/s	3.4	4.1	4.7	5.4	6.0	6.8	7.5	8.4	9.3	10.2	11.6

► Δt = temperature difference

Note:

This boiler does not require a flow switch.

Operational Details

	Requirements	are fulfilled via...
Heating water volume flow	30% at heating output	a bypass pump / shunt pump or boiler circulation pump
Boiler return water temperature (minimum)	For operation with modulating boiler water temperatures: - Oil-fired 104°F / 40°C - Gas-fired 127°F / 53°C For operation with elevated boiler water temperatures: - Oil-fired 127°F / 53°C - Gas-fired 127°F / 53°C	an effective system of return temperature elevation
Minimum boiler water temperature	For operation with modulating boiler water temperatures: - Oil-fired 122°F / 50°C - Gas-fired 140°F / 60°C For operation with elevated boiler water temperatures: - Oil-fired 140°F / 60°C - Gas-fired 149°F / 65°C	The Viessmann Dekamatik or Vitotronic control system
2-Stage burner operation	For operation with modulating boiler water temperatures: first stage 60% of heating output For operation with elevated boiler water temperatures: No minimum heating input applies	Burner calibration (site)
Modulating burner operation	For elevated boiler water temperatures only: - Oil-fired 140°F / 60°C - Gas-fired 149°F / 65°C - min. return water temperature 127°F / 53°C	The Viessmann Dekamatik or Vitotronic control system
Setback operation	Minimum boiler water temperature: - Oil-fired 122°F / 50°C - Gas-fired 140°F / 60°C For multiple-boiler installations: - Lead boiler as above - Lag boiler(s) is/are deactivated	The Viessmann control included in the standard equipment
Weekend setback	See Setback operation	See Setback operation

Standard Equipment

Boiler Control Alternatives

Standard Equipment

Note:

Boiler controls and burners are purchased separately. Please see Price List for details.

- The cast iron sections are delivered as individual units on skids.
 - The combustion chamber door (with burner plate) is mounted on the front section.
 - The flue gas collector, with two inspection opening covers (fastened with screws), is mounted on the rear section.
- 1 skid containing supply and return headers
 - 3 cartons containing insulation panels
 - 1 carton containing the boiler control
 - 1 carton with miscellaneous boiler assembly components
- Standard equipment includes:
- Supply/Return header (c/w left/right connections)
 - Low water cut-off
 - Thermometer, pressure gage, air vent, pressure relief valve, and boiler drain valve

IMPORTANT

Ensure specific regional, provincial, or state requirements, such as fuel train and additional safety control requirements etc., are known before the product order is placed, to determine proper burner selection and pricing.

Boiler Control Alternatives

For single boiler systems:

- without Vitocontrol control panel
 - Vitotronic 100** (type GC1)
for constant boiler water temperature or outdoor reset mode in conjunction with an external control unit (BMS).
 - Vitotronic 300** (type GW2)
for modulating boiler water temperature with mixing valve control for a maximum of two heating circuits with mixing valve.
- with Vitocontrol control panel
 - Vitotronic 100** (type GC1)
and
Vitocontrol-S, VD2 control panel
with Vitotronic 333 for outdoor reset mode and mixing valve control for a maximum of 2 heating circuits with mixing valve and additional Vitotronic 050, type HK1S or HK3S for 1 or up to 3 heating circuits with mixing valve.

For multi-boiler system (up to 4 boilers):

- without Vitocontrol control panel
 - Vitotronic 100** (type GC1) and **LON module**
for modulating boiler water temperature in conjunction with an external control unit (BMS).
- with Vitocontrol control panel
 - Vitotronic 100** (type GC1) and **LON module**
for modulating boiler water temperature for each boiler of the multi-boiler system and
Vitocontrol-S, VD2 control panel
with Vitotronic 333 for multi-boiler system, outdoor reset mode and mixing valve control for a maximum of 2 heating circuits with mixing valve and additional Vitotronic 050, type HK1S or HK3S for 1 or up to 3 heating circuits with mixing valve.

For single- or multiple-boiler installations:

Custom control panels
Custom control panels for residential or commercial applications are designed and manufactured by Viessmann to suit any customer's specific requirements. Custom control panels can have features such as pool heating, hot tub heating, snow melting, telephone tie-in, integration with Building Management Systems, as well as several other functions. Please inquire.

The control of the Vitorond 200, VD2 boiler can be mounted either on the left- or right-hand side of the boiler. Please specify control location at the time of order.

System Design Considerations

Burner calibration

With 2-stage and fully modulating burners, ensure that the chimney is compatible with the lower flue gas temperatures associated with partial load conditions set on the burner.

2-Stage burner

When used with the Dekamatik or Vitotronic control, the following minimum heating outputs are applicable to protect the boiler:
 - 60% of outputs stated in the Technical Data table on page 4.

Fully modulating burner

The minimum boiler water temperature is:
 - 140°F / 60°C with oil,
 - 149°F / 65°C with natural gas.
 Set the return temperature elevation system to maintain a minimum value of 127°F / 53°C.

Venting

The Vitorond 200, VD2 boiler is approved as a **Category I** and III appliance and must be vented accordingly.

CAUTION
 The Vitorond 200, VD2 boiler is not approved for side wall venting.

Chimney

For proper operation of the Vitorond 200, VD2 boiler, all products of combustion must be safely vented to the outdoors, while ensuring that flue gases do not cool prematurely.

It is critical that the chimney system be properly designed to handle the relatively cool flue gas temperatures produced by the Vitorond 200, VD2 boiler.

If the chimney system lacks sufficient insulation and/or the chimney diameter is too large, corrosive and damaging condensation will result due to flue gases cooling too quickly. If a calculated chimney diameter lies between two values, the larger diameter should be selected. The chimney connection length between the boiler vent pipe collar and the chimney must be installed with insulation.

Vent pipe collar diameter does not automatically indicate vent/chimney size. We recommend consulting a reputable chimney installer for advice in project-specific circumstances.

Chimney (continued)

When installing the Vitorond 200, VD2 boiler, it is necessary to install a barometric draft regulator in the chimney/vent for proper operation of the boiler.

Install the barometric draft regulator within 5 to 7 ft. / 1½ to 2 m from the breeching outlet located at the rear of the boiler.

Barometric draft regulator type

For natural gas or propane applications, use a double-acting type.

For #2 fuel oil applications, use a single-acting type.

Barometric draft regulator diameter

The barometric draft regulator **must be the same diameter** opening as the chimney for which the vent is sized. For example, a 14" chimney would require a 14" barometric draft regulator. Do **not** size the barometric draft regulator to the breeching outlet of the boiler, unless the chimney is also intended to be of that diameter.

IMPORTANT

The size of the flue gas outlet on the boiler does not automatically determine the horizontal breeching, or the actual chimney diameter. The chimney size must be designed for the actual boiler model and its input.

Venting option #2 (Category III)

The Vitorond 200 boiler is a **Category III** positive pressure non-condensing boiler. Each boiler must be vented individually. The vent system must be properly designed and suitable materials must be selected. The chimney must be gas tight.



Barometric draft regulator

Combustion air supply

The boiler must not be located in areas or rooms where chemicals containing chlorine, bromine, fluorine, or other corrosive chemicals are stored. Examples include refrigerants, bleach, paint, paint thinner, hair spray, cleaning solvents, water softener salt, etc. The combustion air must not be contaminated with any amount of the above mentioned chemicals.

Boiler should never be installed in areas where excessive dust, high humidity, or risk of frost exist. Ensure adequate ventilation and supply of fresh combustion air.

Consult Viessmann with uncertainties in regard to a suitable boiler installation location.

This boiler/burner unit needs clean fresh air for safe operation. Provisions for combustion and ventilation air must be made at time of installation. For oil-fired boilers, use the "Installation Code for Oil Burning Equipment CAN/CSA-B139" (Canada), or NFPA 31 (USA). For gas or propane installations, use the "Natural Gas Installation Code CAN/CSA-B149.1 or B149.2" (Canada), or "National Fuel Gas Code ANSI Z223.1" (USA), and/or provisions of local codes.

The sizing methods outlined in the above codes should be used when installing a round duct to supply combustion air from the outside.

Warranty

Our warranty does not cover damages resulting from the following:
 - Corrosion caused by flue gas condensation due to low boiler water and/or return water temperatures.
 - Operation with contaminated fill and supplementary feed water.

System layout

The boiler water temperature limit is factory set to 167°F / 75°C.

The boiler water temperature limit can be increased by altering the adjustable high limit to increase the supply water temperature.

To minimize piping losses of the system, however, Viessmann recommends that the radiation and domestic hot water production in the system be designed for a 158°F / 70°C boiler supply water temperature.

System Design Considerations (continued)/Burner Alternatives

Water quality

Treatment for boiler feed water should be considered in areas of known problems, such as where a high mineral content and hardness exist. In areas where freezing might occur, an antifreeze may be added to the system water to protect the system. Please adhere to the specifications given by the antifreeze manufacturer. **Do not use automotive silicate-based antifreeze.** Please observe that an antifreeze/water mixture may require a backflow preventer within the automatic water feed and influence components such as diaphragm expansion tanks, radiation, etc. A 40% antifreeze content will provide freeze-up protection to -10°F / -23°C. Do not exceed 50% antifreeze mix ratio and do **not** use antifreeze other than specifically made for hot water heating systems. System also may contain components which might be negatively affected by antifreeze. Check total system frequently when filled with antifreeze. Follow the instructions of antifreeze manufacturer.

Oxygen diffusion barrier underfloor tubing

The boiler warranty does not cover leaks resulting from corrosion caused by the use of underfloor plastic tubing without an oxygen diffusion barrier. Such systems must have the non-oxygen diffusion barrier tubing separated from the boiler with a heat exchanger. Viessmann recommends the use of underfloor plastic tubing with an oxygen diffusion barrier.

Burner manufacturer

Weishaupt or Riello.

Burner/Gas train approval

Standard approvals are CSA (for Canada) and UL (for U.S.). IRI and FM approved equipment is also available - please inquire.

Electrical requirements

Weishaupt WG, WL, L, RL, G, GL and WM-G(L) RGL Series burners listed on page 15 are available in 120 VAC single-phase, 208 VAC three-phase, 460 VAC three-phase, or 575 VAC three-phase, all in 60 Hz configuration. Size 7 burners are not available in 120 VAC single-phase configuration. It is generally acceptable to use voltages within ten percent of the supply voltage. Available voltage inside boiler room must be provided at time of order. Ensure appropriate disconnect means and overcurrent protection.

Natural gas pressure

Natural gas pressures and heating values as provided by the gas utilities vary greatly across North America. Select the appropriate gas train accordingly. Low pressure gas trains have a maximum input of 14 "w.c.; high pressure gas trains have a maximum pressure of 5 psig. Minimum gas pressures apply - please inquire. Gas pressures and heating values at site must be provided at time of order.

Factory prewired components

Custom factory prewiring by Viessmann ensures optimal functionality, compliance with regional requirements, and ease of installation in the field. Pricing provided by Viessmann includes all necessary hardware items such as junction panel, burner power supply, boiler door safety switch (where necessary), and all essential pressure switches, as well as interconnection with conduit between control and burner.

Electrical drawings provided upon product delivery.

Boiler/Burner start-up

Vitorond 200, VD2 boilers with Weishaupt burners require start-up by Viessmann. Please inquire to obtain details regarding the necessary prerequisites of boiler/burner start-up procedures.

IMPORTANT

To minimize delivery lead times, please ensure that critical technical information is provided at time of order. Viessmann will not process an order without site-specific information regarding available voltage and gas pressure. In addition Viessmann recommends that gas pressure information be provided in writing by the local gas utility.

Weishaupt Burners

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
No. 2 oil-fired 2-stage	Model	L1Z	L3Z			L5Z			L7Z			
No. 2 oil-fired fully modulating	Model	RL3			RL5			RL7				
Natural gas-fired 2-stage	Model	G3		G5			G7					
Natural gas-fired fully modulating	Model	G3		G5			G7					
Propane gas-fired 2-stage	Model	G3		G5			G7					
Propane gas-fired fully modulating	Model	G3		G5			G7					
Combination fully modulating NG, 2-stage oil	Model	GL3		GL5			GL7					
Combination fully modulating NG, fully modulating oil	Model	RGL3		RGL5			RGL7					

Weishaupt Burners, Linkageless¹

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080	
No. 2 oil-fired 2-stage	Model	WL40			WM-L10/3			WM-L10/4		L7			
No. 2 oil-fired fully modulating	Model	WM-L10/2			WM-L10/3			RL5			RL7		
Natural gas-fired 2-stage	Model	WG40-LN		WM-G10/2	G10/3-LN		WM-G10/4			G7-LN			
Natural gas-fired fully modulating	Model	WG40-LN		WM-G10/2	G10/3-LN		WM-G10/4			G7-LN			
Propane gas-fired ² 2-stage	Model	WG40-LN		WM-G10/2	WM-G10/3			WM-G10/4		G7			
Propane gas-fired ² fully modulating	Model	WG40-LN		WM-G10/2	WM-G10/3			WM-G10/4		G7			
Combination fully modulating NG, 2 stage oil	Model	WM-GL10/1	WM-GL10/2			WM-GL10/3			WM-GL20/2				
Combination fully modulating NG, fully modulating oil	Model	WM-GL10/2			WM-GL10/3			WM-GL20/2					
Combination fully modulating NG, fully modulating L.P.	Model	WM-GL10/1	WM-GL10/2			WM-GL10/3			WM-G10/4		WM-GL20/2		

¹ LN behind burner model no. indicates low NO_x burner head is standard equipment.

² Please contact Viessmann to quote a propane burner gas train, where less than 14" w.c. gas pressure exists.

Riello Burners

Boiler model	VD2-	320	380	440	500	560	630	700	780	860	950	1080
No. 2 oil-fired 2-stage	Model	RL28/2	RL38/2	RL50/2			RL70/2			RL100/2		
No. 2 oil-fired fully modulating	Model	RL28/M	RL38/M	RL50/M			RL70/M			RL100/M		
Natural gas-fired fully modulating	Model	RS38/M		RS50/M		RS70/M			RS100/M			
Propane gas-fired fully modulating	Model	RS38/M		RS50/M		RS70/M			RS100/M			
Combination 2-stage NG/2-stage oil full mod. NG/2-stage oil	Model	RLS38		RLS50		---			---		---	
		---		---		RLS70			RLS100		RLS130	
Natural gas-fired fully modulating, low NO _x	Model	RS45/M LN			RS68/M LN			RS120/M LN				

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