

Description

The GE 1590 is a complete ventilation unit consisting of a countercurrent heat exchanger, supply and extract fans with directly connected motors, bagfilter F5 and an internal bypass.

The GE 1590 base model can be supplied with the following optional extras:

- Cooling unit 1590 C
- Roof + sealing for outdoor assemblage
- Plastic-coated lightgrey (RAL 7035)
- Water reheater with 2 or 3 tube range
- Electric reheater (for duct assemblage)
- Outdoor air damper with spring return motor
- Outdoor air damper with
- Exhaust air damper with motor
- Filters F7 or F8
- Frost protection thermostat
- Filter sensors
- Fan sensors
- Freezing control
- Antivibration mountings
- Plastic-coated in other colors

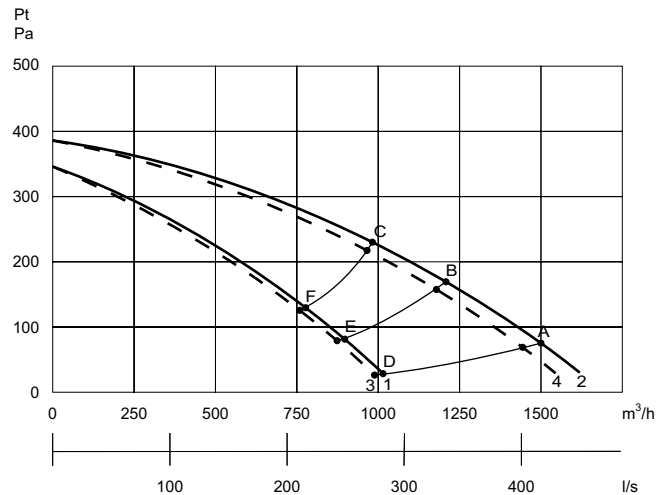
Used in area

GE 1590 is used for ventilation systems, where there is a wish for extract and supply air, and where there is a wish for high efficiency and low nergy consumption. If you have the need for cooling, the aggregate 1590 C can be directly linked to the GE 1590.



Output

The output graph shows the pressure available for the duct system. The pressure loss in the unit has been deducted.

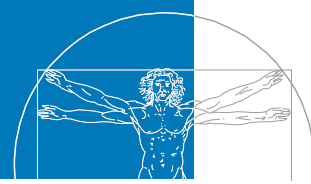


The full drawn lines are GE 1590 at respectively 1/2 (1) and 1/1 (2) speed.

The dot and dash lines are GE 1590 + 1590 C at respectively 1/2 (3) and 1/1 (4) speed.

Pick up effect (pr. fan).

	A	B	C	D	E	F
Watt	430	410	390	214	208	198



Construction

Main dimensions:

(h x l x d) incl. supports and ex. connecting pieces and electric box.

1152 x 2662 x 756 mm

The aggregate will be delivered divided in 3

If the aggregate is delivered with a cooling section the whole length is 3432 mm.

Cabinet construction:

Double-enclosed, hot-galvanised sheet with 50 mm insulation (as BS 30 construction).

Duct connection:

∅315 mm (coupling connector) with rubber ring seal

Doors:

Four doors with handles and cover bolts. 1 door with screws. Cooling sector with 2 gates.

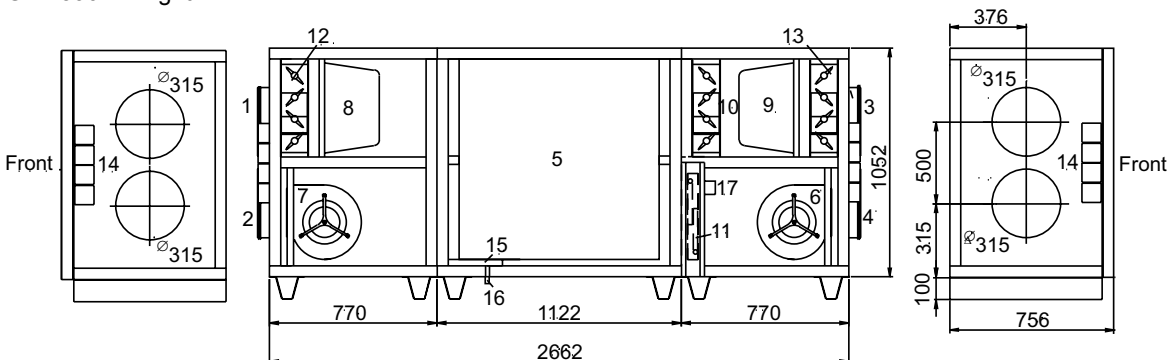
Counter-flow heat exchanger

See water resistant aluminium

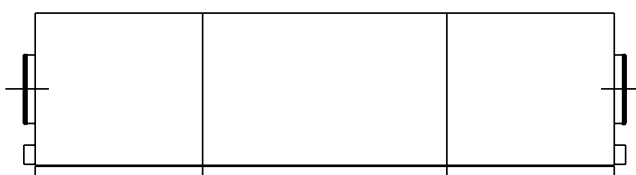
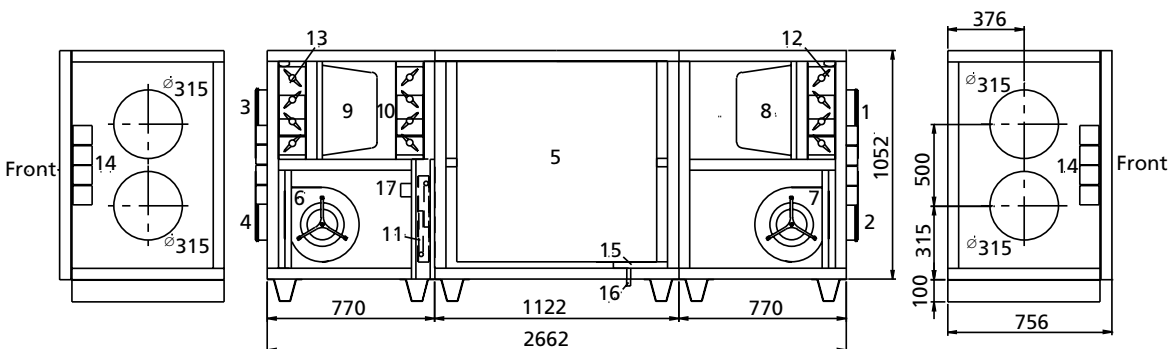
Dimensions

Dimensions in mm

GE 1590 H - right:



GE 1590 V - left:



- | | | |
|--------------------------------|-----------------------|---------------------------------|
| 1: Fresh air | 7: Extract air fan | 13: Exhaust air damper |
| 2: Extract air | 8: Fresh air filter | 14: Electrical contact box |
| 3: Exhaust air | 9: Extract air filter | 15: Condensate reservoir |
| 4: Supply air | 10: Bypassdamper | 16: Condensate drain ∅25 mm |
| 5: Counter flow heat exchanger | 11: Water reheater | 17: Frost protection thermostat |
| 6: Supply air fan | 12: Fresh air damper | |

Condensate drain:

Stainless connection piece ∅25 mm (outside) on the heat exchanger- and cooling section.

Bag filters:

F5 as standard on both supply and extract air. F7 and F8 can be supplied.

Bypass:

Bypass as standard mounted on extract air side.

Water reheater:

Water after heat coil 2 or 3 tube range can be delivered integrated in the aggregate

Electric reheater:

Electric after heat coil will be delivered for duct assemblage on the supply air duct. Duct connection ∅315 mm (coupling connector)

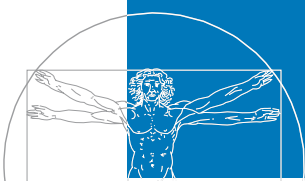
Antivibration mountings:

∅50 mm can be supplied.

Weight:

444 kg (120+190+134 kg)

Cooling section 166 kg



Technical data

Electrical connection

With water reheater 1x230 V + N + PE, 16 A, 50 Hz
 With electrical reheater 3x400 V + N + PE, 20 A, 50 Hz
 With cooling aggregate 3x400 V + N + PE, 16 A, 50 Hz

Fan with directly connected motor D4E 225

Motors:

Normmotors IEC 38
 Isolation class F
 Class IP 22
 Condenser 25 µF

Motor data (2 motors):

Rpm 1150
 W (max. pr. motor) 650W
 A (max. pr. motor) 2,85 A

Bypassdamper:

With modulating dampermotor 24 V.

Fans:

The fans can individually be regulated over the integrated transformer with following voltage outlet: 80, 100, 125, 150, 175, 200, 230 volt.

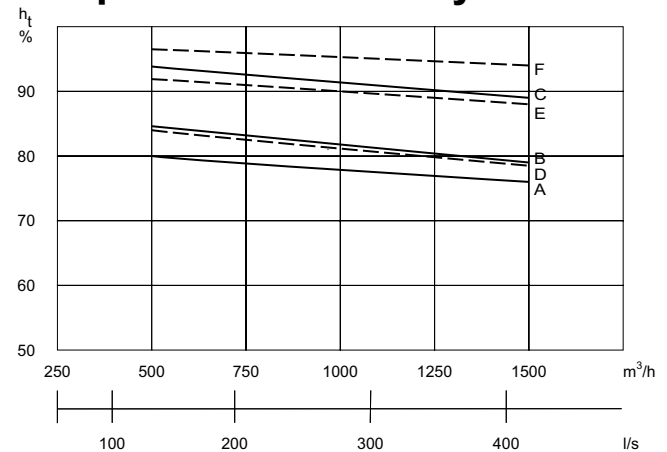
Sound data

Measuring point	1 m in front of unit	Extract duct	Supply duct
Airflow rate	1/2 - 1/1	1/2 - 1/1	1/2 - 1/1
	Lo dB	Lwu dB	Lwi dB
63 Hz	59 65	69 74	81 90
125 Hz	51 58	62 70	75 86
250 Hz	42 49	57 65	71 79
500 Hz	32 37	46 54	71 76
1000 Hz	28 34	44 53	70 75
2000 Hz	27 33	43 52	66 72
4000 Hz	25 30	35 45	65 71
8000 Hz	- 22	24 36	61 68
Average	Lo dB(A)	Lwu dB(A)	Lwi dB(A)
	37 44	52 60	76 81

1/2: indicates an airflow rate of 750 m³/h (125 volt)
 1/1: indicates an airflow rate of 1350 m³/h (230 volt)

Construction changes reserved

Temperature efficiency



	A	B	C	D	E	F
Extract	20	20	20	20	20	20
Relative humidity	30	50	70	30	50	70
Outdoor air	4	4	4	-12	-12	-12

Possible icing up of the heat exchanger at low outdoor temperatures has not been taken into account.

Automatic

A complete control system is available for the GE 1590. It consists of a switchboard with Optima control panel, display, on which functions and operating status are shown, and remote control panel, on which the installation's current operating status can easily be changed for a period.

Electric after heat coil - accessories

1590 EL

It is possible to deliver electrical after heat coil for integrating in $\varnothing 315$ mm duct. $\varnothing 315$ mm (coupling connector) with rubber ring sealing.

Electric after heat coil for duct assemblage.

Effect: 6,0 kW

Voltage: 3 x 400 V

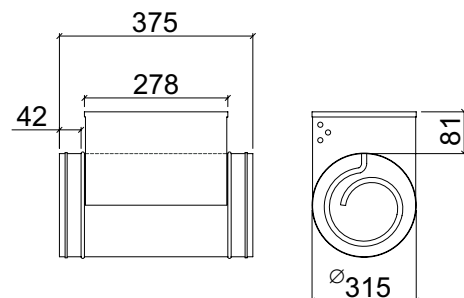
Current consumption: 3 x 8,7 A

Control: Continuously adjustable 0-10 V

Safety fuse of electric after heat coil:

1 piece 120°C fire thermostat with manual reset, 1 piece 70°C overheating fuse with automatic reclosing.

Dimensions in mm

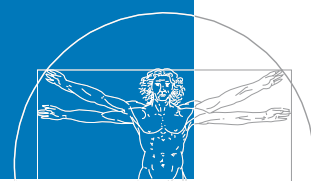


Damper - accessories

Supply air damper with springreturn motor 24 V AC (with water reheater)

Supply air damper with motor 24 V AC (with electrical reheater)

Exhaust damper with motor 24 V AC.



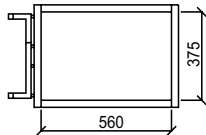
Water reheater - accessories

1590 VA

Water reheater with double or triple pipes built into the unit are available.

Water connection 3/4" pipe thread.

Dimensions in mm



Supply Air control:

Air in 12°C, air out 21°C

Water 70/40°C - double pipes

Airflow rate m³/h	Heat output kW	Water flow rate l/h	Water pressure loss kPa
900	2,8	80	0,1
1100	3,4	98	0,1
1300	4,0	115	0,1
1500	4,6	132	0,2

Air in 12°C, air out 21°C

Water 50/35°C - double pipes

Airflow rate m³/h	Heat output kW	Water flow rate l/h	Water pressure loss kPa
900	2,8	160	0,2
1100	3,4	196	0,3
1300	4,0	230	0,4
1500	4,6	264	0,5

Room control:

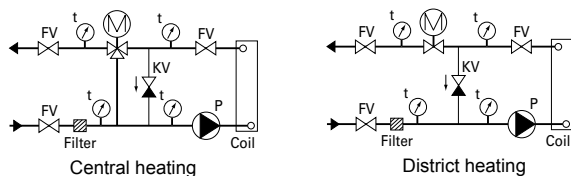
Air in 12°C - Water 70/40°C - triple pipes

Airflow rate m³/h	Heat output kW	Air out °C	Water flow rate l/h	Water pressure loss kPa
900	9,2	42	265	0,7
1100	10,5	40	302	0,9
1300	11,6	38	333	1,1
1500	12,7	37	365	1,3

Air in 12°C - Water 50/35°C - triple pipes

Airflow rate m³/h	Heat output kW	Air out °C	Water flow rate l/h	Water pressure loss kPa
900	6,7	34	385	1,4
1100	7,6	32	436	1,8
1300	8,5	31	488	2,2
1500	9,3	30	534	2,6

The following diagrams can be used for connection to central heating/district heating:



Dimensioning of motorized valve

From the capacity table of the heat coils is it possible to see the dimensioning water amount and in the table below can the valve dimensions 2- and 3-ways valve be chosen.

Valve size	Water flow rate l/h	Kws value	Water pressure loss kPa
15-0,63	80-240	0,63	3-15
15-1,0	240-400	1,0	7-15
15-1,6	400-750	1,6	7-15

Cooling aggregat - accessories

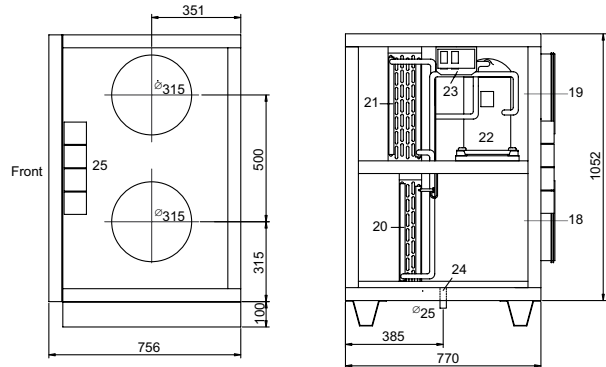
1590 C

The cooling aggregat 1590 C can be coupled directly to GE 1590 on air supply- and air extraction site.

1590 C-H Right-handed (as sketch):

1590 C-V Left-handed

Dimensions in mm



18: Supply

19: Exhaust

20: Evaporator (cooling coil)

21: Condenser

22: Compressor

23: HP/LP pressostat

24: Condensate drain $\varnothing 25$ mm

25: Electrical contact box

Technical data

Compressor:

Scroll.....	ZR 22
Voltage.....	3 x 400 V
Power consumption (max).....	5,1 A

Capacity

Airflow rate 1350 m³/h, exhaust air temperature 26°C RF 50%

Outdoor temp. °C	Relative humidity %	Total cooling performance kW	Take up effect compressor kW	Supply air temp. °C
26	60	6,860	1,600	16
30	50	6,720	1,810	19
34	40	6,610	2,020	21

Automatic

The capacity of the cooling performance will be modulate regulated between 15% and 100% by an energy optimizing of the compressor with a frequency- and pulse regulation.