

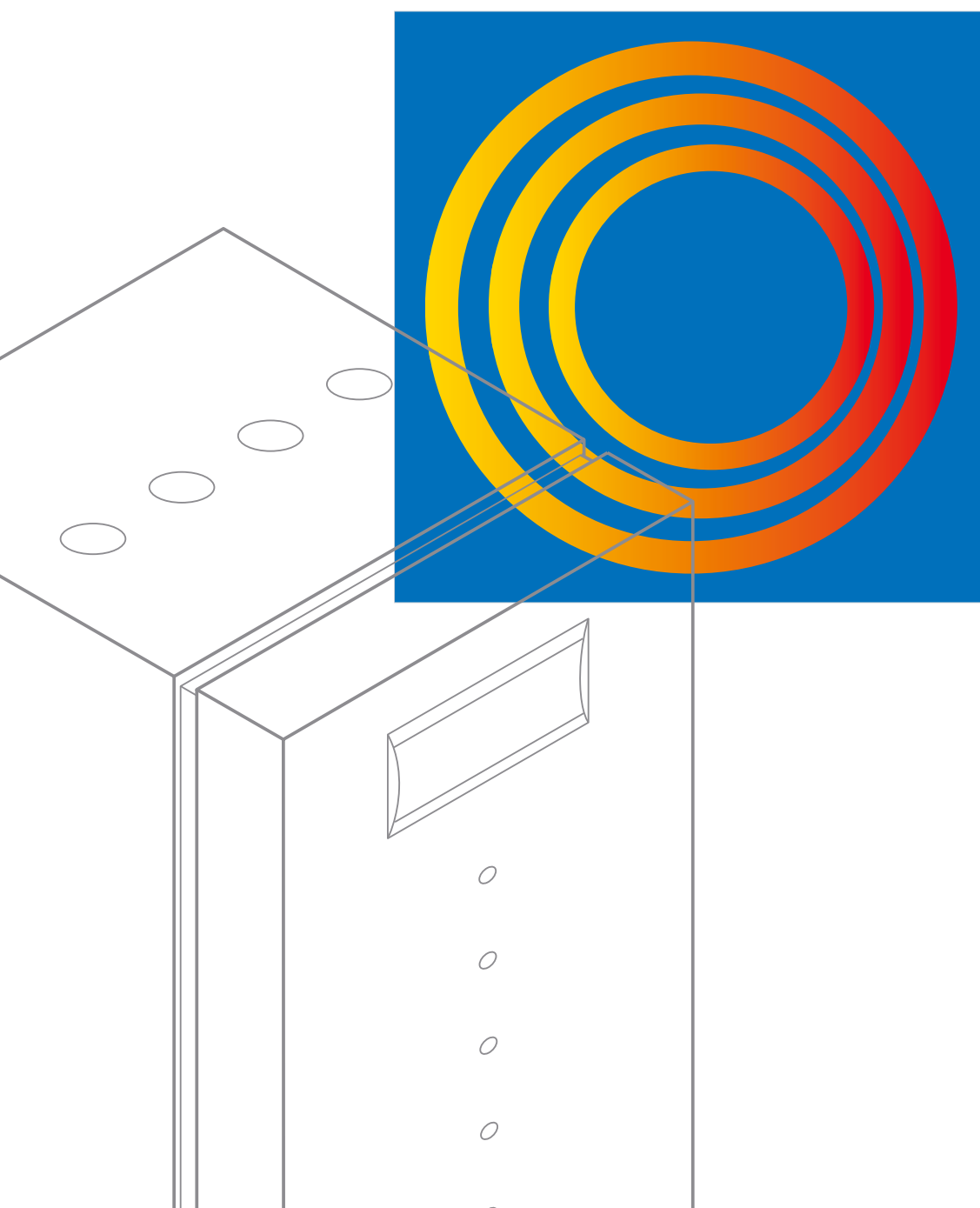
VITOCAL

Heat pumps

VIESSMANN

VITOVENT 300

Domestic ventilation system





Heating with nature's resources well into the future

Environmental awareness is rising as natural resources are exploited to exhaustion, so the issue of utilising renewable resources continues to grow in importance. The increasing demand for economical and future-proof heating technology challenges every responsible home owner and builder. Vitocal 300 heat pumps are one of many new systems answering these challenges.

Elementary energies

Heat pumps utilise renewable energy resources from the world around us. A modicum of electrical power converts solar energy stored in the ground, or in groundwater, into convenient heating fuel. Viessmann heat pumps are so efficient, that they can even be utilised as sole heat provider. Air/water heat pumps can also be operated in parallel with an additional heat generator to cover demand, for example, on particularly cold days. In other words, you can achieve a truly dual-mode, energy-saving heating system.

The right combination

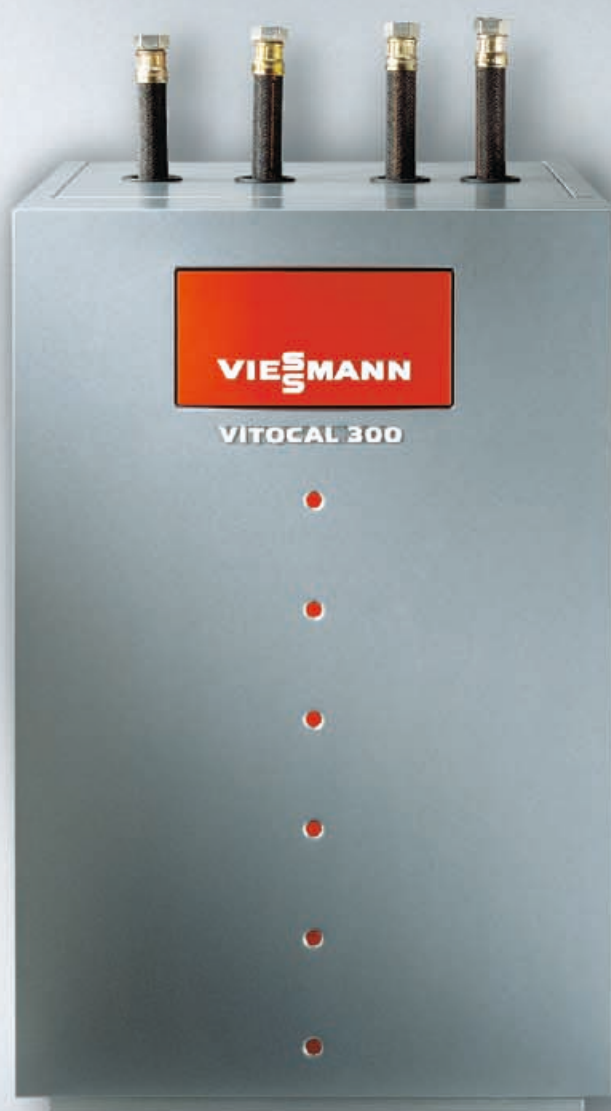
Economical and environmentally responsible heating requires the right choice of equipment, too. The system design must provide optimum matching of individual components to work together harmoniously, to achieve the highest level of efficiency with minimum effort. Additional solar collectors and domestic ventilation systems, with heat recovery, may also be used to supplement the heating operation.

The right decision

This brochure introduces you to the most important, state of the art, heating technology components which are also economical and environmentally-friendly. Viessmann's system philosophy enables all components to work together, like the cogs in a watch, to achieve optimum energy utilisation, environmental protection and performance.

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Ground or groundwater as heat source – **VITOCAL 300**



Vitocal 300 heat pumps utilise renewable energies from the ground, groundwater and the air. Their efficiency enables them to be used as sole heat generator all the year round.

Uniform design – versatile performance

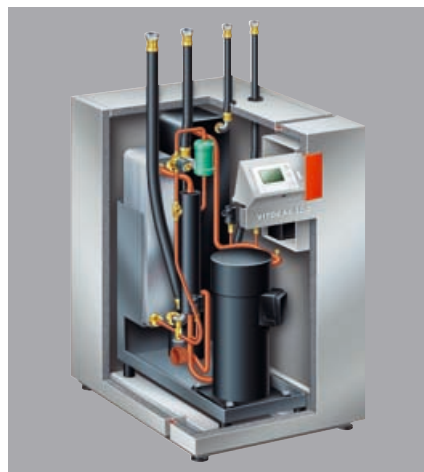
Every Vitocal heat pump follows the Vitotec system design philosophy, which is based on a uniform building block principle. This makes installation, maintenance and service an easy task for your heating contractor. And, thanks to a Compliant scroll compressor, Vitocal 300 not only offers high operational safety and reliability, but also very quiet operation. The digital control unit, CD 60, offers the same degree of convenience, as it manages not only the entire heating system, but also an optional solar heating system. In summer, the control function “Natural cooling” allows the low temperatures under ground or in groundwater to be used to conveniently cool the building (requires additional components).

Heat from the ground

The Vitocal 300 brine/water heat pump utilises energy stored under ground. Just as in groundwater, even temperatures prevail underground all the year round. The pump withdraws energy from the ground, via a ground collector, set approximately 1.5 m deep into the earth.

A space-saving alternative to the ground collector is the ground probe, which penetrates deeper into the earth. At this level, the temperature stays at a constant 10 °C all the year round. This makes Vitocal 300 independent of prevailing outside temperatures, enabling the system to cover the entire heating operation – even on cold days.

To utilise groundwater energy, Vitocal 300 can be simply converted into a water/water heat pump. This mode achieves the highest performance factor.



Vitocal 300
Brine/water heat pump

Benefits at a glance:

- Suitable for all operating modes:
 - in mono operation provides central and DHW heating
 - in dual-mode, it works in combination with a second heat generator, e.g. in modernisation projects.
- High operational safety and reliability, quiet operation through hermetically sealed Compliant scroll compressor with double anti-vibration mounts.
- CFC-free, non-flammable and biologically degradable refrigerant R 407 C.
- Particularly suitable for low temperature heating systems, e.g. underfloor heating systems.
- Weather-compensated digital heating circuit control unit, CD 60, with start-up current limiter and integral cooling and solar heating functions – up to three loading sources can be controlled. Menu-guided operation with plain text support and integral diagnostic system.
- Comprehensive model range with output ranging from
 - 4.8 to 32.6 kW as Vitocal 300 brine/water heat pump
 - 6.3 to 43.0 kW as Vitocal 300 water/water heat pump.
- High performance factors:
 - up to 4.61 as Vitocal 300 brine/water heat pump (brine: 0 °C, flow temperature: 35 °C),
 - up to 5.90 as Vitocal 300 water/water heat pump (groundwater: 10 °C, flow temperature: 35 °C).



Two-stage heat pump up to 106.8 kW – **VITOCAL 300**



The new two-stage version of the Vitocal 300 heat pump achieves an output of up to 106.8 kW and is suitable for utilising groundwater and ground energy sources.

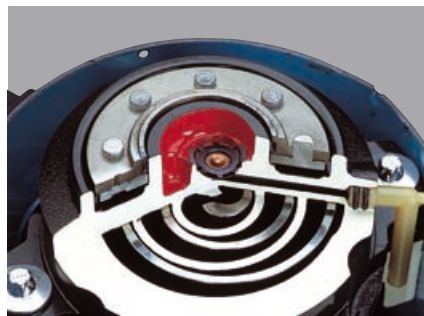
These features enable this model to be matched to any requirement and demand. The modular design, based on two compressor circuits, ensures particularly high efficiency in the partial load range.



Vitocal 300
Water/water heat pump
output up to 106.8 kW

All Vitocal 300 heat pumps are designed according to the Vitotec system design philosophy, which is based on a uniform modular concept. As a result, installation, maintenance and service are dramatically speeded up.

Whilst ensuring high operational safety and reliability, the Compliant scroll compressor makes Vitocal 300 an extremely quiet operator.



Compliant scroll compressors make Vitocal heat pumps not only very safe and reliable, but also extremely quiet



The heart of the scroll compressor

Benefits at a glance:

- Suitable for all operating modes:
 - in mono operation provides central and DHW heating
 - in dual-mode, it works in combination with a second heat generator, e.g. in modernisation projects.
- Two-stage version enables part load operation.
- High operational safety and reliability, quiet operation through hermetically sealed Compliant scroll compressor with double anti-vibration mounts.
- CFC-free, non-flammable and biologically degradable refrigerant R 407 C.
- Particularly suitable for low temperature heating systems, e.g. underfloor heating systems.
- Weather-compensated digital heating circuit control unit, CD 60, with start-up current limiter and integral cooling and solar heating functions – up to three loading sources can be controlled. Menu-guided operation with plain text support and integral diagnostic system.
- High performance factors:
 - up to 5.60 as Vitocal 300 water/water heat pump (groundwater: 10 °C, flow temperature: 35 °C).
 - up to 4.3 as Vitocal 300 brine/water heat pump (brine: 0 °C, flow temperature: 35 °C).



Energy from the air – **VITOCAL 300**



The Vitocal 300 air/water heat pump utilises the outside air heated by the sun. The powerful Compliant scroll compressor turns this energy into useful heat. The CD 60 control unit operates with equal ease: apart from enabling all functions to be checked, it allows convenient communication with the heat pump. Users are assisted by plain text displays when selecting or deselecting functions. Furthermore, the CD 60 is already prepared for the connection of a solar heating system.



Weather-compensated, digital CD 60 heating circuit control unit with start-up current limiter and integral cooling and solar heating functions – up to three loading groups may be controlled

The perfect complement

At low air temperatures, heating output drops – yet heat demand rises, requiring a supplementary heat generator to be added to the Vitocal 300 air/water heat pump. For the coldest days of the year, a Viessmann oil or gas-fired boiler would be the ideal choice, because Vitocal control units are optimised for the use of a second heat source from Viessmann. As long as the heat pump supplies sufficient heating energy, the Viessmann boiler will stay off completely. This avoids unnecessary heat losses and saves heating energy. As an alternative to an oil or gas-fired boiler, you could equally well supplement the heat pump supply on very cold days by using an electric instantaneous water heater for a, so-called, mono-energetic application.



**Vitocal 300
Air/water heat pump
Output: 5.4 to 14.6 kW**

Benefits at a glance:

- Suitable for all operating modes:
 - in mono operation provides central and DHW heating
 - in dual-mode, it works in combination with a second heat generator.
- High operational safety and reliability, quiet operation through hermetically sealed Compliant scroll compressor with double anti-vibration mounts.
- CFC-free, non-flammable and biologically degradable refrigerant R 407 C.
- Particularly suitable for low temperature heating systems, e.g. underfloor heating systems.
- Weather-compensated digital heating circuit control unit, CD 60, with start-up current limiter and integral cooling and solar heating functions – up to three loading sources can be controlled. Menu-guided operation with plain text support and integral diagnostic system.
- Comprehensive model range with output ranging from 5.4 to 14.6 kW.
- High performance factors up to 3.31 (air: 2 °C, flow temperature: 35 °C).



Heat pumps with flow temperatures up to 65 °C – **VITOCAL 350**



The utilisation of renewable energies is gaining importance for modernisation projects too. The new Vitocal 350 heat pump can reach flow temperatures up to 65 °C, thanks to additional vapour injection (EVI cycle) in the compressor circuit.

This makes Vitocal 350 ideal, not only for new buildings, but equally for the modernisation of radiator heating systems in older buildings.

Its high flow temperatures of up to 65 °C also allows it to heat up DHW to a temperature of 58 °C. Thus Vitocal 350 can offer a high level of DHW convenience.

The Vitocal 350 heat pump is so efficient it can even be used as sole heat source for central heating and DHW production all the year round (mono-operation).

The Compliant scroll compressor ensures not only high operational reliability, but also very quiet operation.

Subject to system concept, the integral control function "Natural cooling" can be utilised. This means that the low temperatures under ground or in the groundwater can be used in summer to cool the building.

This makes Vitocal 350 an ideal choice for utilising natural heating and cooling in existing homes.

Benefits at a glance:

- Particularly suitable for radiator heating systems with flow temperatures up to 65 °C.
- DHW temperature up to 58 °C.
- In mono-mode covers the total central heating and DHW requirement – all year round (the same applies to the air/water heat pump).
- High operational safety, reliability and quiet operation through hermetically sealed Compliant scroll compressor with dual anti-vibration mounts.
- CFC-free, non-flammable and biologically degradable refrigerant R 407 C.
- Weather-compensated digital heating circuit control unit CD 60 with start-up current limiter and integral solar heating function – up to three loading sources can be controlled. Menu-guided operation with plain text support and integral diagnostic system.
- Output:
 - brine/water heat pump 11.0 kW,
 - water/water heat pump 14.1 kW,
 - air/water heat pump 9.4 kW.
- High performance factors:
 - brine/water heat pump (0/35 °C): 4.31,
 - water/water heat pump: 5.22,
 - air/water heat pump (2/35 °C): 3.30.
- Annual work factor above 3, even with flow temperature 65 °C.



Vitocal 350
Air/water heat pump
Flow temperature: up to 65 °C
Output: 9.4 kW



Compact heating tower for low energy houses – VITOCAL 343



The future belongs to houses with low energy demand, because they are kind to the environment, minimise CO₂ emissions and save natural resources. This particularly applies when renewable energies are utilised, such as with the Vitocal 343 (brine/water heat pump).

Vitocal 343 is a compact complete solution for low energy houses. This means brine/water heat pump, DHW cylinder and all components required for integrating a solar heating system – on a foot print of only 600 x 670 mm.

The heart of Vitocal 343 is the Compliant scroll compressor, already well proven in the Vitocal 300 heat pump. The heat pump module is completely enclosed and, therefore, operates with very low noise emissions.

Hot water heating accounts for a substantial part of the total energy consumption of a low energy house. The DHW cylinder with 250 litres capacity, which is integral to Vitocal 343 and which provides a second heat exchanger for connection to a solar heating system, features high draw-off rates and low standby losses. It, therefore, combines economy with the highest DHW convenience.



Vitocal 343
Compact heating tower for low energy houses

Menu guided control unit CD 70

CD 70, the new menu-guided control unit with all functions necessary for weather-compensated heating and an integral solar circuit, also offers the function "Natural cooling". This allows the lower underground temperatures to be used on hot summer days to cool the building interior.



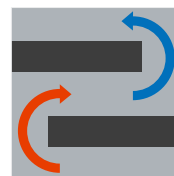
Menu-guided control unit CD 70

Benefits at a glance:

- Compact heating tower for central heating and DHW heating, fully assembled and ready to connect.
- Footprint of only 600 x 670 mm, side clearances for service are not required.
- Ready for connection to a solar heating system. Integral water connection, Solar-Divicon and control unit.
- Integral immersion heater with three stage operation for automatic DHW and heating circuit backup (2, 4, 6 kW).
- Particularly quiet operation through fully enclosed heat pump.
- Refrigerant: R 410 A.
- New menu-guided control unit CD 70 including all control functions for weather-compensated heating, solar circuit and "Natural cooling".
- Output:
 - mono-mode 6 kW,
 - mono-energetic 12 kW.
- Performance factor: (heating mode) 4.3.
- Maximum temperatures: Heat pump 60 °C, immersion heater element 70 °C.
- DHW cylinder capacity: 250 litres.



Optimum conditions for your home and finances – **VITOVENT 300** – modern domestic ventilation



Natural changes of air – essential for health, comfort and the well-being of the building itself – are frequently lacking in low energy homes, because of their airtight construction. The previous practice of airing by opening windows is hardly controllable and no longer appropriate, as it undermines the intended energy-conscious regulation of heat. For these reasons, a domestic ventilation system should be utilised in low energy houses.

These change precisely the correct volume of air, so that windows can stay shut throughout the heating season – without sacrificing ambient air quality.

How does it work?

Ventilation systems constantly refresh the ambient air, removing odours and contaminants. In addition, domestic ventilation systems with heat recovery transfer heat from spent air to the intrushing fresh air. This lowers the ventilation heat demand substantially – so heating costs tumble to a minimum.

Vitovent 300

Vitovent 300 is a compact domestic ventilation system with heat recovery. Exhaust air is routed via a heat exchanger which transfers the heat, in the counter current principle, to the intrushing fresh air. This enables more than 90% of latent heat to be recovered. The benefits to you are obvious: fresh, filtered and pre-heated air in all rooms – whilst your windows stay shut. Occupants are not disturbed by noise or dust, and an effective pollen filter provides clean air to filter class 6 standard. Even those who suffer from allergies can enjoy a perfect climate in low energy houses – any time.

The benefits of Vitovent 300 are also available outside the heating season – thanks to a temperature-controlled bypass circuit, the heat exchanger function, which is not required in summer, is linked out and cool night air is channelled into living spaces.

Benefits at a glance:

- Provides a comfortable and healthy ambient climate.
- Saves heating energy and protects the environment, as the air changes are matched to actual requirements.
- Convenient, demand-dependent operation of the domestic ventilation via remote control.
- Heat recovery better than 90% reduces the ventilation requirement to a minimum and reduces heating costs.
- Integral bypass for cool night air during summer.
- Pollen filters purify the outside air (filter class F6) for improved conditions inside.
- Fungal growth and building damage through excessive humidity are prevented.
- Compact design reduces space requirements; Vitovent 300 can be installed freestanding or wall-mounted.
- Simple and space-saving installation through Fastflex flat channel air distribution ducts.
- Economical DC motors keep the air flow constant, independent of static pressure or air distribution.



Fastflex flat channel air distribution system

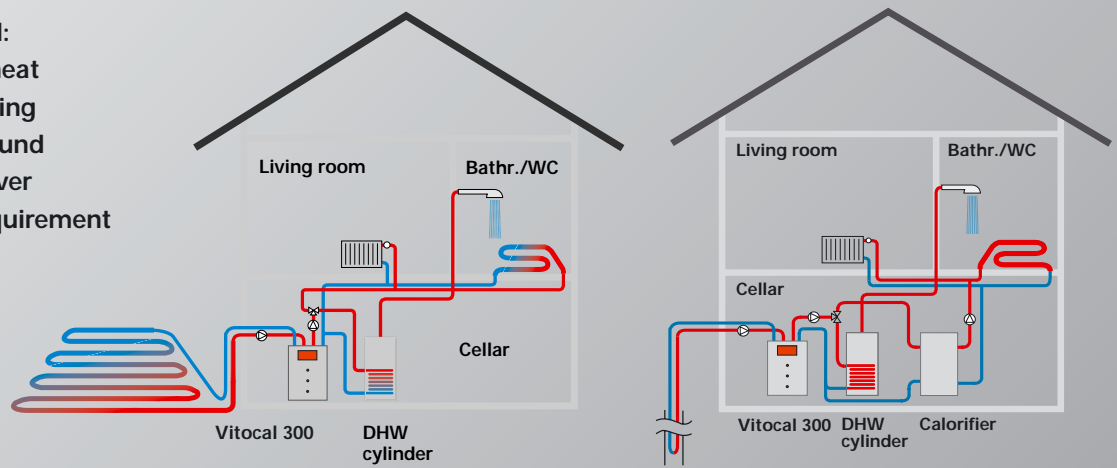


Simple filter changing

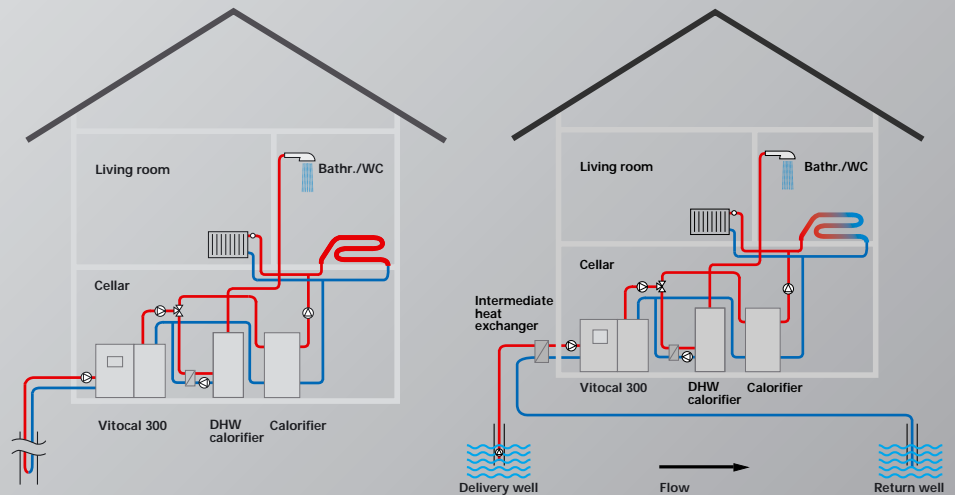
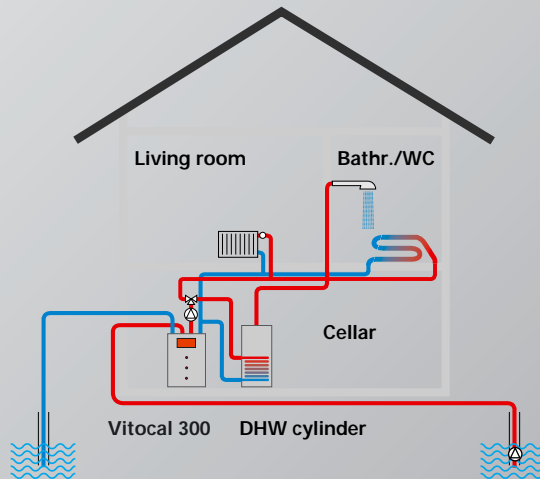


Convenient remote control

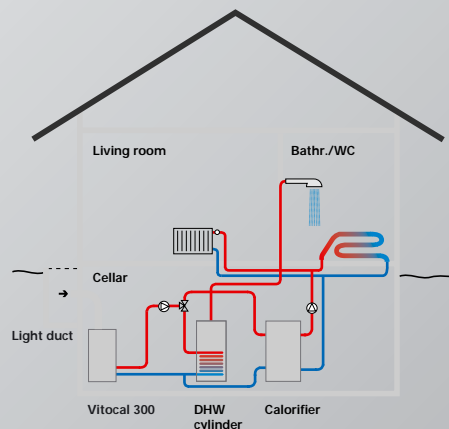
Heat from the ground:
 Vitocal 300 extracts heat from underground using ground probes or ground collectors and can cover the entire heating requirement all year round.



Heat from water:
 Vitocal 300 extracts heat from groundwater which offers a stable temperature, thereby achieving permanently high performance factors – even on colder days.



Heat from the air:
 Vitocal 300 utilises the outside air heated by the sun. On colder days, a second heat source can be used as backup.



VITOCAL 300 VITOCAL 350 Brine/water heat pump	Version	104	106	108	110	113	116	208	212	216	220	226	232	110	
		Vitocal 300 single stage						Vitocal 300 two-stage						Vitocal 350 single stage	
	Performance factor (Brine 0 °C / water 35 °C)	4.36	4.57	4.61	4.50	4.59	4.53	4.35	4.56	4.60	4.49	4.57	4.51	4.31	
	Rated output	kW	4.8	6.4	8.3	10.8	14.0	16.3	9.6	12.8	16.6	21.6	28.0	32.6	11.0
	Cooling output	kW	3.7	5.0	6.5	8.4	11.0	12.7	7.4	10.0	13.0	16.8	22.0	25.4	8.45
	Dimensions (overall) Length x width x height	mm	650 x 600 x 945						650 x 780 x 1245						650 x 600 x 945

Vitocal 350 up to 65 °C flow temperature available from July 2003

VITOCAL 300 VITOCAL 350 Water/water heat pump	Version	104	106	108	110	113	116	208	212	216	220	226	232	110	
		Vitocal 300 single stage						Vitocal 300 two-stage						Vitocal 350 single stage	
	Performance factor (Brine 0 °C / water 35 °C)	5.48	5.60	5.74	5.68	5.90	5.81	5.46	5.58	5.72	5.66	5.87	5.79	5.22	
	Rated output	kW	6.3	8.4	10.9	14.2	18.3	21.5	12.6	16.8	21.8	28.4	36.6	43.0	14.1
	Cooling output	kW	5.15	6.9	9.0	11.7	15.2	17.8	10.3	13.8	18.0	23.4	30.4	35.6	11.4
	Dimensions (overall) Length x width x height	mm	650 x 600 x 945						650 x 780 x 1245						650 x 600 x 945

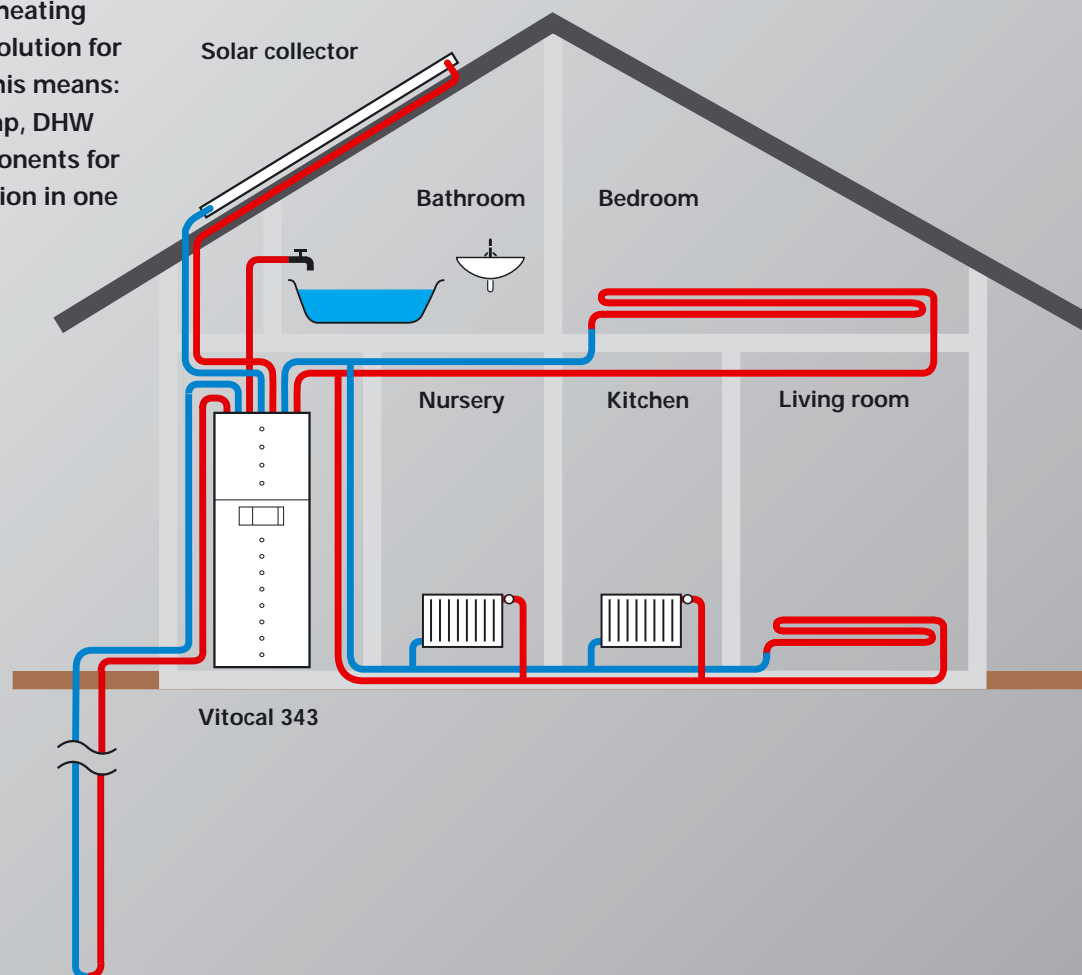
Vitocal 350 up to 65 °C flow temperature available from July 2003

VITOCAL 300 Water/water heat pump	Version		two-stage	240	254	268	280
	Performance factor						
	Water 10 °C/water 35 °C			5.6	5.6	5.6	5.6
	Brine 0 °C/water 35 °C			4.3	4.3	4.3	4.3
	Rated output						
	as water/water heat pump	kW		52.0	73.2	90.2	106.8
	as brine/water heat pump	kW		39.6	55.6	68.6	81.2
	Cooling output						
	as water/water heat pump	kW		42.8	60.0	74.0	87.8
	as brine/water heat pump	kW		30.4	42.7	52.6	62.3
	Dimensions (overall)		mm	Length: 760 / Width: 1200 / Height: 1505			

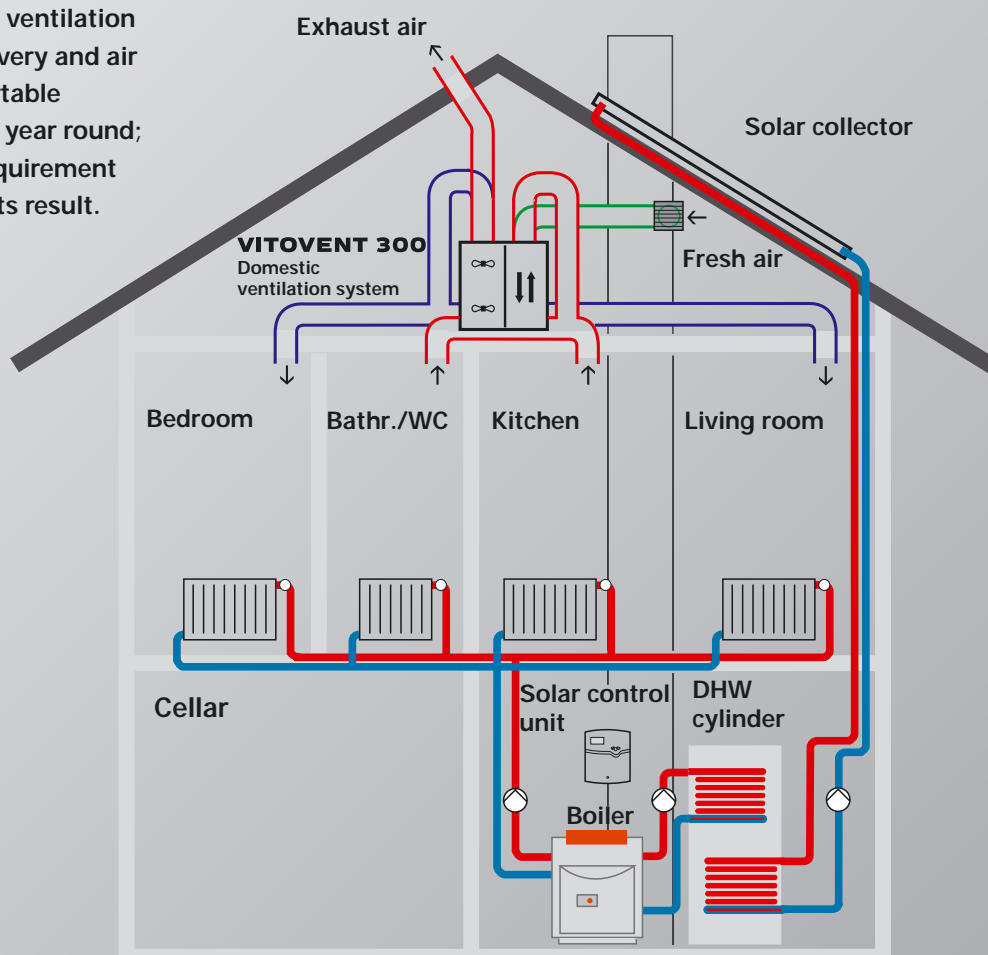
VITOCAL 300 VITOCAL 350 Air/water heat pump	Version	106	108	110	113	116	110	
		Vitocal 300					Vitocal 350	
	Performance factor (Air 2 °C / water 35 °C)	3.18	3.18	3.31	3.21	3.18	3.3	
	Rated output	kW	5.4	7.2	9.3	12.2	14.6	9.4
	Cooling output	kW	3.7	4.95	6.5	8.4	10.2	6.55
	Dimensions (overall) Length x width x height	mm	760 x 1200 x 1510					

Vitocal 350 up to 65 °C flow temperature available from July 2003

Vitocal 343 Compact heating tower is a complete solution for low energy houses. This means: brine/water heat pump, DHW cylinder and all components for solar heating integration in one housing.



Vitovent 300 domestic ventilation system with heat recovery and air pre-heating for comfortable ambient conditions all year round; reduced air heating requirement and lower heating costs result.



VITOCAL 343



Dimensions (overall)

Length x width x height	mm	670 x 600 x 2100
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Brine/water heat pump

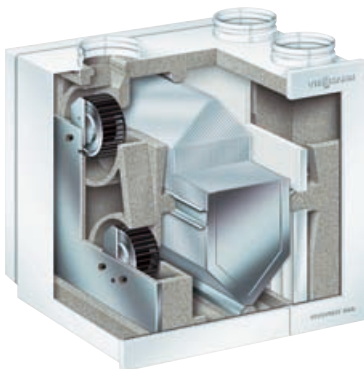
Rated output	kW	6.0
Performance factor (Brine 0 °C/water 35 °C)		4.3

Weight (total)	kg	280
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DHW cylinder capacity	l	250
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Output (total) (incl. 6 kW electrical)	kW	12
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VITOVENT 300



Max. air volume flow (three-stage adjustable)	m ³ /h	50 to 260
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Suitable for houses up to	m ²	180
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Power consumption	W	10 to 120
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Dimensions (overall)

Length	mm	525
Width	mm	675
Height	mm	705

- 4 DN 160 connectors for outside air, extract, ventilation and exhaust air
- Remote control unit with time, program selector switch and "filter dirty" indicator
- Balance control
- Constant volume flow control
- Integral bypass damper



The Viessmann Group

The Viessmann Group employs approximately 6800 staff worldwide and is one of the foremost manufacturers of heating equipment. For freestanding boilers, Viessmann is the most successful brand in Europe. The Viessmann brand stands for competence and innovation. The Viessmann Group offers a comprehensive range of top-quality, high-tech products along with perfectly matched modular components.

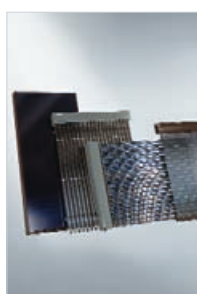
For all their diversity, our products have one thing in common: a consistently high standard of quality that is reflected in operational reliability, energy savings, environmental compatibility and user-friendliness.

Many of our developments point the way forward for the heating sector, both in terms of conventional heating technologies and in the field of renewable forms of energy, such as solar and heat pump technology.

In all our developments we pursue our philosophy of always achieving the greatest possible benefit: for our customers, the environment and our partners, the heating contractors.

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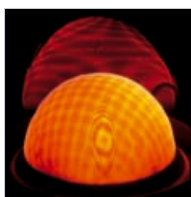
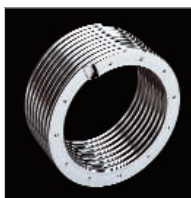
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Viessmann offers you a diverse range of products, which are uniform in quality and adaptable enough to be able to meet any demand and any requirement



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