

GE 420 VP is a ventilation unit containing a cross-flow plate-type heat exchanger, heat pump, air supply and exhaust fans, EU7 air supply bag filter, EU4 exhaust flat filter and complete Optima 300 automatic control with control panel. GE 420 VPK has an additional automatic control for cooling.

GE 420 VP/VPK are available with the following accessories:

- Water-based or electric reheating coil for $\varnothing 200$ mm duct
- Water frost thermostat
- Fresh air and exhaust dampers with motor for $\varnothing 200$ mm duct
- Electric preheating coil
- Thermostatic valve or motorised valve
- Fan monitor



Use

GE 420 VP is used for ventilation systems where exhaust and air supply are required and the energy in the exhaust air is to be used to heat the supply air.

The energy is recovered first via the cross-flow plate-type heat exchanger and then the residual energy is recovered by the heat pump, which also contributes to heating the home. GE 420 VPK is used if the heat pump is required to cool the supply air during warm periods.

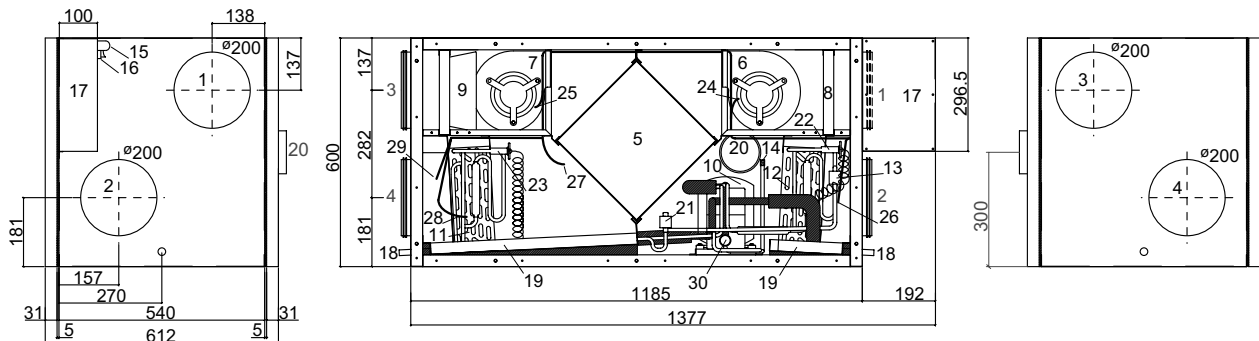
GE 420 VP/VPK are normally used in homes with an area from 160 to 230 m² and a minimum air exchange of 180 m³/h.

Types

- GE 420 VP - H (right-hand)
- GE 420 VP - V (left-hand)
- GE 420 VPK - H (right-hand - as shown)
- GE 420 VPK - V (left-hand)

Dimensioned sketch

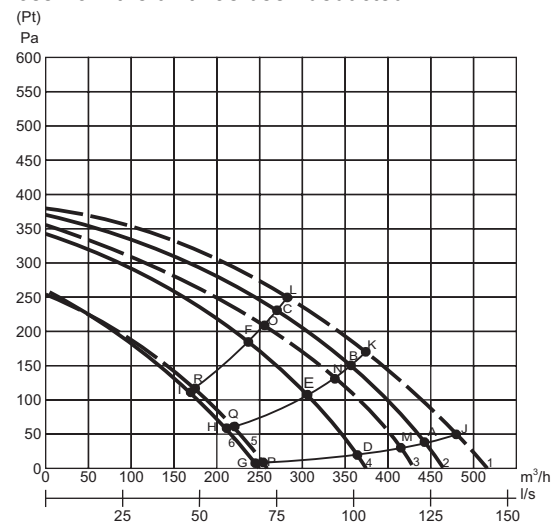
GE 420 VP/VPK
Dimensions in mm



- | | | | |
|-----------------------------|----------------------------|-------------------------------|----------------------------------------|
| 1: Extract air | 9: Bagfilter Supply Air | 17: Terminal box | 24: Sensor Extract air |
| 2: Supply air | 10: Compressor | 18: Drain $\varnothing 15$ | 25: Sensor Incoming air |
| 3: Incoming air (fresh air) | 11: Evaporator | 19: Drip Tray | 26: Sensor Supply air |
| 4: Exhaust air | 12: Condenser | 20: Supply connection duct | 27: Sensor upstream of Cooling surface |
| 5: Cross heat exchanger | 13: High-pressure governor | 21: Solenoid valve Defrosting | 28: Sensor Cooling surface |
| 6: Extract fan | 14: Process valve | 22: Thermo valve Condenser | 29: Sensor Exhaust air |
| 7: Supply fan | 15: Cable entry | 23: Thermo valve Evaporator | 30: 4way valve |
| 8: Plainfilter Extract Air | 16: Switch | | |

Output

The output diagram shows the disposable pressure (P_t) for the duct system, both on the exhaust and supply side. Pressure loss from the unit has been deducted.



- Supply Air with Bagfilter: 1 = 100%, 3 = 70%, 5 = 40%
- Extract and Supply Air with Plainfilter: 1 = 100%, 3 = 70%, 5 = 40%

Input current (Supply Air with Bagfilter)

	A	B	C	D	E	F	G	H	I
Watt	134	122	114	121	113	110	86	80	76

Input current (Extract and Supply Air with Plainfilter)

	J	K	L	M	N	O	P	Q	R
Watt	143	133	125	127	122	119	87	85	84

Technical Data

Electrical Connection

Without electric reheating coil and electric preheating coil

1 x 230V + N + PE 10A, 50 Hz

With electric reheating coil and electric preheating coil

max. 1.2 + 1.0 kW

1 x 230V + N + PE 16A, 50 Hz

Fans with directly coupled motors

D2E 133

Capacitor

4 µF

Motors, 230V AC:

Standard motors

IEC 38

Insulation class

B

Degree of protection

IP 44

Motor size (2 motors):

RPM

1700

Power input (max. per motor)

175 W

Current consumption (max. per motor)

0.77 A

The fans can be individually set to any speed in all 3 speed-levels.

Working range of heat pump

-15°C/+35°C

Compressor

NE 6210GK

Power input (max.) 767 W

Current consumption (max.) 3.3 A

Average output 1800 W

Average power consumption 575 W

Refrigerant R407c

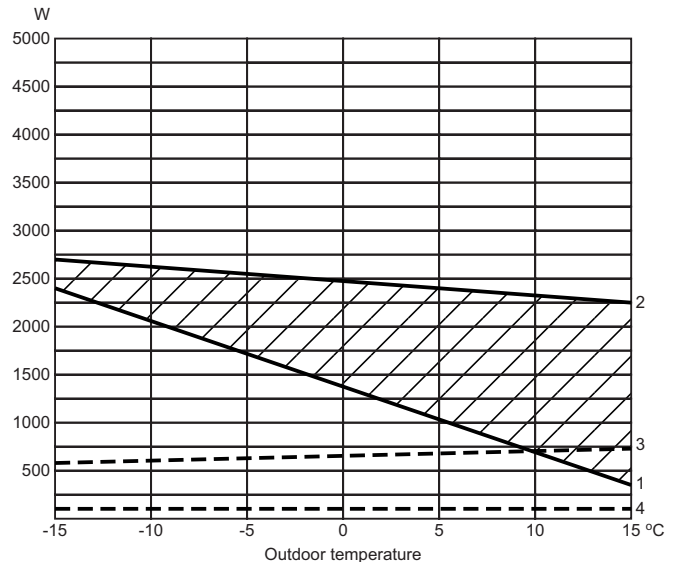
Charge 420 VP/VPC

900/1000 g

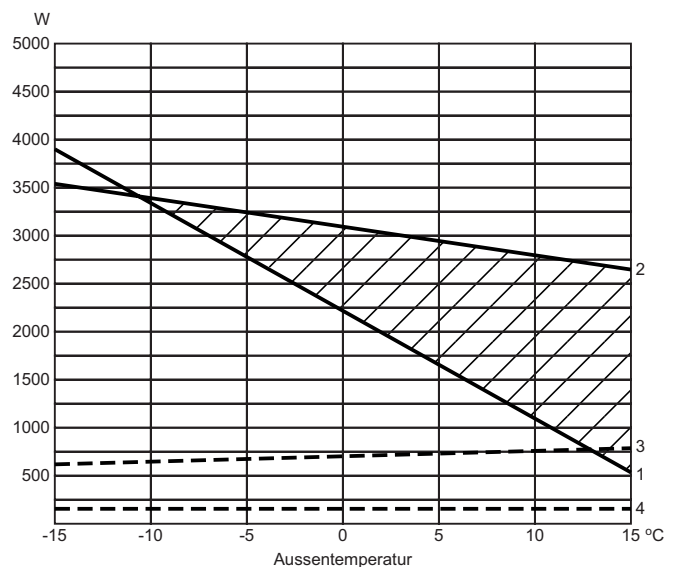
Capacity

The capacity of GE 420 VP/VPC vary with the airflow and fresh air temperature.

Airflow. 200 m³/h.



Airflow 320 m³/h.



- 1) Energy consumption for heating outdoor air (fresh air) to room temperature 20°C.
- 2) Capacity of the unit.
- 3) Power input with compressor running.
- 4) Power input without compressor running.

The hatched area is the GE 420 VP/VPC's contribution to the roomheating.

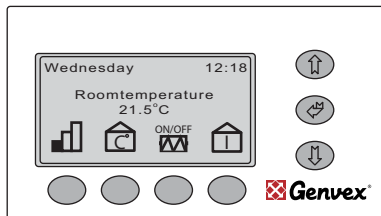
Cooling:

With a outside temperature of 26°C, relative humidity of 45 % and 1/1 speed, the cooling power output is 1580W.

Automatic Control

GE 420 VP/VPC are supplied with complete automatic control - Optima 300 AC together with a control panel and display which show the equipment's operating mode and permit easy change of operating settings.

Control panel



Use this button to change speed between low, medium and high. (Level 1, Level 2, Level 3), or to stop the unit. To stop the unit press the button (3 - 4 seconds) until all levels are switched off. The reheating surface will turn off immediately while the fans will run for about 2 minutes to cool down the reheating surfaces.



Use this button to change the desired room temperature.



Heat pumps of types VP and VPC can be supplied with preheating and reheating surfaces and extra cooling. Enabling will allow these heating and cooling surfaces to switch in if it proves necessary.



Use this button to see all the temperatures in the unit, and press arrow down to see which relays are in operation. This will allow you to gain a quick overview of the unit's operation (see page 4).



If you wish to change the operating settings, press "Arrow up, Arrow down, Enter" to enter the operating menu where these changes can be made.



Press "Arrow down" to change from one menu point to the next. Press "Arrow up" to change from one menu point to the previous one.



If you want to quickly page through the operating menu, you can press "Enter", and this will change the whole page to the next set of menu points.

To change the clock from winter to summer-time hold "Enter" and press "Arrow up" (+1 hour).

To change the clock from summer to winter-time hold "Enter" and press "Arrow down" (-1 hour).

Sound data

Measuring point	1 m in front of unit			Extract duct			Supply duct			
	Airflow rate	1	2	3	1	2	3	1	2	3
		Lo dB			Lwu dB			Lwi dB		
63 Hz	58	59	60	84	87	90	79	85	87	
125 Hz	50	52	53	76	83	85	74	81	84	
250 Hz	43	42	44	68	74	76	66	75	78	
500 Hz	33	33	32	62	69	73	61	65	75	
1000 Hz	25	25	26	53	62	65	50	58	62	
2000 Hz	24	24	24	48	60	64	51	51	56	
4000 Hz	-	18	18	42	56	61	50	51	52	
8000 Hz	-	-	-	30	46	53	46	50	48	
Mean	Lo dB(A)			Lwu dB(A)			Lwi dB(A)			
	40	41	43	65	72	74	62	70	74	

1: Measured at 40% of max. speed with Compressor

2: Measured at 70% of max. speed with Compressor

3: Measured at 100% of max. speed with Compressor

Construction

Main dimensions:

(h x l x d) excl. bosses and electrical box
600 x 1185 x 612 mm

Cabinet structure:

Double-enclosed hot-dip galvanised sheet with 30 mm insulation.
External and internal red powder coating, RAL 3002.

Duct connection:

ø200 mm (nipple dimension) with rubber ring seal

Door:

6 mm screws

Cross-flow plate-type heat exchanger:

Seawater-resistant aluminium

Condensate trays:

Stainless steel

Condensation drain:

Stainless pipe ø15 mm (ext.)

Filters:

Air supply:

EU7 bag filter

Exhaust:

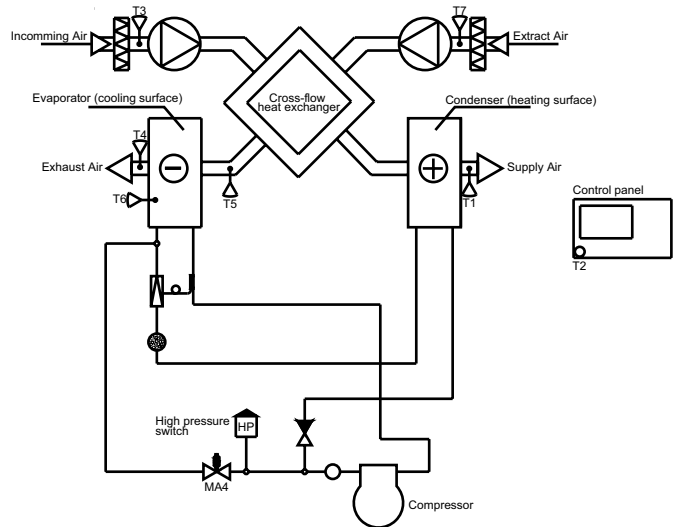
EU4 flat filter

Weight:

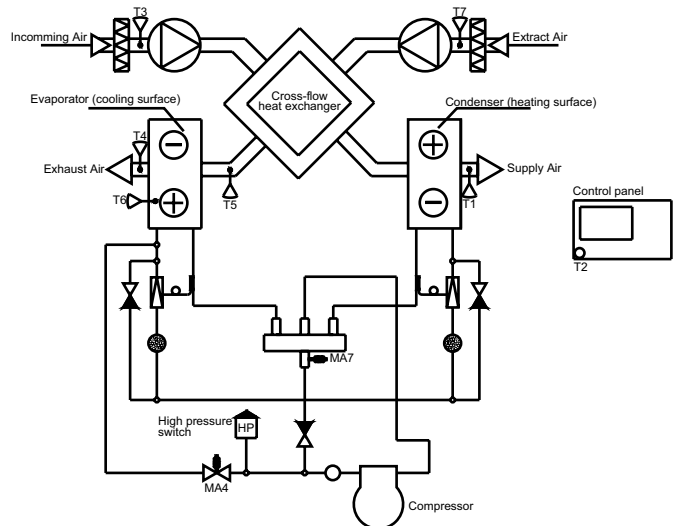
126 kg

Flow diagram

Flowdiagram VP



Flowdiagram VPC



Sensors:

T1: Supply air
T2: Room
T3: Fresh air
T4: Exhaust air
T5: Upstream of cooling surface
T6: Cooling surface
T7: Extract air
T8: Freezing water (For water reheating surface)

Solenoid Valves:

MA4: Defrosting
MA7: Heating/cooling

Accessories

Water-based and electric heating coils and dampers.