Climate for life.

Advance

Mechanical **V**entilation **H**eat **R**ecovery

unit for small dwellings

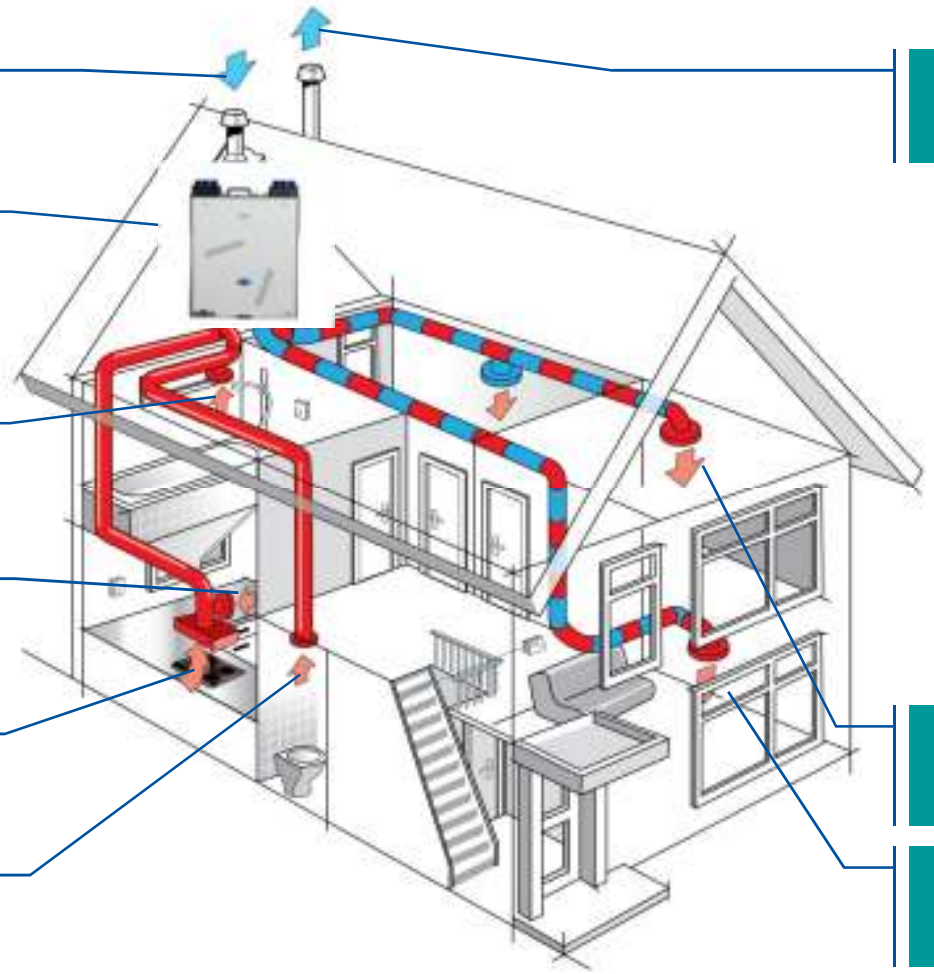
Version: 2011.0 **(Draft)**

Contents:

- MVHR- application
  - System features
- Advance MVHR unit
  - Unit lay-out
  - Dimensions
  - Performance
  - Filters
  - Controls
    - Frost protection
- Installation and commissioning
    - Highlights for good workmanship
    - Mounting and mirroring the unit
    - Electric and remote control connections
    - Silencer in the air ducts
    - Condensate drain connection
    - Maintenance

ITHO Climate for life.

MVHR- application



LivingBlue

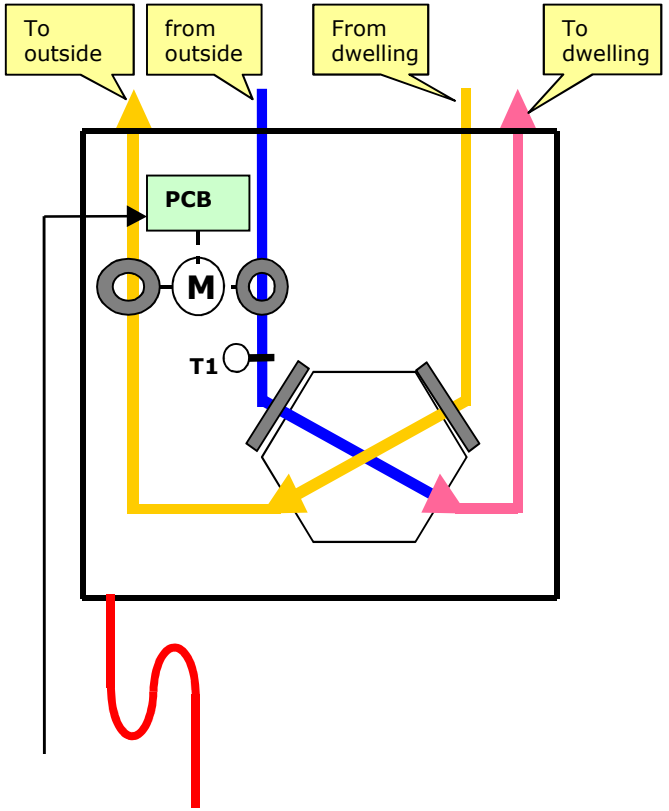
MVHR- system features

- Energy
  - Reduced ventilation heat losses, so a lower energy bill for the occupier
  - Reduced carbon emission to the environment
- Comfort
  - Pre- heated fresh supply air in winter time
- Health
  - Always fresh supply air according to the building regulations
  - In case of full tighten built dwellings, MVHR is the only system to guarantee the required fresh air volumes
- Noise reduction
  - No need for a lot of high expensive inlet grilles in case of a dwelling location in an industrial region

Advance, unit lay-out

Advance

- Hard wired speed selector
- RFT radio controlled speed selector
- Frost protection
- 2 filters
- Condensate drain



Advance, MVHR unit

Motor + 2 fans module, including printed circuit board

Mounting bracket with air duct support and sealed spigots. The unit can be easily removed from the duct support

Supply and exhaust filter

Dimensions:
756 595 285 mm
(Height Width Depth)

Place for user manual

Advance (exploded view)

Advance, assortment

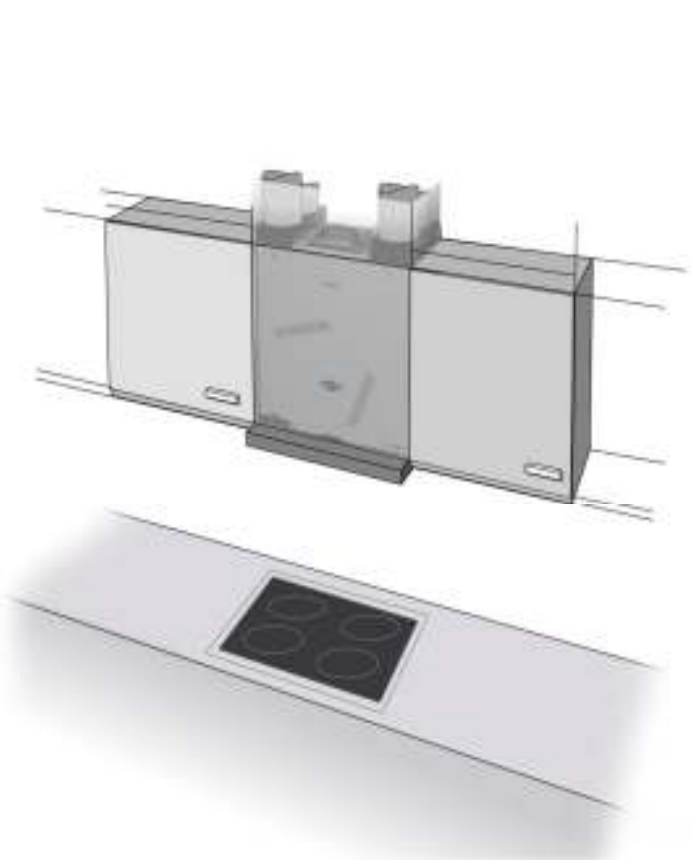
- Only 1 type for apartments and small family houses
- The unit is equipped with:
  - High efficiency fans with one speed controlled DC motor
  - Two potentiometers for manual setting low and high capacity
  - Hard wired trickle, medium and high speed control
  - Built in wireless speed control on printed circuit board
  - Frost protection
- Easy to install, because of low weight and dimensions
  - Just one model for wall-, ceiling and floor mounting
  - Easy mirroring by turning the unit
- Excellent price / performance ratio, compared to others with the same features

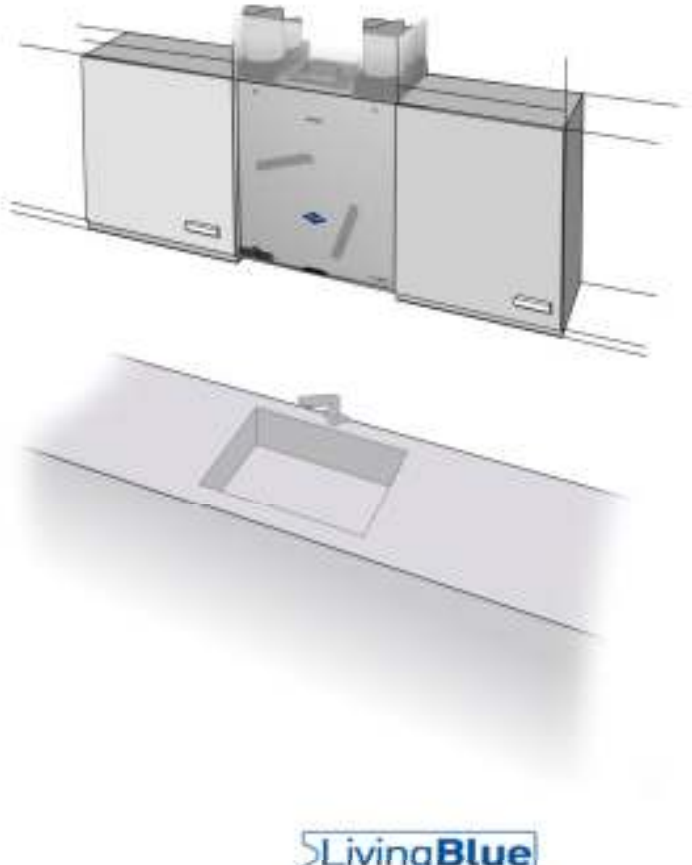
Advance, features

- Less parts and an optimised internal air tightness for a higher performance
- Filters can be replaced without the use of tools
- Compact dimensions, unit can be located in the space of a kitchen cupboard
- Low air speed fans for reduced noise
- Wall-, ceiling-, or floor mounting options
- Self sealing duct connections on the spigots, no tape necessary!
- Can be handed for easy on site installation
- Low weight and easy maintenance by pulling out the unit from the bracket

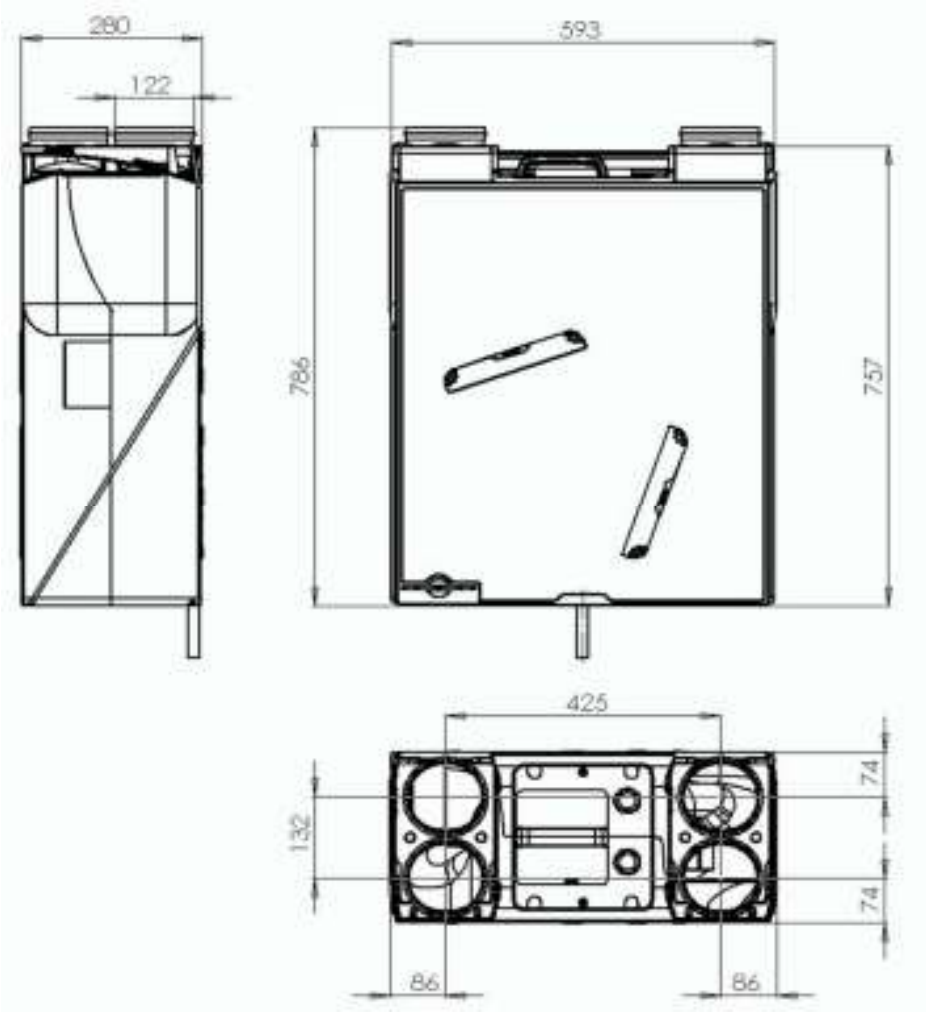
Advance, application

Application in the space of a kitchen cupboard





Advance, dimensions

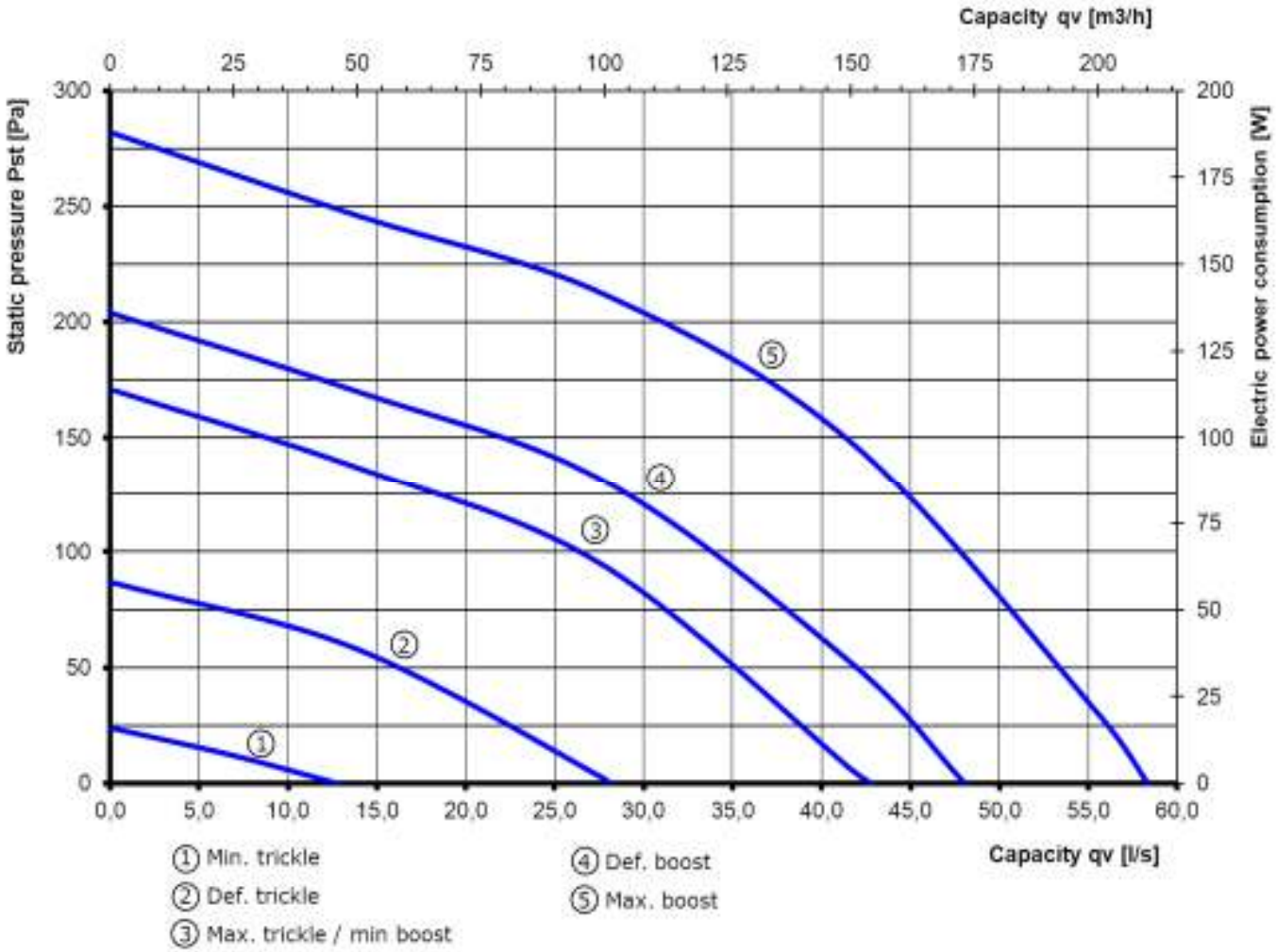


Advance, performance

(Measured by BRE in the UK for SAP- appendix Q test)

Description:	units	Maximum performance	Kitchen + 1 a.w.r	Kitchen + 2 a.w.r	Kitchen + 3 a.w.r	Kitchen + 4 a.w.r
		2 39 l/s 2 140 m^3/h	2 15 l/s 2 54 m^3/h	2 21 l/s 2 76 m^3/h	2 27 l/s 2 97 m^3/h	2 33 l/s 2 140 m^3/h
Heat recovery efficiency	%	-	90	89	88	87
Specific fan power (SFP)	W/l/s	-	0,37	0,48	0,65	0,83
230 VAC current consumption	Amp	0,356	0,05	0,09	0,15	0,23
230 VAC power consumption	Watt	44,1	5,55	10,08	17,55	27,39
Fan speed	rpm	2130	1020	1290	1560	1860
Sound level	dBa	-	-	-	-	-
External pressure available for supply / exhaust duct	Pa	27 / 10	8 / 3	10 / 4	14 / 6	19 / 8

Performance diagram



Advance, filters

- Standard; type G4
- Optional; type F7

Annual inspection required

Can be easily cleaned with a vacuum cleaner
Or replaced, depending on local conditions

Advance, controls

The printed circuit board is equipped with:

- Two potentiometers to set manual low and high speed
- RFT- speed selector on board
- I^2C- connector for optional printed circuit board with other functions (in future)

In:

- Sensor for outside air temperature

Out:

- Fan motor speed control signal

Controls, frost protection

Frost protection active if:

- Outside temperature < fixed set point

Action:

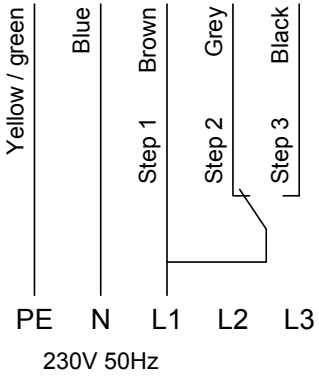
- External signal to control motor speed rpm’s
- Time program for switching fan motor off and on

Advance, speed controls

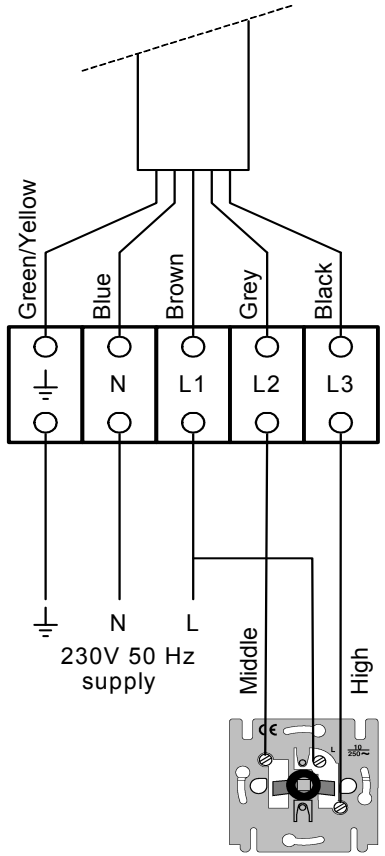
- Hard wired 3- speed selector switch

- Wireless 3-speed switch with timer function
- On one Advance unit, mixed hard wired and wireless speed selection is possible!

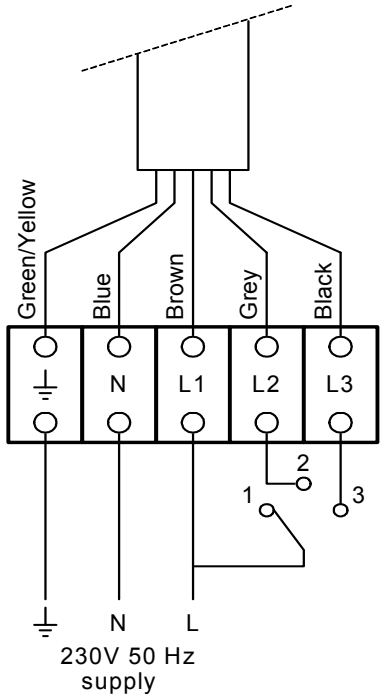
Advance, hard wired speed control



Advance MVHR- unit



Advance MVHR- unit



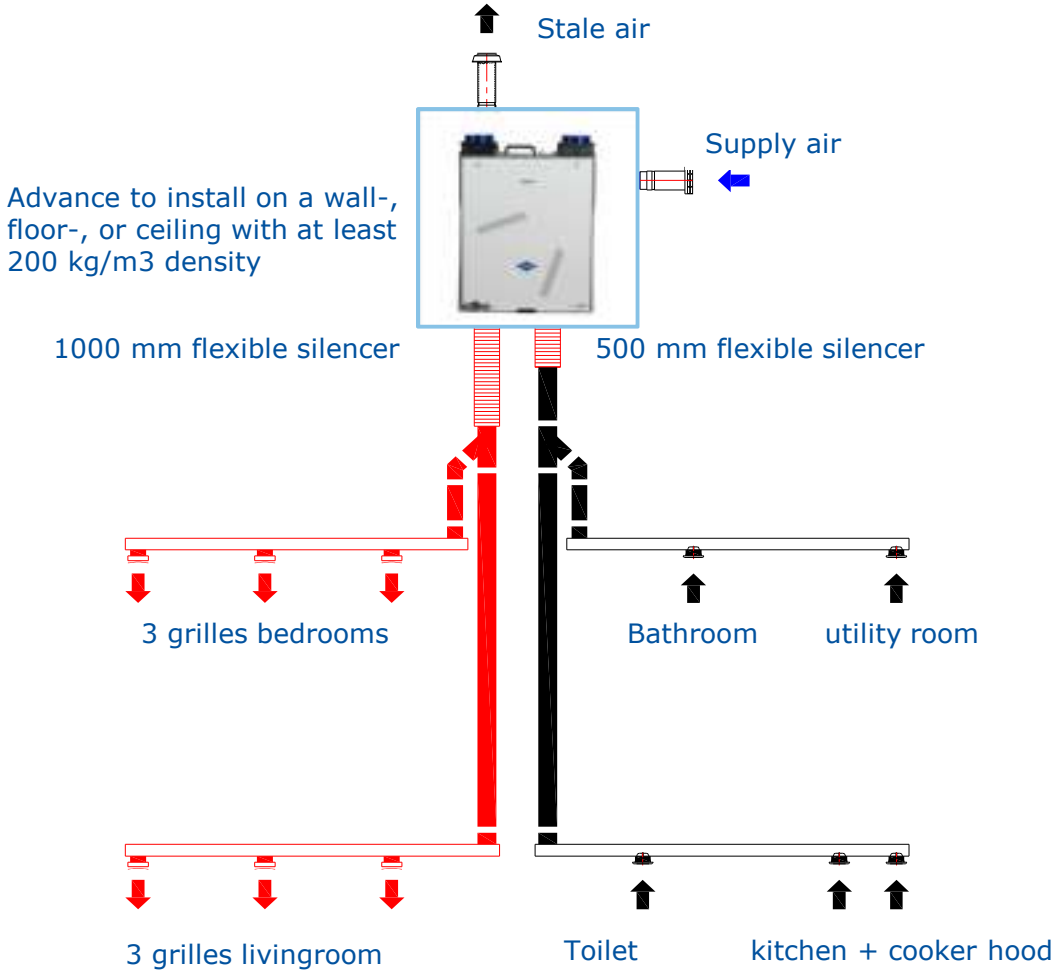
1 Low
2 Middle
3 High

Advance, installation and commissioning

Highlights for good workmanship:

- Air duct design at maximum 100 Pa pressure drop and maximum 4,0 m/s velocity
- Exhaust and supply air duct with equal pressure drop
- Install an electric pre-heater in the supply air from outside to the unit in case of regions with low outside temperature conditions
- Install the unit at a wall with a mass density of at least 200 kg/m^2

Advance, installation and commissioning

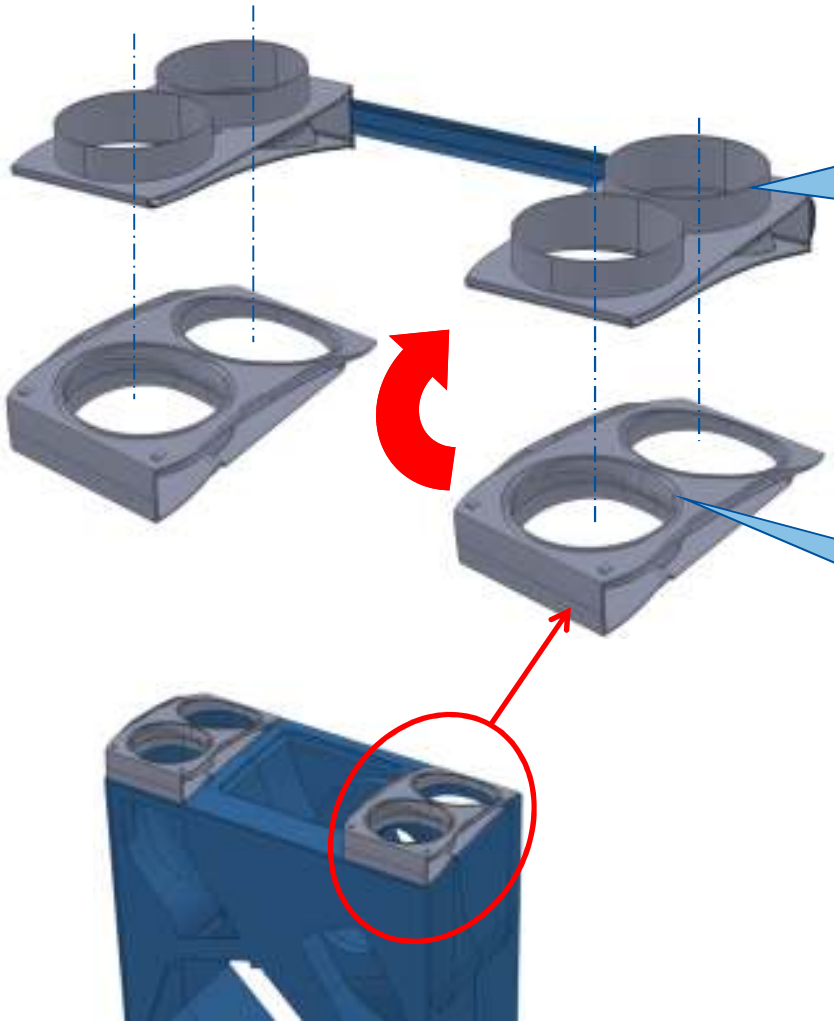


Advance, mounting and mirroring

Easy service, maintenance and commissioning:

- The installed ductwork does not have to be disturbed
- The service technician can easily remove the complete unit, to enable him to do his task in the place he wants
- The fan motor and printed circuit board are easy to access and replace *(if necessary)*

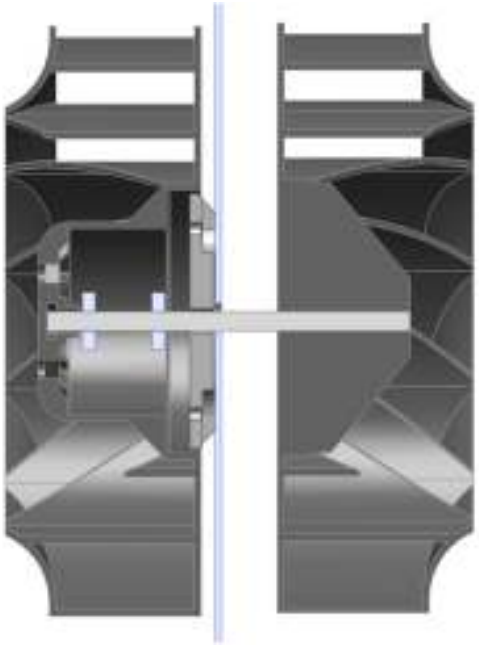
Advance, installing



Flexible spigot sealing for an optimal air tightness between duct and support frame

O- ring, for optimal air tightness between duct and Advance unit

Advance, motor part



Motor part including electronics can easily be taken out

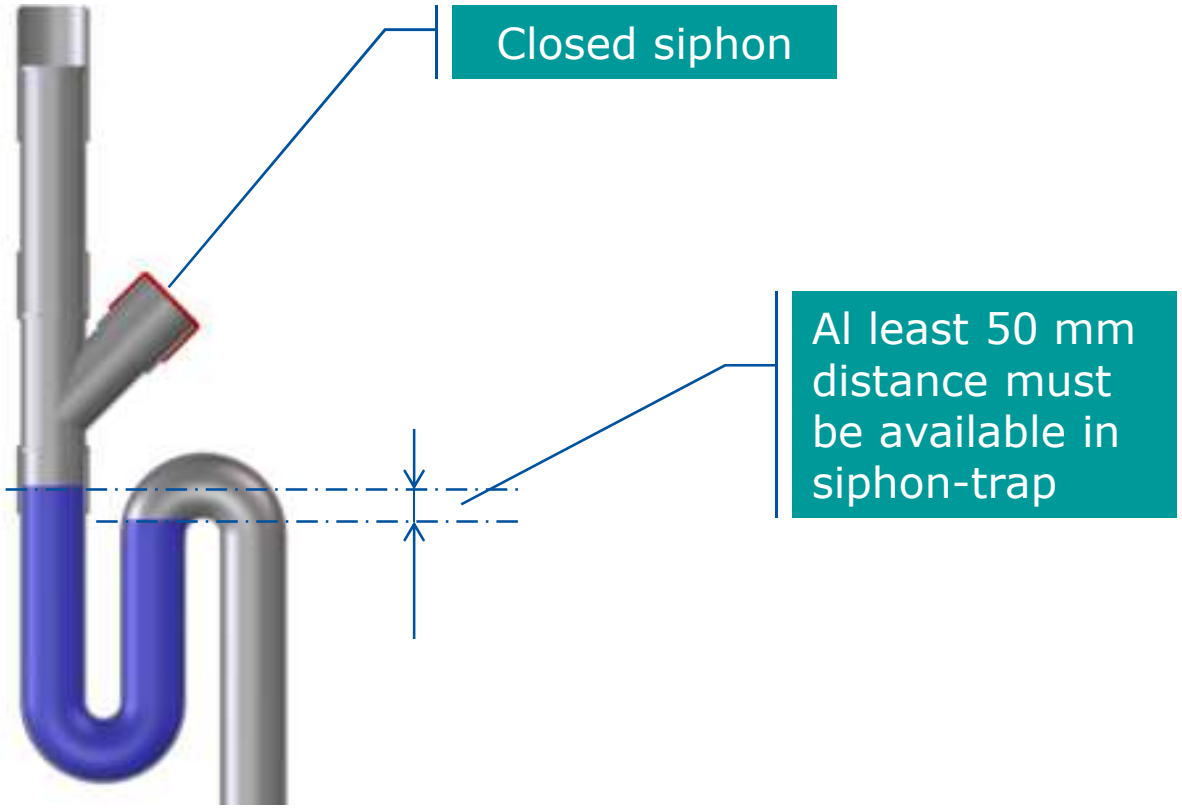
- Just one motor
- 2 coupled fans

Advance, condensate trap

Installation manual:

- Connect the flexible hose to the waste water line
- The end of the hose must be below the water level in the siphon, to avoid a negative air flow
- Check if there is enough water in the siphon

Advance, condensate drain



Climate for life.

Any questions?

Climate for life.

Thank you
for your attention!