

## Description

The GE 3090 is a ventilation unit consisting of a countercurrent heat exchanger, supply and extract fans with belt drive and 1 speed motors, bagfilter F5 and an internal bypass.

The GE 3090 base model can be supplied with the following optional extras:

- Cooling unit 3090 C
- Roof + sealing for outdoor assemblage
- Plastic-coated lightgrey (RAL 7035)
- Two-speed motors (Dahlander winding)
- Fans with backward curved fanblades
- Other motor sizes and belt drive gearing
- Water reheater with 2 or 3 rube range
- Electric reheater (for duch 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
- Icing sentinel
- Antivibration mountings
- Plastic-coated in other colors

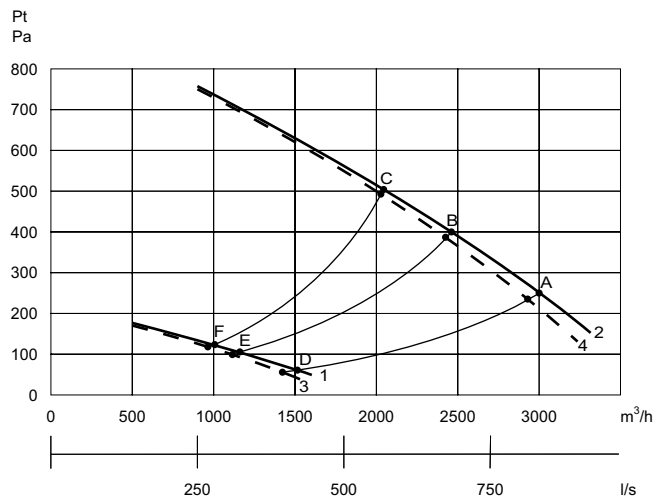
## Used in area

GE 3090 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 energy consumption. If you have the need for cooling, the aggregate 3090 C can be directly linked to the GE 3090.



## 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 3090 at respectively 1/2 (1) and 1/1 (2) speed.

The dot and dash lines are GE 3090 + 3090 C at respectively 1/2 (3) and 1/1 (4) speed.

Pick up effect (pr. fan).

	A	B	C	D	E	F
kW	1,520	1,410	1,280	0,360	0,320	0,290



## Construction

### Main dimensions:

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

1152 x 3036 x 846/1045 mm

The aggregat will be delivered divided in 3.

If the aggregate is delivered with a cooling section the whole length is 4339 mm.

### Cabinet construction:

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

### Duct connection:

∅400 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

### 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 ∅400 mm (coupling connector)

### Antivibration mountings:

∅50 mm can be supplied.

### Weight:

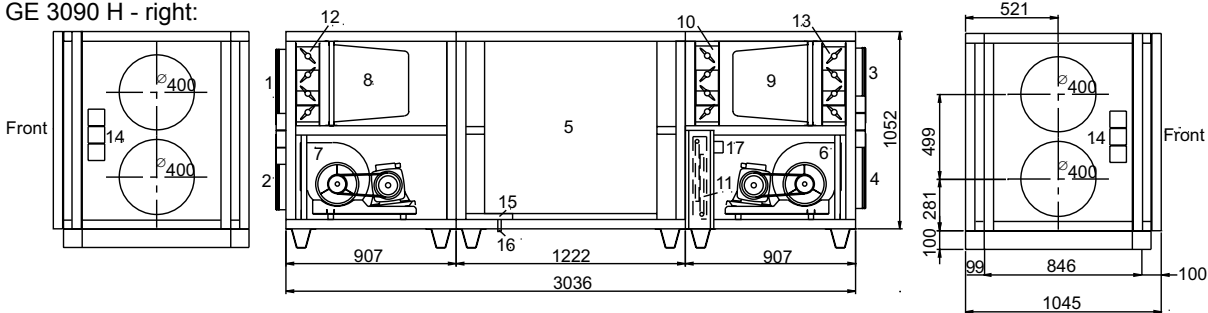
615 kg (165+270+180 kg)

Cooling section 225 kg

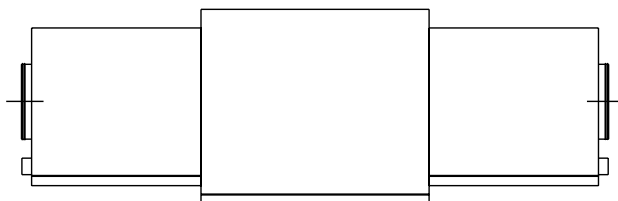
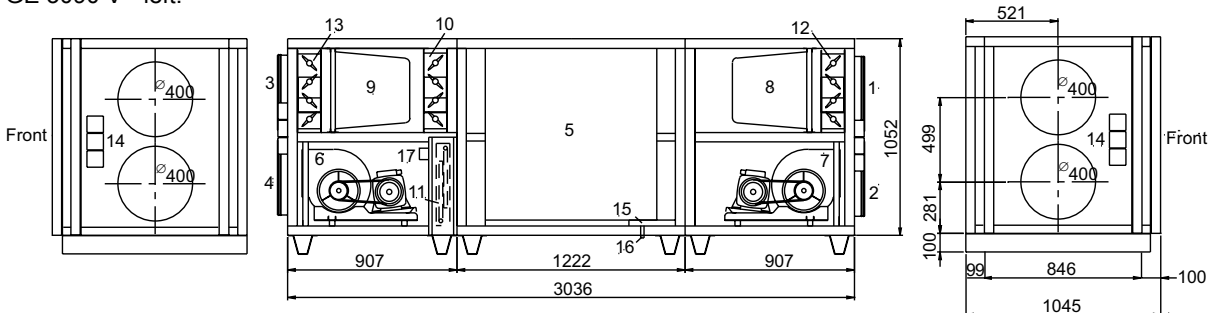
## Dimensions

Dimensions in mm

GE 3090 H - right:



GE 3090 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  |                                 |



## Technical data

### Electrical connection

With water reheater ..... 3x400 V + N + PE, 10 A, 50 Hz  
 With electrical reheater ..... 3x400 V + N + PE, 32 A, 50 Hz  
 With cooling aggregate ..... 3x400 V + N + PE, 20 A, 50 Hz

### Motors:

Normmotors ..... IEC  
 Isolation class ..... B  
 Class ..... IP 54  
 Power supply ..... 3x400 V

### Motor data (2 motors) 1/1 speed:

Rpm ..... 1400  
 kW (max. pr. motor) ..... 1,5 kW  
 A (max. pr. motor) ..... 3,4 A

### Dahlander winding motors 1/2 / 1/1 speed:

Rpm ..... 690/1400  
 kW (max. pr. motor) ..... 0,37/1,5 kW  
 A (max. pr. motor) ..... 1,35/3,7 A  
 Fan ..... GE-D 241-241  
 Belt drive ..... SPZ profil, tape locksystem, 1 track

### Standard belt pulley:

Supply air motor / fan .....  $\varnothing d/\varnothing d$   $\varnothing 118/\varnothing 85$  mm  
 Extract motor / fan .....  $\varnothing d/\varnothing d$   $\varnothing 118/\varnothing 85$  mm

### Bypass damper:

With modulating dampermotor ..... 24 V

### Fans with backward curved fan blades (not standard)

Fan ..... HRZ 225

### Motordata (2 motors) 1/1 speed:

Rpm ..... 2850  
 kW (max. pr. motor) ..... 1,5 kW  
 A (max. pr. motor) ..... 3,4 A

### Dahlander winding motors 1/2 / 1/1 speed:

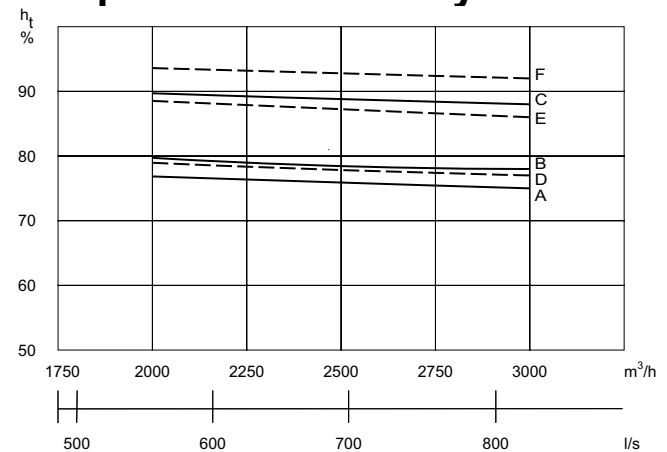
Rpm ..... 1440/2840  
 kW (max. pr. motor) ..... 0,37/1,5 kW  
 A (max. pr. motor) ..... 0,9/3,5 A  
 The belt drive is dimensioned according to the project.

## 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	57 68	85 97	91 99
125 Hz	55 65	77 94	90 94
250 Hz	46 59	72 91	82 92
500 Hz	43 50	61 81	76 87
1000 Hz	36 47	56 74	75 86
2000 Hz	35 46	51 67	73 84
4000 Hz	32 42	40 63	68 81
8000 Hz	28 38	31 53	60 77
Average	Lo dB(A)	Lwu dB(A)	Lwi dB(A)
	45 54	67 81	81 89

1/2: indicates an airflow rate of 1500 m<sup>3</sup>/h  
 1/1: indicates an airflow rate of 2700 m<sup>3</sup>/h

## Temperature efficiency



Temperaturvirkningsgrad, Massestrømmen $m_{ind} = m_{ud}$		A	B	C	D	E	F
Udsugning	°C	20	20	20	20	20	20
Relativ fugtighed	%	30	50	70	30	50	70
Udeluft	°C	4	4	4	-12	-12	-12

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

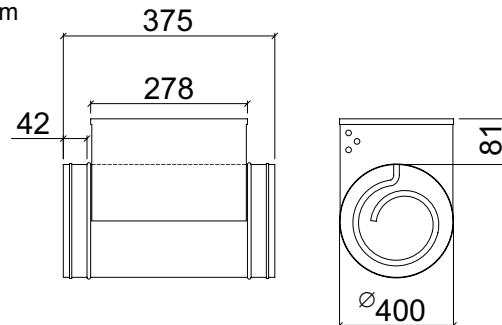
## Automatic

A complete control system is available for the GE 2090. 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.  
 Genvex automatic Optima

## Electric after heat coil - accessories 3090 EL

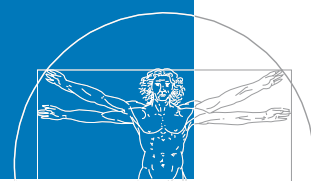
It is possible to deliver electrical after heat coil for integrating in  $\varnothing 400$  mm duct. 400 mm (coupling connector) with rubber ring sealing  
 Effect: 12,0 kW  
 Voltage: 3 x 400 V  
 Current consumption: 3 x 17,4 A  
 Control: Continuously adjustable 0-10 V  
 Safety fuse of electric after 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.



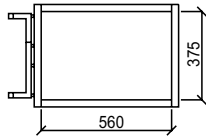
## Water reheater - accessories

### 3090 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
2100	6,4	184	0,3
2400	7,3	210	0,3
2700	8,2	236	0,4
3000	9,1	263	0,5

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
2100	6,4	368	0,9
2400	7,3	420	1,2
2700	8,2	472	1,5
3000	9,1	526	1,8

### Room control:

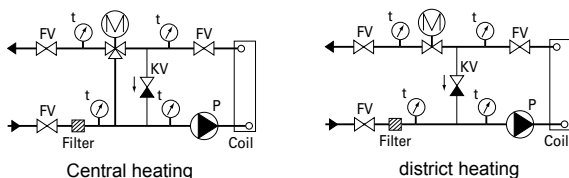
Air in 12°C - Water 70/40°C - triple pipes

Airflow rate m³/h	Heat output kW	Air out °C	Water flow rate l/h	Water pressure loss kPa
2100	15,5	34	445	1,8
2400	16,8	33	482	2,1
2700	18,0	31	517	2,4
3000	19,0	30	546	2,6

Air in 12°C - Water 50/35°C - 3 triple pipes

Airflow rate m³/h	Heat output kW	Air out °C	Water flow rate l/h	Water pressure loss kPa
2100	11,4	28	655	3,8
2400	12,3	27	706	4,3
2700	13,2	26	758	4,9
3000	14,1	25	810	5,5

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 ventil	Water flow rate l/h	Kws value	Water pressure loss kPa
15-0,63	100-240	0,63	3-15
15-1,0	240-400	1,0	7-15
15-1,6	400-750	1,6	7-15
20-2,5	750-1100	2,5	8-15

## Cooling aggregat - accessories

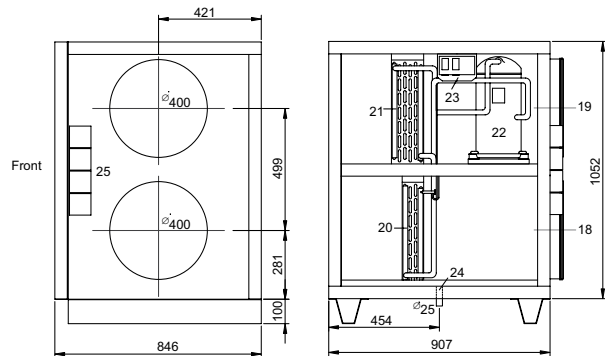
### 3090 C

The cooling aggregat 3090 C can be couplet directly to GE 3090 on air supply- and air extraction site.

3090 C-H Right-handed (as sketch):

3090 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 40

Voltage.....3 x 400 V

Power consumption (max).....8,6 A

### Capacity

Airflow rate 2700 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	12,100	2,950	17
30	50	11,820	3,200	20
34	40	11,600	3,600	22

### 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.