



# REZNOR®

## PREEVA EC

Gas Fired Heating, Ventilation & Cooling Units



ErP Lot 21  
Seasonal Efficiency and  
NOx compliant



 **NORTEK™**  
GLOBAL HVAC



# PREEVA EC

## Gas Fired Heating, Ventilation & Cooling Units

PREEVA EC is a new generation of gas fired air heaters to provide combined heating and ventilation with optional cooling.

The units are available with a wide range of heat outputs and cooling capacities. The units are available as non-condensing heaters with thermal efficiencies above 91% or fully condensing heaters with thermal efficiencies of 102% (ncv).

The design combines high thermal efficiency, quality components and ease of maintenance for enhanced life expectancy and reduced life cycle costs.

The PREEVA EC range incorporates an EC plug fan which provides a wide range of air duties and external static pressures. The addition of the optional mixing box enables air filtration.

### Model Range

PREEVA EC units are available as indoor models (SDH / SHH) or outdoor weatherproof models (RDH / RHH) suitable for rooftop or low level installation.

- > 7 non-condensing models with heat output ranging from 24-97kW
- > 3 fully condensing models with heat output ranging from 54-99kW
- > Cooling 18-65kW
- > Air volumes 1,700-14,000m<sup>3</sup>/h
- > External static pressure up to 400Pa

## Features & Benefits

- > PREEVA EC gas-fired units incorporate patented Tcore<sup>2</sup> 4-pass heat exchanger technology for optimum efficiency and enhanced life expectancy
- > SHH & RHH models also incorporate a patented MacroChannel heat exchanger to provide 8-pass heat exchanger design with full load efficiency of 102%
- > Choice of titanium stabilised aluminised steel or stainless steel heat exchangers to suit application
- > Single burner with multi-try ignition provides enhanced reliability
- > Patented self-aligning burner eliminates possible flame impingement and premature heat exchanger failure
- > Modulating burner fitted as standard. Requires a 0 to 10v DC signal to operate
- > Plug fan with integral EC control

### SmartCom

Environmental issues dictate that buildings need to operate as effectively and efficiently as possible. Initiatives such as the Government's Energy Technology (ECA scheme), together with upgrading Part L of the building Regulations, have resulted in consulting engineers, contractors and end users becoming increasingly energy conscious.

SmartCom3, the intelligent energy management controller satisfies the growing need for higher efficiencies and to complement the development of energy efficient heating systems.

Simple to program and operate, SmartCom3 provides cost-effective energy management for small single heater installations through to large multi-zone applications requiring centralised control.



SmartCom MZ allows up to 16 panels to be linked for centralised control

### Air Distribution Nozzles

For large open areas, air induction nozzles provide even air distribution with automatic high level air recirculation.

The nozzles are capable of an air throw of up to 60 metres and the high volume turnover induced eliminates the requirement to install additional high level recirculation fans.

Nozzles may be grouped on a distribution plenum to provide controlled terminal velocities on both heating and cooling modes or may be supplied complete with mounting plates for fitting to conventional grille shoes.

The rubber nozzles provide excellent acoustic reduction at high outlet velocities and may be adjusted through 60° for controlled air direction.

### Supply Air Fan

The units are ideal for ducted installations with a choice of air volumes and external static pressures up to 400pa (dependent on options fitted). A plug fan with inbuilt EC controller enables Reznor to build the heater to your preferred air duty. Small adjustments can be made at the unit, via a fitted potentiometer to enable on site airflow adjustment for final balancing.

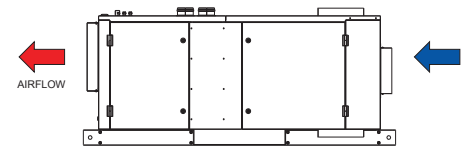
The units may also be used for free-blowing applications with a choice of optional outlet louvres, induction nozzles and 30 or 60 degree downflow heads.

Units may also be supplied with purpose designed air distribution systems.

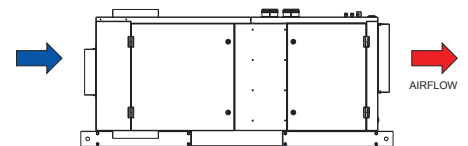
### Unit Handing

All motor and burner controls are accessed from a single side. As standard, units are supplied with access on the left hand side in direction of airflow, however units can be supplied with the controls access on either the right hand or left hand side,

this must be clearly specified at order stage and cannot be changed once the units are manufactured.



Left Hand Access



Right Hand Access

### Construction

All units are supplied factory assembled on a galvanised frame.

SDH & SHH units are supplied with powder coat finish RAL 9010 (white). Other colours may be available on request.

The RDH & RHH outdoor units are supplied fully weatherproof complete with integral gutters and integrated flue terminal and are as standard supplied with zinc plated pre-painted panels.

All units are fitted with thermal and acoustic insulation as standard.

All service access panels are hinged for ease of access with lift off hinges allowing for access where space is restricted.





### Heat exchanger

Patented 4-pass vertical heat exchanger provides high thermal efficiency combined with extended life expectancy. Integral condensate drain between third and fourth pass removes the risk of condensate build up when units operate on fresh air during winter periods.



SHH & RHH models consist of the above heat exchanger with aluminium MacroChannel section to provide increased thermal efficiency up to 102%.

### Burner

Single burner with multi-try ignition provides enhanced reliability.



Patented self-aligning burner eliminates risk of flame impingement and premature heat exchanger failure.

A modulating burner is fitted to each unit as standard - a 0 to 10v DC signal is required.

A microprocessor burner control provides full safety monitoring.

### Flue

Fan assisted flue with venter fan mounted on top of a stainless steel collection chamber.

For SHH & RHH units an epoxy coated aluminium venter fan is fitted.

Balanced flue operation eliminates the requirement for additional plant room ventilation.

Use of the (optional) concentric roof terminal provides both flue outlet & combustion air inlet connections and requires only a single building penetration. Concentric wall terminals are also available.

Units are also CE certified for fan assisted flue installations where combustion air is drawn from within the heated space or ventilated plant room.

### Optional Cooling

Optional DX or chilled water cooling coils may be added where comfort cooling is required.

### Controls

Units are supplied fully wired complete with motor controls, an optional

external isolator may also be fitted. Unit electrical protection IP20.

### Air handling

Each unit is fitted with a plug fan with fitted EC motor control.

### Air Distribution

The units are ideal for ducted installations with a choice of motor size and drives to provide external static pressures up to 400 pascal (dependent on options fitted)

The units may also be used for free-blowing applications with a choice of optional outlet louvres, induction nozzles and 30 or 60 degree downflow heads.

Units may also be supplied with purpose designed air distribution systems.

### Mixing box

An optional mixing section is available that can contain aluminium aerofoil section dampers complete with edge seals for precise control of fresh air and recirculation air.

A comprehensive range of damper actuators may be factory fitted and wired to provide occupancy ventilation or fresh air free cooling.

A wide range of filters are available with optional manometer or pressure switch to provide dirty filter indication.



### **Service Access**

Motors and burners are accessed from a single side. Units can be supplied with the controls access on either the

right hand or left hand side, this must be clearly specified at order stage and cannot be changed once the units are manufactured.

### **SDH Internal unit with optional filter/mixing section**



### **RDH External unit with optional filter/mixing section & Fresh Air Intake Hood**





## Flue Installation

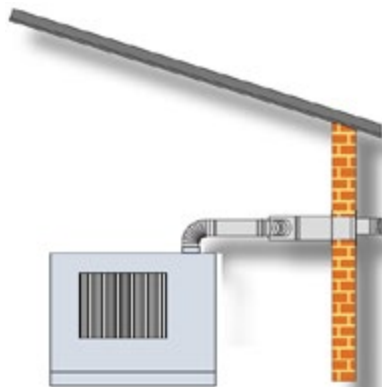
For internal applications, the balanced flue terminal provides both the combustion air inlet and flue outlet from a single building penetration. The terminals are ordered separately from the heaters to suit either a wall outlet or roof outlet. Additional flue and combustion air pipes may be added, up to a maximum of nine metres of flue pipe, plus nine metres (7.5m on model 100) of combustion air pipe. (This reduces by 1.5 metres for every 90° bend fitted).

A differential pressure switch shuts down the unit in the event of inadequate combustion air, blocked flue or flue fan failure.

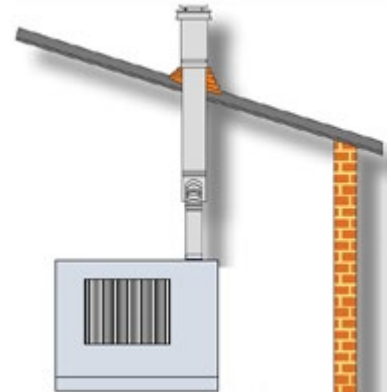
To comply with CE approvals, balanced flue appliances must be used with the manufacturer's balanced flue system.

The units are also certified for fan assisted flue installations, where the combustion air is to be drawn from inside the building; an alternative wall or roof terminal is required for this application. Maximum flue length 14 metres (12 metres on model 100).

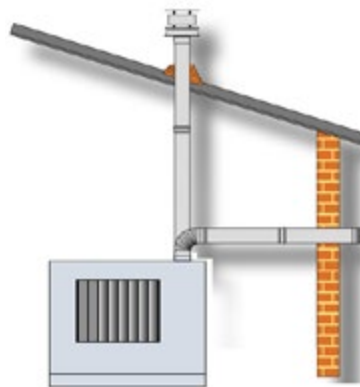
Heater positions and flue arrangements are indicative.  
For heater and flue clearances please refer to installation manual.



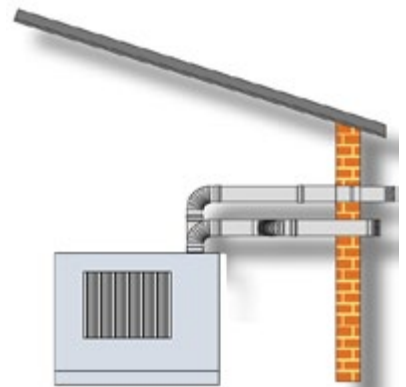
Balanced flue wall outlet (type C12) eliminates expensive roof opening and flashing



Balanced flue roof outlet (type C32)

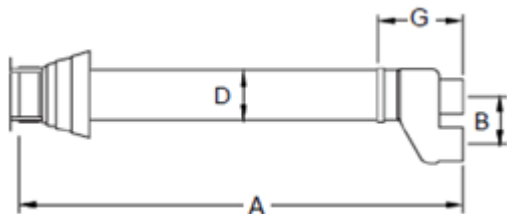


Combustion air through wall, flue outlet through the roof (C52)

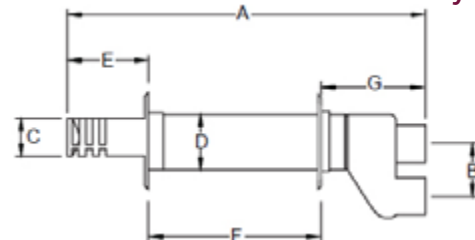


Separate combustion air and flue pipes (type C12) for applications where wall thickness exceeds maximum length shown in flue dimension table

### Vertical Terminal Assembly



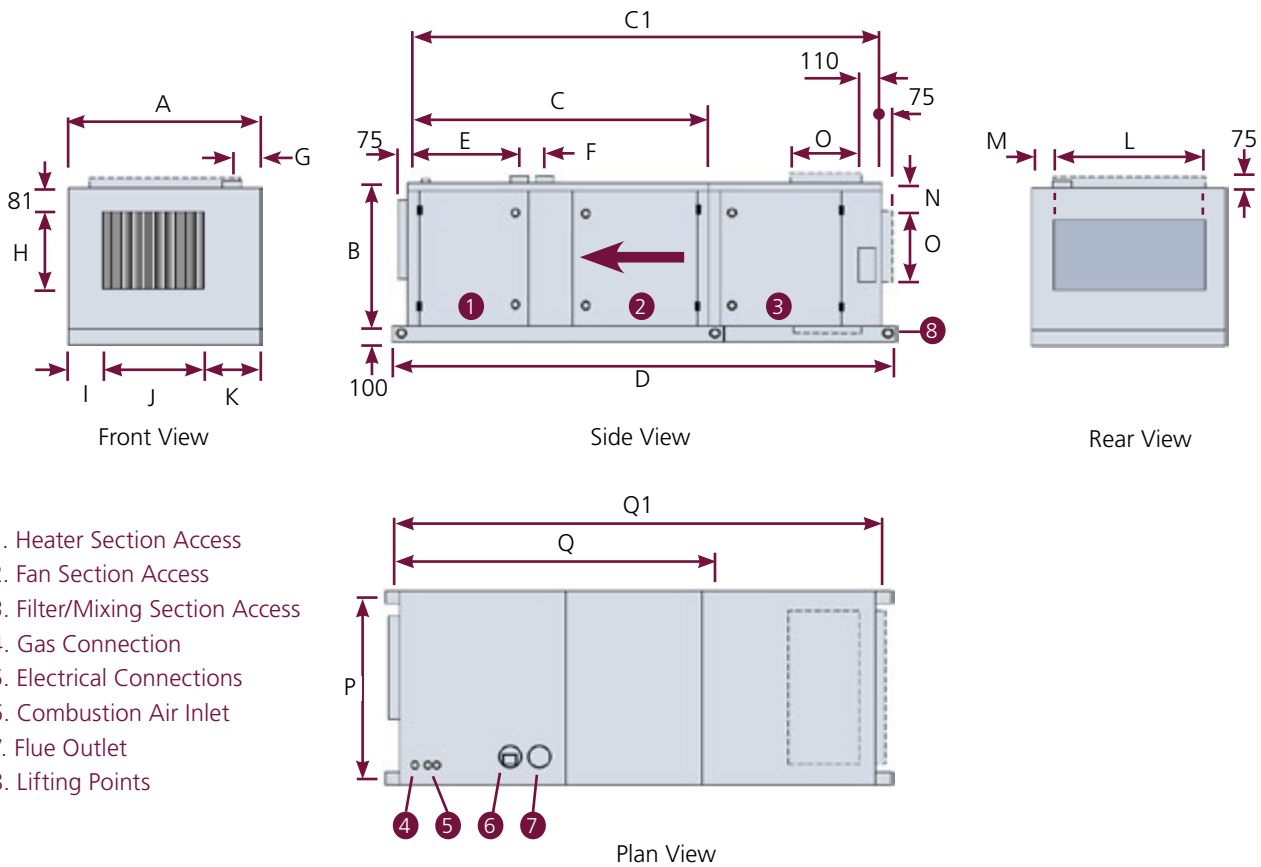
### Horizontal Terminal Assembly



### Concentric Flue Terminal Dimensions (mm)

Model	Vertical concentric flue terminal		Horizontal concentric flue terminal	
	Ø100mm	Ø130mm	Ø100mm	Ø130mm
A	1361	1973	775	940
B	140	225	140	225
C	n/a	n/a	100	130
D	150	200	150	200
E	n/a	n/a	170	180
F (maximum wall thickness)	n/a	n/a	370	370
G	253	355	225	355

## SDH EC Indoor Model

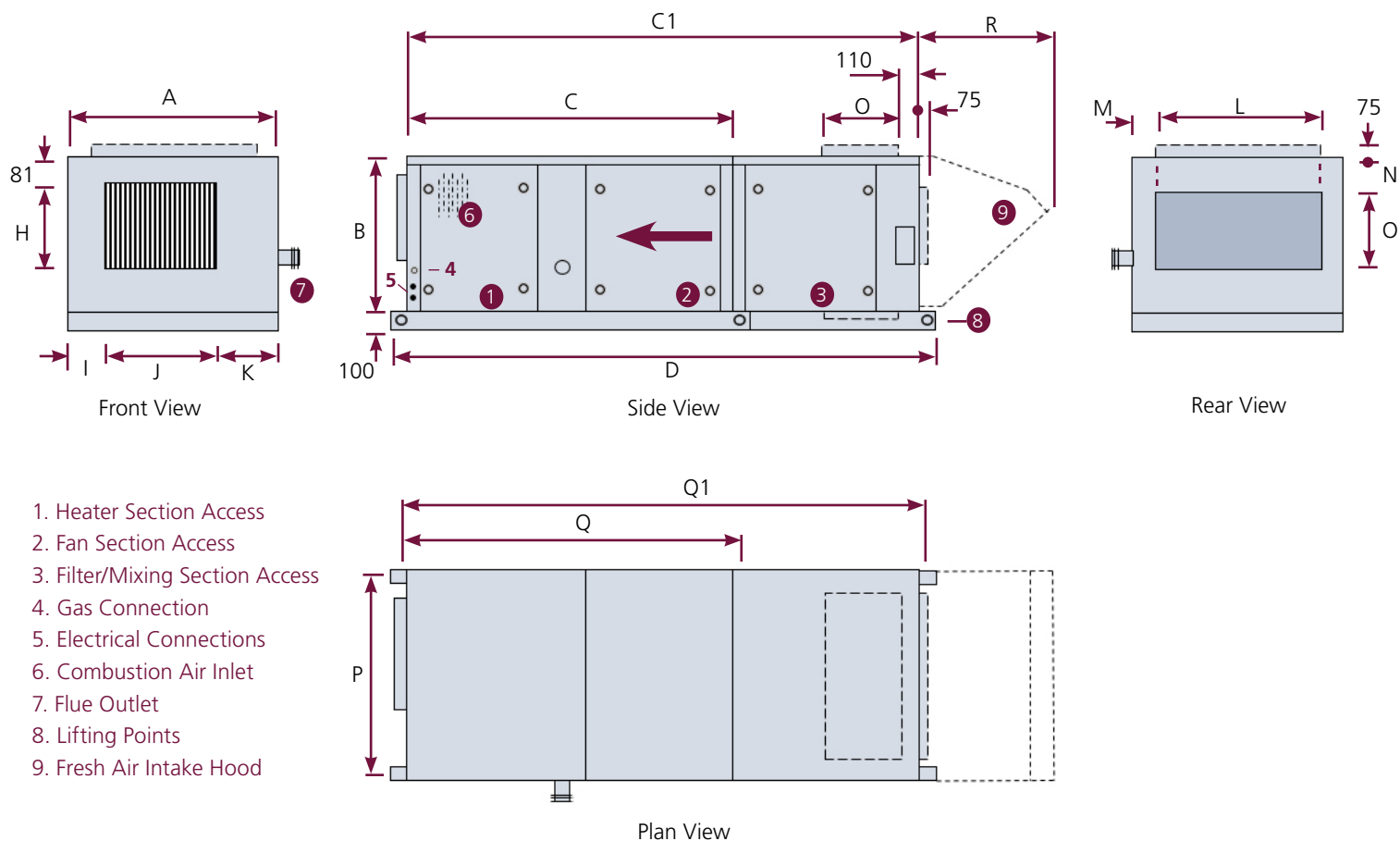


Please contact technical sales for dimensional data for units fitted with cooling coil or additional cabinets.

Dimensions									
Model		SDH25	SDH30	SDH35	SDH43	SDH55	SDH73	SDH100	
A	mm	840	1094	1094	840	840	1268	1468	
B	mm	753	753	753	988	988	988	988	
C	mm	1454	1454	1454	1807	1807	1842	1976	
C1	mm	2474	2474	2474	3000	3000	3034	3168	
D	mm	2674	2674	2674	3200	3200	3234	3368	
E	mm	573	573	573	841	756	764	764	
F	mm	140	140	140	140	225	225	225	
G	mm	190	190	190	190	190	240	240	
H	mm	380	380	380	615	615	615	615	
I	mm	68	68	68	68	68	274	275	
J	mm	502	756	756	502	502	629	820	
K	mm	270	270	270	270	270	365	373	
L	mm	602	702	702	602	602	1002	1202	
M	mm	119	196	196	119	119	133	133	
N	mm	212	212	212	229	229	229	229	
O	mm	302	302	302	502	502	502	502	
P (Lifting centres)	mm	806	1060	1060	806	806	1234	1434	
Q (Lifting centres without filter cabinet)	mm	1584	1584	1584	1937	1937	1972	2106	
Q1 (Lifting centres with filter cabinet)	mm	2604	2604	2604	3129	3129	3164	3298	
Flue & Combustion Air Spigots	mm	100	100	100	130	130	130	130	

For alternative configurations please consult technical sales. Unit shown with left hand access, right hand is available but must be specified at time of ordering as this cannot be changed once unit is built.  
 All Dimensions have a tolerance of +/- 3mm.

## RDH EC Outdoor Model



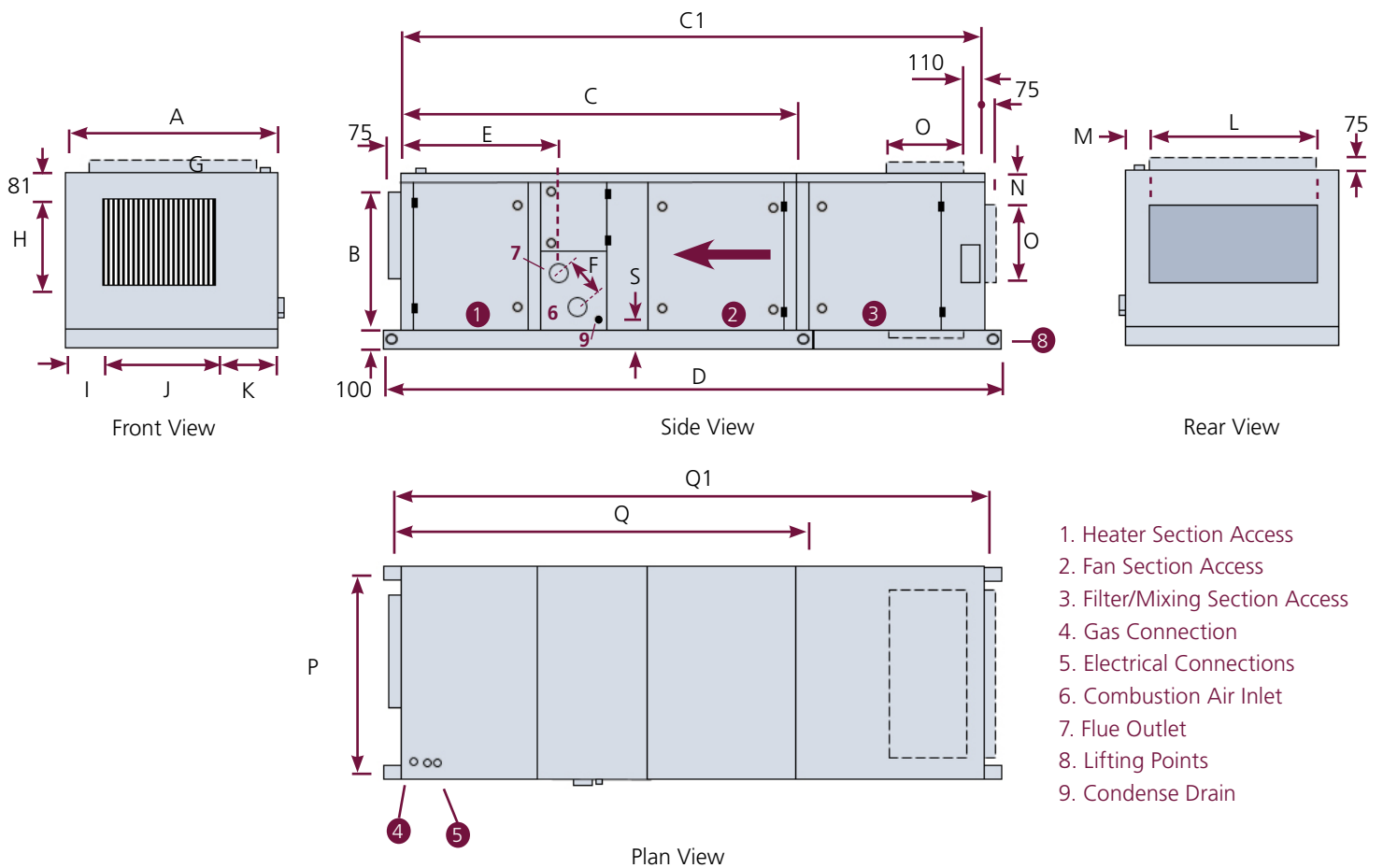
Please contact technical sales for dimensional data for units fitted with cooling coil or additional cabinets.

Dimensions									
Model		RDH25	RDH30	RDH35	RDH43	RDH55	RDH73	RDH100	
A	mm	840	1094	1094	840	840	1268	1468	
B	mm	753	753	753	988	988	988	988	
C	mm	1454	1454	1454	1807	1807	1842	1976	
C1	mm	2474	2474	2474	3000	3000	3034	3168	
D	mm	2674	2674	2674	3200	3200	3234	3368	
H	mm	380	380	380	615	615	615	615	
I	mm	68	68	68	68	68	274	275	
J	mm	502	756	756	502	502	629	820	
K	mm	270	270	270	270	270	365	373	
L	mm	602	702	702	602	602	1002	1202	
M	mm	119	196	196	119	119	133	133	
N	mm	212	212	212	229	229	229	229	
O	mm	302	302	302	502	502	502	502	
P (Lifting centres)	mm	806	1060	1060	806	806	1234	1434	
Q (Lifting centres without filter cabinet)	mm	1584	1584	1584	1937	1937	1972	2106	
Q1 (Lifting centres with filter cabinet)	mm	2604	2604	2604	3129	3129	3164	3298	
R	mm	649	649	649	816	816	816	816	

For alternative configurations please consult technical sales. Unit shown with left hand access, right hand is available but must be specified at time of ordering as this cannot be changed once unit is built. All Dimensions have a tolerance of +/- 3mm.



## SHH EC Indoor Model

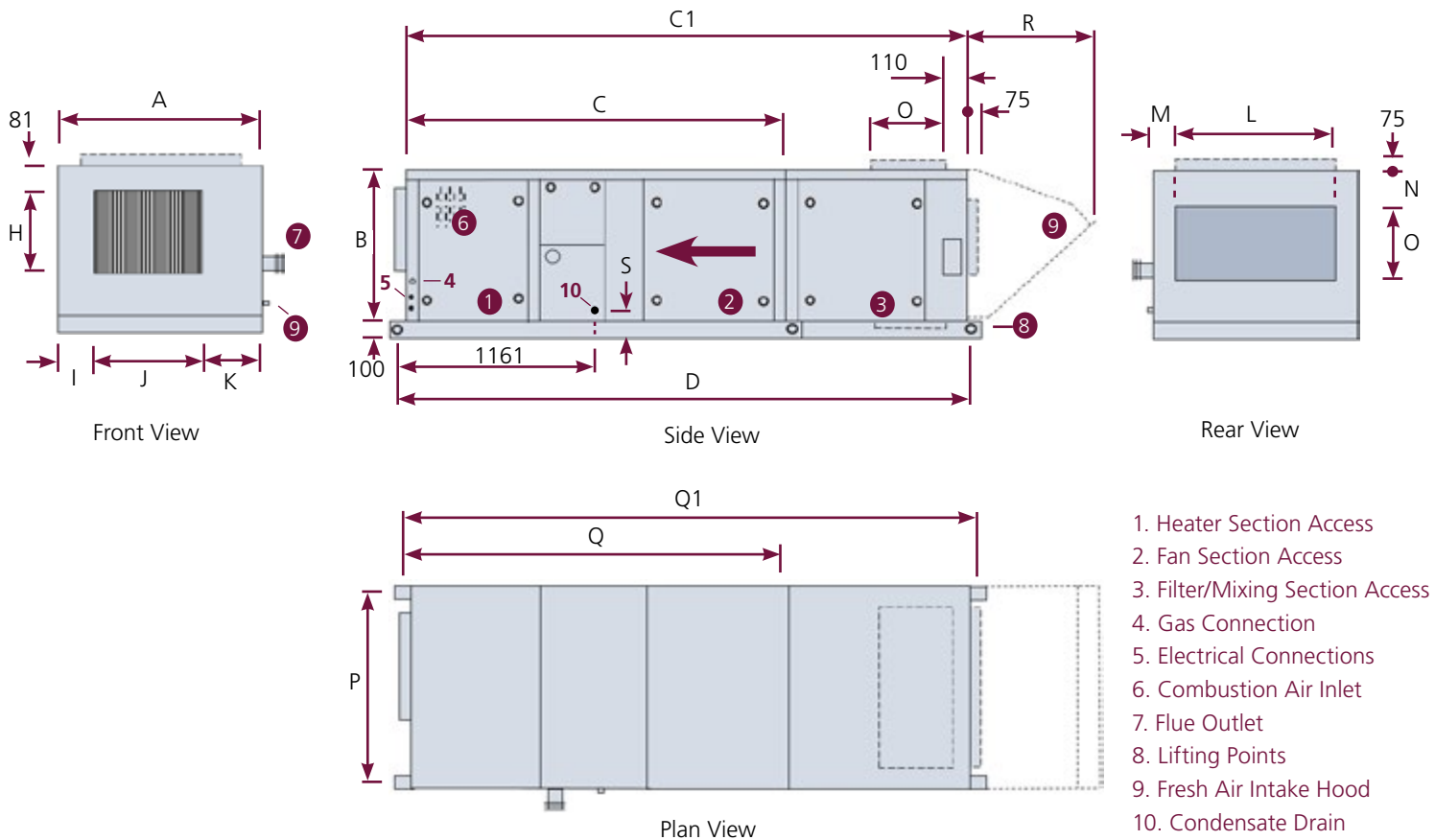


Please contact technical sales for dimensional data for units fitted with cooling coil or additional cabinets.

Dimensions				
Model		SHH55	SHH83	SHH102
A	mm	840	1468	1468
B	mm	988	988	988
C	mm	2260	2412	2412
C1	mm	3452	3604	3604
D	mm	3652	3804	3804
E	mm	940	940	940
F	mm	140	225	225
H	mm	684	684	684
I	mm	29	236	236
J	mm	581	899	899
K	mm	230	333	333
L	mm	602	1202	1202
M	mm	195	412	412
N	mm	231	231	231
O	mm	502	502	502
P (Lifting centres)	mm	806	1434	1434
Q (Lifting centres without filter cabinet)	mm	2390	2542	2542
Q1 (Lifting centres with filter cabinet)	mm	3582	3734	3734
S	mm	224	218	218

For alternative configurations please consult technical sales. Unit shown with left hand access, right hand is available but must be specified at time of ordering as this cannot be changed once unit is built. All Dimensions have a tolerance of +/- 3mm.

## RHH EC Outdoor Model



Please contact technical sales for dimensional data for units fitted with cooling coil or additional cabinets.

Dimensions				
Model		RHH55	RHH83	RHH102
A	mm	840	1468	1468
B	mm	988	988	988
C	mm	2260	2412	2412
C1	mm	3452	3604	3604
D	mm	3652	3804	3804
H	mm	684	684	684
I	mm	29	236	236
J	mm	581	899	899
K	mm	230	333	333
L	mm	602	1202	1202
M	mm	195	412	412
N	mm	229	229	229
O	mm	502	502	502
P (Lifting centres)	mm	806	1434	1434
Q (Lifting centres without filter cabinet)	mm	2390	2542	2542
Q1 (Lifting centres with filter cabinet)	mm	3582	3734	3734
R	mm	816	816	816
S	mm	224	218	218

For alternative configurations please consult technical sales. Unit shown with left hand access, right hand is available but must be specified at time of ordering as this cannot be changed once unit is built. All Dimensions have a tolerance of +/- 3mm.

## SDH & RDH EC Technical Data

Model		SDH25 RDH25	SDH30 RDH30	SDH35 RDH35	SDH43 RDH43	SDH55 RDH55	SDH73 RDH73	SDH100 RDH100
Nominal heat output	kW	24	29	35	42	54	73	97
Minimum thermal efficiency (H <sub>1</sub> )	kW	91	91	91	91	91	91	91
Gas Consumption <sup>1</sup>								
Natural gas G20	m <sup>3</sup> /h	2.77	3.35	4.02	4.85	6.30	8.39	11.19
Propane G31	Kg/h	2.04	2.47	2.96	3.57	4.64	6.18	8.24
Gas connection <sup>2</sup>	Rc	¾"	¾"	¾"	¾"	¾"	¾"	¾"
Airflow								
Minimum @ 15°C	m <sup>3</sup> /h	1715	2118	2539	3061	3976	5299	7060
Maximum @ 15°C	m <sup>3</sup> /h	3502	4237	5079	6121	7952	10599	14121
Maximum @nom. cooling capacity	m <sup>3</sup> /h	3500	4200	5100	5750	5750	9800	11800
Output cooling capacity								
Maximum with DX Coil	kW	17	21	29	36	36	50	65
Maximum with cooling water coil	kW	21	24	27	31	31	52	63
Maximum external static pressure	Pa	400						
Maximum flue run (SDH only)	m	9	9	9	9	9	9	7.5
Electrical supply		380/400V 3N - 50Hz (All models)						
Net weight without filter cabinet	Kg	175	188	195	226	249	310	380
with filter cabinet	Kg	275	303	310	350	373	461	545

## SHH & RHH EC Technical Data

Model		SHH55 RHH55	SHH83 RHH83	SHH102 RHH102
Nominal heat output	kW	54	80	99
Gas Consumption <sup>1</sup>				
Natural gas G20	m <sup>3</sup> /h	5.59	8.36	10.26
Propane G31	kg/h	4.12	6.16	7.57
Gas connection <sup>2</sup>	Rc	¾"	¾"	¾"
Airflow				
Minimum @ 15°C	m <sup>3</sup> /h	5500	8500	10000
Maximum @ 15°C	m <sup>3</sup> /h	8500	11800	14000
Maximum with cooling coil	m <sup>3</sup> /h	5750	9800	11800
Maximum cooling capacity				
DX	kW	36	65	65
Chilled water	kW	31	63	63
Maximum flue run (SHH only)	m	9		
Electrical supply		380/400V 3N - 50Hz		
Net weight without filter cabinet	Kg	323	474	493
with filter cabinet	Kg	447	639	658

Gas consumption & outputs based upon natural gas G20 having a calorific value of 10.5kWh/m<sup>3</sup> GCV & Propane G31 14.0kWh/Kg GCV

Minimum gas inlet pressure is a 17.5mbar for natural gas & 37mbar for Propane. Maximum inlet pressure is 50mbar  
Gas connection size is not supply line size





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**Company Standards and Services:**

All products manufactured by Nortek Global HVAC facilities in Europe are tested and approved to CE standards. All European Nortek Global HVAC production facilities are assessed to EN ISO 9001 Quality Assurance. Nortek Global HVAC offer a service to our customers; including budget schemes, on site technical support and a comprehensive after-sales package. Nortek Global HVAC reserves the right to change specifications without prior notice. Errors and omissions excepted.

