

# DUPLEX

## Installation positions

Compact DUPLEX units with heat recovery are supplied in a wide range of versions, installation types and port configurations. This positional versatility is a significant advantage of this series of heat recovery units and makes it considerably easier for the designer to find a perfect spot for installing the air handling unit in a building, both in renovated existing premises and in new buildings.

An optimum port configuration makes installation easier and shortens the length of piping, which results in lower heat loss of the piping and a more economical system.

### VERSIONS

The units are supplied in two basic versions depending on the type of environment:

#### Indoor version

Indoor units are supplied with basic or double insulation. They are intended only for basic environments, i.e. they must not be installed outdoor under any circumstances.

#### Rooftop versions (for outdoor use)

Rooftop units differ from the indoor version particularly in the following:

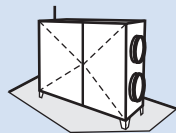
- They always have double insulation
- The unit has a roof to protect it from the weather
- The external surface of the unit is finished with a special paint resistant to weather changes and thanks to its composition it is also suitable for seaside areas
- The structural frame of the unit is made of a special stainless alloy, also resistant to seaside conditions
- The units are optionally supplied with a base frame to make installation on the roof easier; adaptors for passage through the roof may also be supplied (only vertical designs)

### TYPES

The unit type determines its installation position in the building. Individual positions differ mainly in the position of the condensate pan (in winter it collects condensate that forms in the heat recovery exchanger; in summer condensate from the chiller). Other differences include the position of fans (in most motors a horizontal position of the axle is required) and the type of heating and cooling registers used.

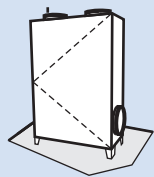
Individual types naturally differ in mounting accessories - see notes for individual types.

#### Floor-standing position (indoor version)



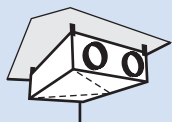
A basic position for installation on the floor or a mounting bracket on the wall. Delivery includes condensate outlets (1 - 3 depending on the unit modification) and feet for the installation of the unit. It is recommended mounting the unit on spring washers.

#### Floor-standing vertical position (indoor version)



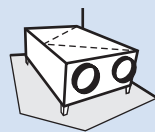
The unit is arranged vertically, may also be installed on the floor or a bracket. Delivery parts identical to the upright position.

#### Ceiling-suspended position (indoor version)



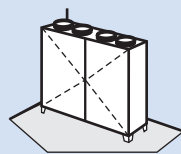
Ideal for confined buildings, thanks to its flat design it may be installed in relatively low spaces. Delivery includes suspension clamps. It is recommended installing the unit on spring washers to prevent the transfer of noise and vibrations into the building structure.

#### Floor-standing position (indoor version)



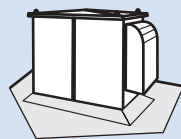
The floor is suitable especially for attics. Delivery includes condensate outlets (1-3 depending on the unit modification) and feet for the installation of the unit.

#### Upright position (indoor version)



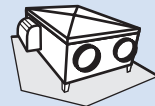
A special DUPLEX unit type with all for connecting ports on the top. Possible medium connections (heating / chilled water; electrical) are also from the top. The unit may be pushed to the wall from both sides or there can be other devices immediately next to it.

#### Vertical position (rooftop version)



A basic rooftop position. This position utilizes the advantage of direct passage through the roof via the base frame with pipe adaptors - this solution makes installation considerably easier; lowers heat loss caused by piping laid on the roof and simplifies the hydro-insulation of the roof shell. Delivery includes condensate outlets (1 - 3 depending on the unit modification, optionally heated) and feet for the installation of the unit. A base frame (with adjustable height) and piping adaptors are optional accessories.

#### Flat position (rooftop version)



The flat position is suitable for buildings where low-height air conditioning system installed on the roof is required, e.g. due to architectural considerations. Furthermore, it is the only rooftop unit type that allows using counterflow heat recovery exchangers. Delivery includes condensate outlets (1 - 3 depending on the unit modification, optionally heated) and feet for the installation of the unit.

### PORT CONFIGURATION

All unit types may be delivered with a range of port configurations, i.e. for most of the ports a position may be selected - standard or atypical. For design reasons it is not possible to deliver all combinations - see notes for individual configurations on the following pages of this brochure. In addition, it is of course possible to select a shape (round, rectangular) and dimensions individually for every port.

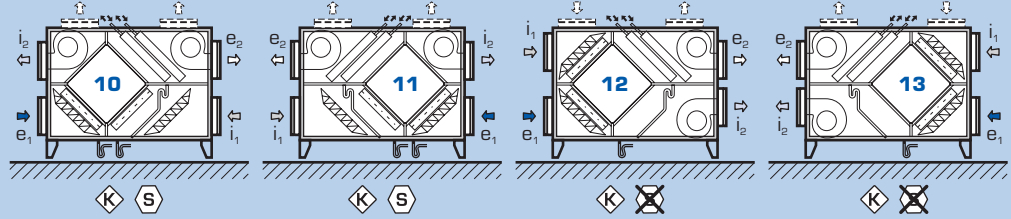
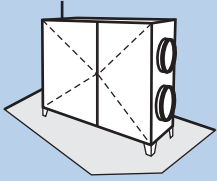
### DESIGN SOFTWARE



To design DUPLEX units it is possible to use the advantage of a special design software, to be found on our website at [www.atrea.cz](http://www.atrea.cz), or send a request to our address. The whole process of selecting a suitable version and configuration of ports is a very intuitive one.

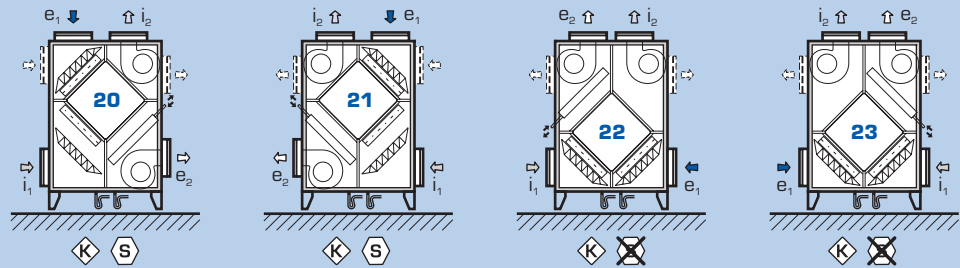
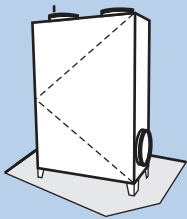
FLOOR-STANDING HORIZONTAL POSITION

position 10, 11 (DUPLEX 2000 - 8000, DUPLEX-S 1500 - 5600) - Access door side view  
 position 12, 13 (DUPLEX 2000 - 15000, DUPLEX-S 1500 - 5600) - Access door side view



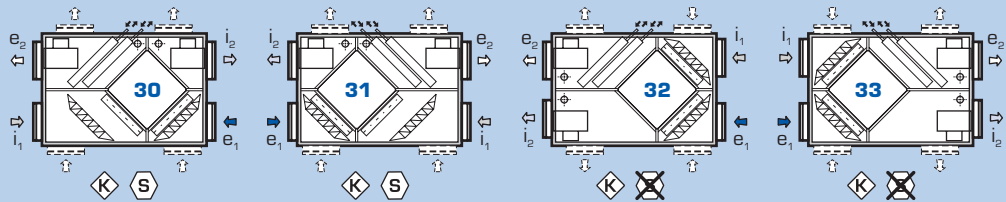
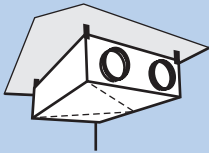
FLOOR-STANDING VERTICAL POSITION

position 20 - 23 (DUPLEX 2000 - 8000, DUPLEX-S 1500 - 5600) - Access door side view  
 (not possible in CHF, CHW modification)



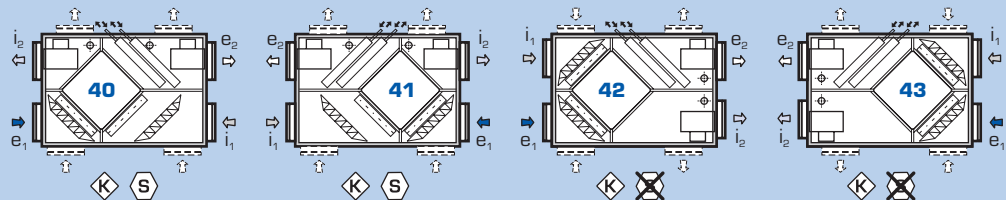
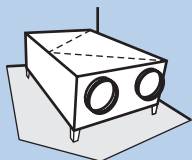
CEILING-SUSPENDED POSITION

position 30 - 33 (DUPLEX 2000 - 6000, DUPLEX-S 1500 - 5600) - Top view



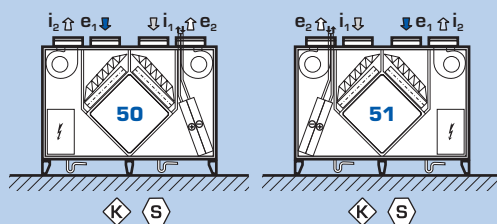
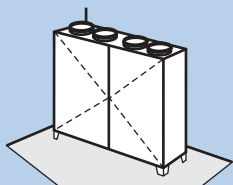
FLOOR-STANDING FLAT POSITION

position 40 - 43 (DUPLEX 2000 - 6000, DUPLEX-S 1500 - 5600) - Top view



UPRIGHT POSITION

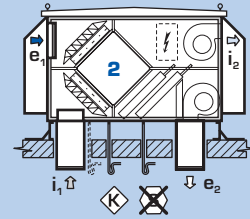
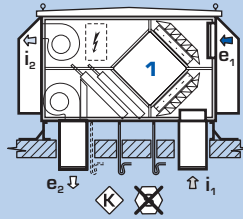
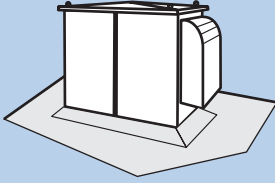
position 50 and 51 (DUPLEX 2000 - 8000) - Access door side view



# INSTALLATION POSITIONS - ROOFTOP UNITS

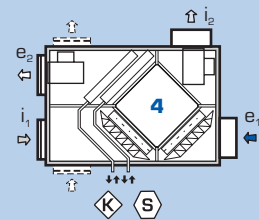
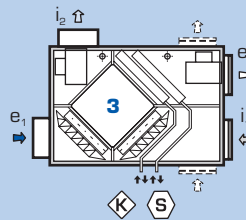
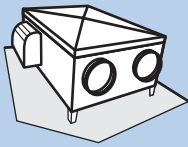
## HORIZONTAL POSITION

position 1/0 - 1/2 and 2/0 - 2/2 (DUPLEX-N 2000 - 15000) - Access door side view



## FLAT POSITION

position 3/8 - 3/14; 4/8 - 4/14 (DUPLEX-N 2000 - 6000, DUPLEX-NS 1500 - 4500) - Top view



## LEGEND

➔ **e<sub>1</sub>** ... fresh outside air intake

⇨ **e<sub>2</sub>** ... supply of filtered fresh air

⌋⊕ ... condensate drain location

▭ ... control panel (switch box)  
(different location possible upon request)

▭ ... control panel (various location)

⇨ **i<sub>1</sub>** ... stale air intake

⇨ **i<sub>2</sub>** ... stale air exhaust

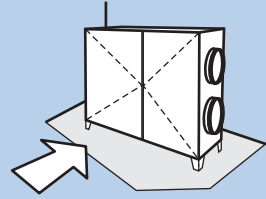
↕ ... hot water (T) and chilled water (CHF, CHW) connection

◇ ... DUPLEX with crossflow heat recovery core

◇~~⊗~~ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# FLOOR-STANDING HORIZONTAL POSITION

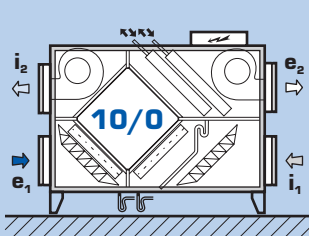
Configuration 10/0 - 13/6  
Access door side view



**K** DUPLEX 2000, 3000, 4000, 6000, 8000

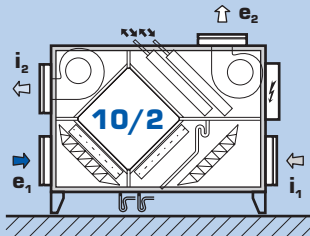
**K** DUPLEX 15000 (except)

**S** DUPLEX-S 1500, 2200, 3100, 4500, 5600



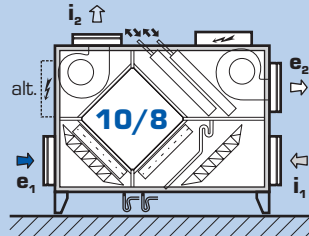
**K** **S**

impossible  
D 15000



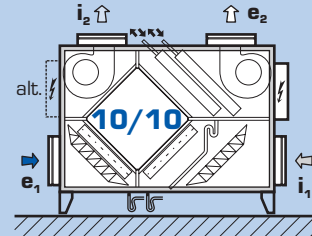
**K** **S**

impossible  
D 15000



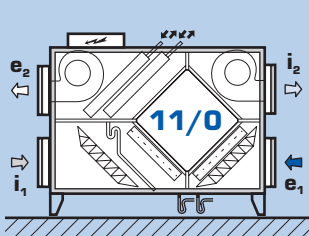
**K** **S**

impossible  
D 15000



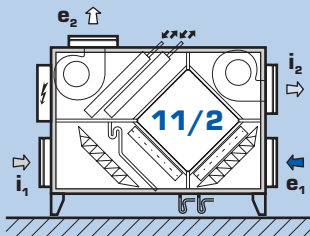
**K** **S**

impossible  
D 15000



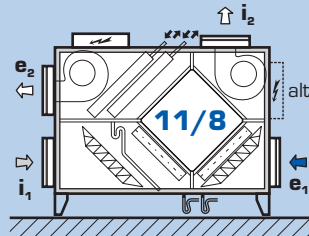
**K** **S**

impossible  
D 15000



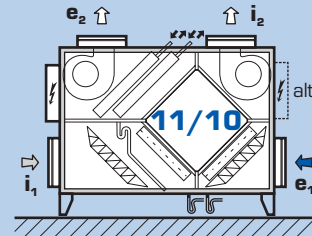
**K** **S**

impossible  
D 15000



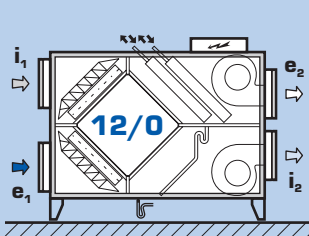
**K** **S**

impossible  
D 15000

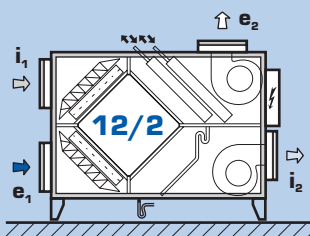


**K** **S**

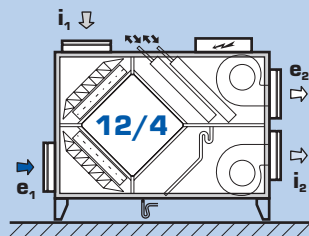
impossible  
D 15000



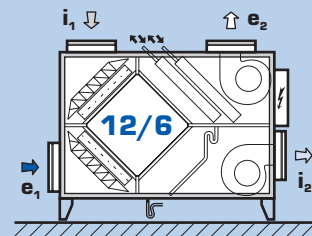
**K** ~~**S**~~



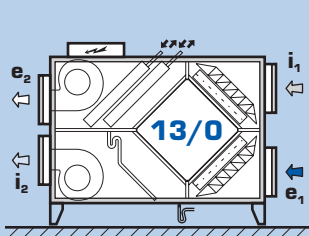
**K** ~~**S**~~



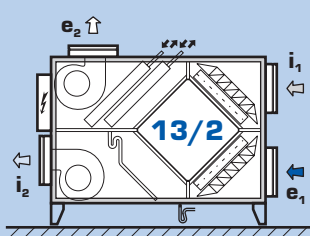
**K** ~~**S**~~



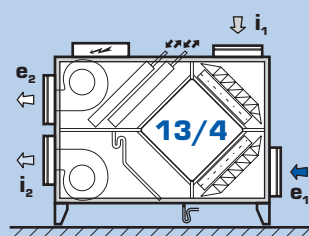
**K** ~~**S**~~



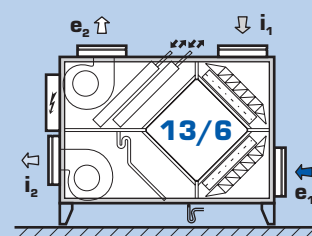
**K** ~~**S**~~



**K** ~~**S**~~



**K** ~~**S**~~



**K** ~~**S**~~

## LEGEND

➔ **e<sub>1</sub>** ... fresh outside air intake

⇨ **e<sub>2</sub>** ... supply of filtered fresh air

⌋ ... condensate drain location

▭ ... control panel (switch box)  
(different location possible upon request)

▭ ... control panel (various location)

⇨ **i<sub>1</sub>** ... stale air intake

⇨ **i<sub>2</sub>** ... stale air exhaust

⌋ ... hot water (T) and chilled water (CHF, CHW) connection

**K** ... DUPLEX with crossflow heat recovery core

**S** ~~**S**~~ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## FLOOR-STANDING VERTICAL POSITION

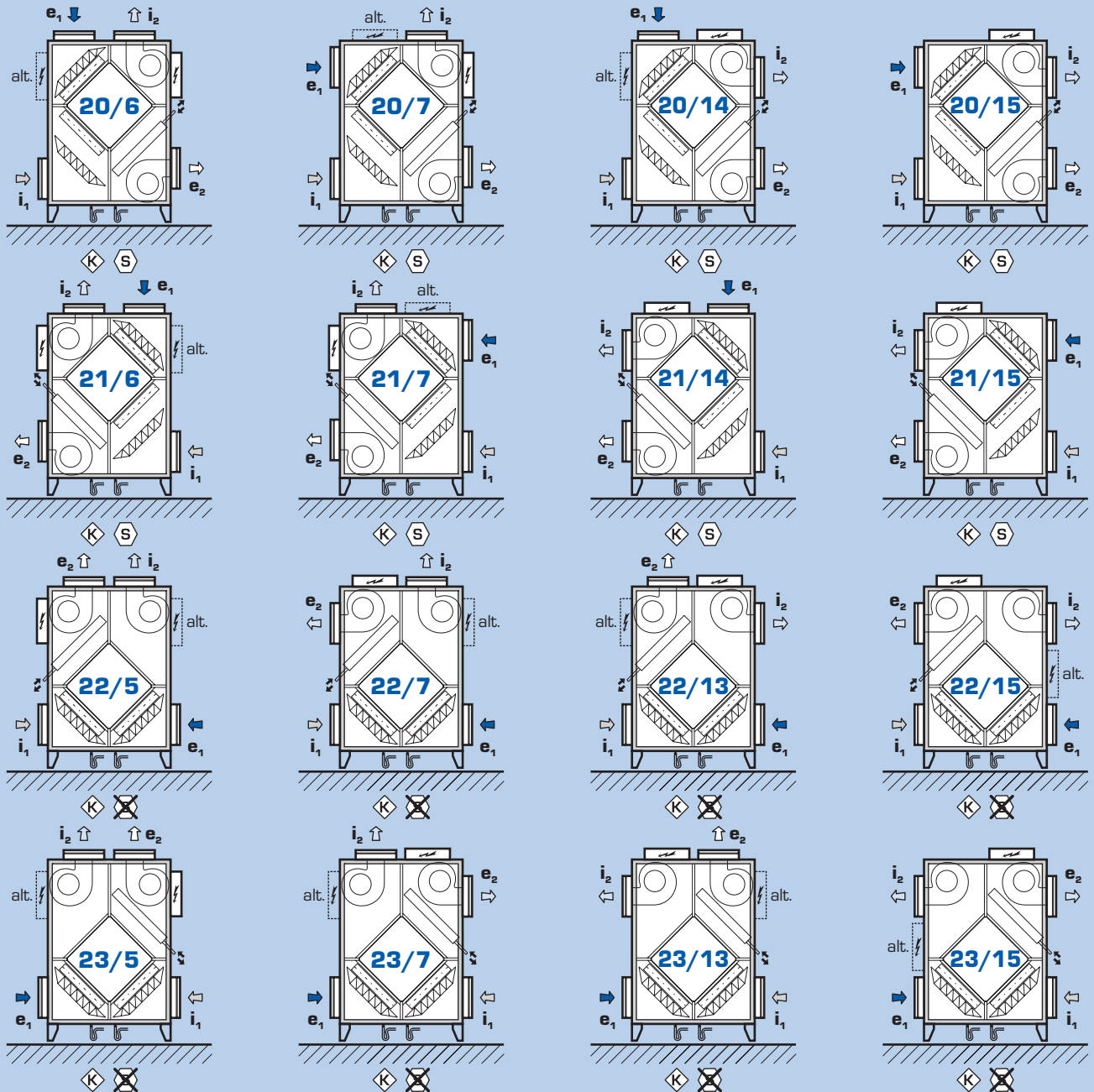
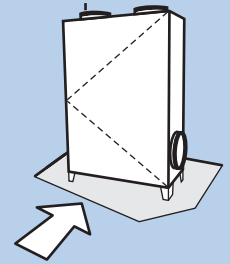
Configuration 20/6 - 23/15

Access door side view

The vertical units cannot be equipped with cooling coil

**K** DUPLEX 2000, 3000, 4000, 6000, 8000

**S** DUPLEX-S 1500, 2200, 3100, 4500, 5600



### LEGEND

➔ **e<sub>1</sub>** ... fresh outside air intake

⇨ **e<sub>2</sub>** ... supply of filtered fresh air

⌋ ... condensate drain location

▭ ... control panel (switch box)  
(different location possible upon request)

▭ ... control panel (various location)

⇨ **i<sub>1</sub>** ... stale air intake

⇨ **i<sub>2</sub>** ... stale air exhaust



⌋ ... hot water (T) and chilled water (CHF, CHW) connection

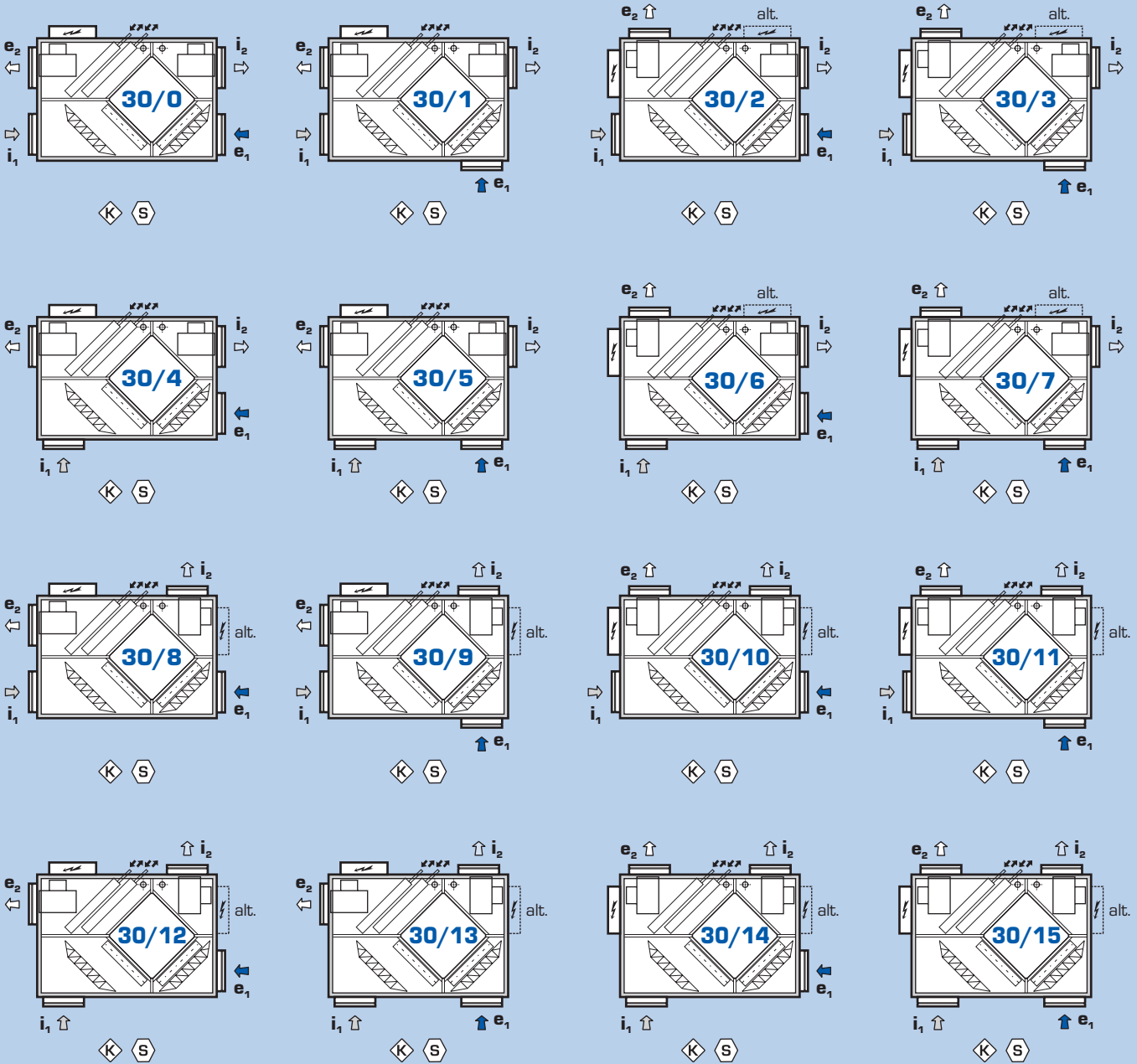
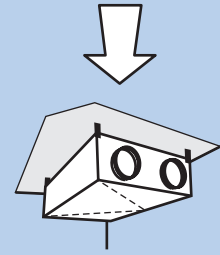
**K** ... DUPLEX with crossflow heat recovery core

**S** ~~X~~ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# CEILING-SUSPENDED POSITION

Configuration 30/0 - 30/15  
Top view

-  DUPLEX 2000, 3000, 4000, 6000
-  DUPLEX-S 1500, 2200, 3100, 4500



## LEGEND

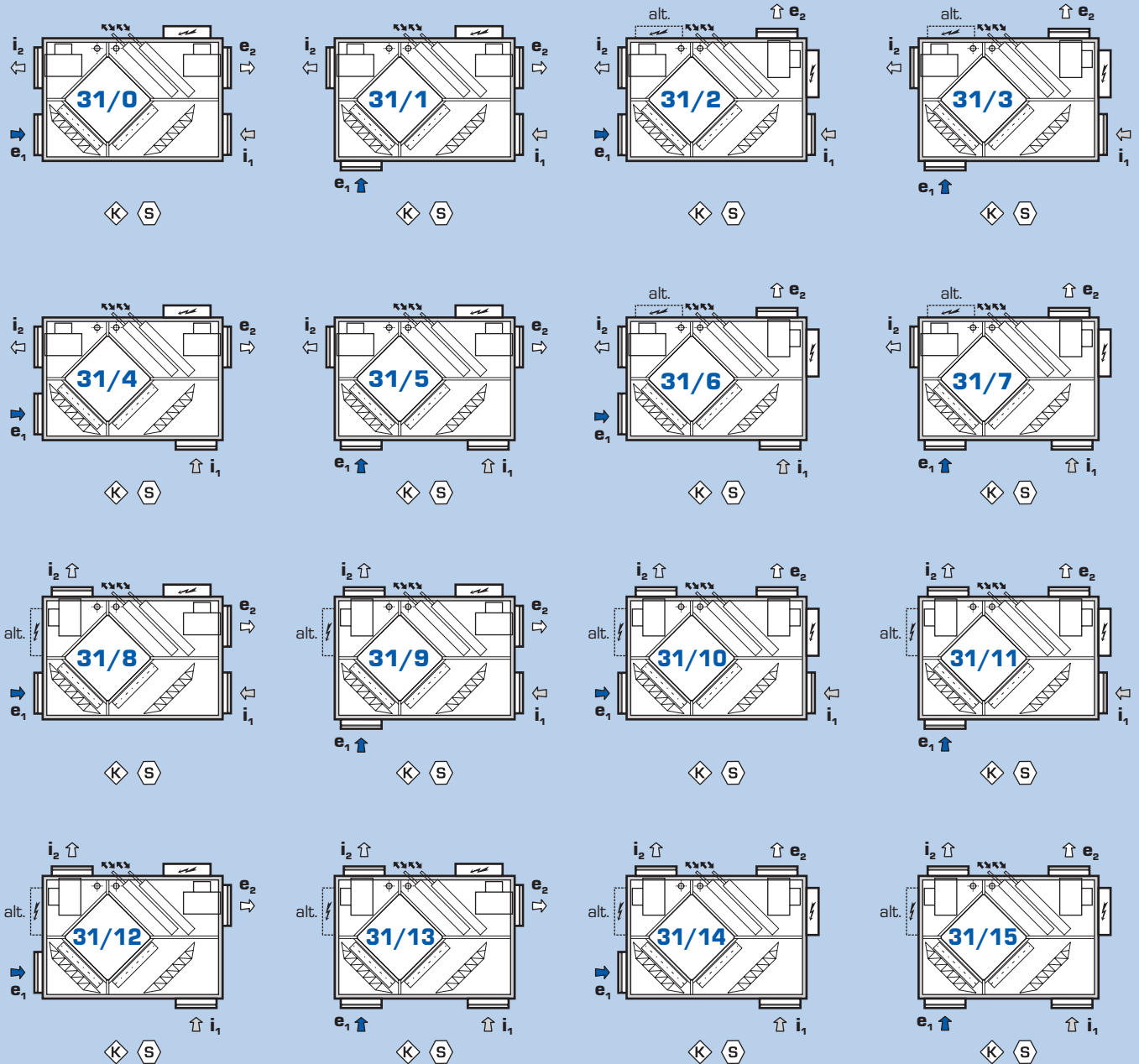
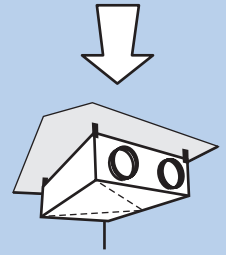
-  **e<sub>1</sub>** ... fresh outside air intake
-  **e<sub>2</sub>** ... supply of filtered fresh air
-  ... condensate drain location
-  ... control panel (switch box)  
(different location possible upon request)
-  ... control panel (various location)
-  **i<sub>1</sub>** ... stale air intake
-  **i<sub>2</sub>** ... stale air exhaust
-  ... hot water (T) and chilled water (CHF, CHW) connection
-  ... DUPLEX with crossflow heat recovery core
-  ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## CEILING-SUSPENDED POSITION

Configuration 31/0 - 31/15  
Top view

**K** DUPLEX 2000, 3000, 4000, 6000

**S** DUPLEX-S 1500, 2200, 3100, 4500



### LEGEND

➔ **e<sub>1</sub>** ... fresh outside air intake

⇨ **e<sub>2</sub>** ... supply of filtered fresh air

⌋ ⊕ ... condensate drain location

⎓ ... control panel (switch box)  
(different location possible upon request)

⎓ ... control panel (various location)

⇨ **i<sub>1</sub>** ... stale air intake

⇨ **i<sub>2</sub>** ... stale air exhaust

↔ ... hot water (T) and chilled water (CHF, CHW) connection

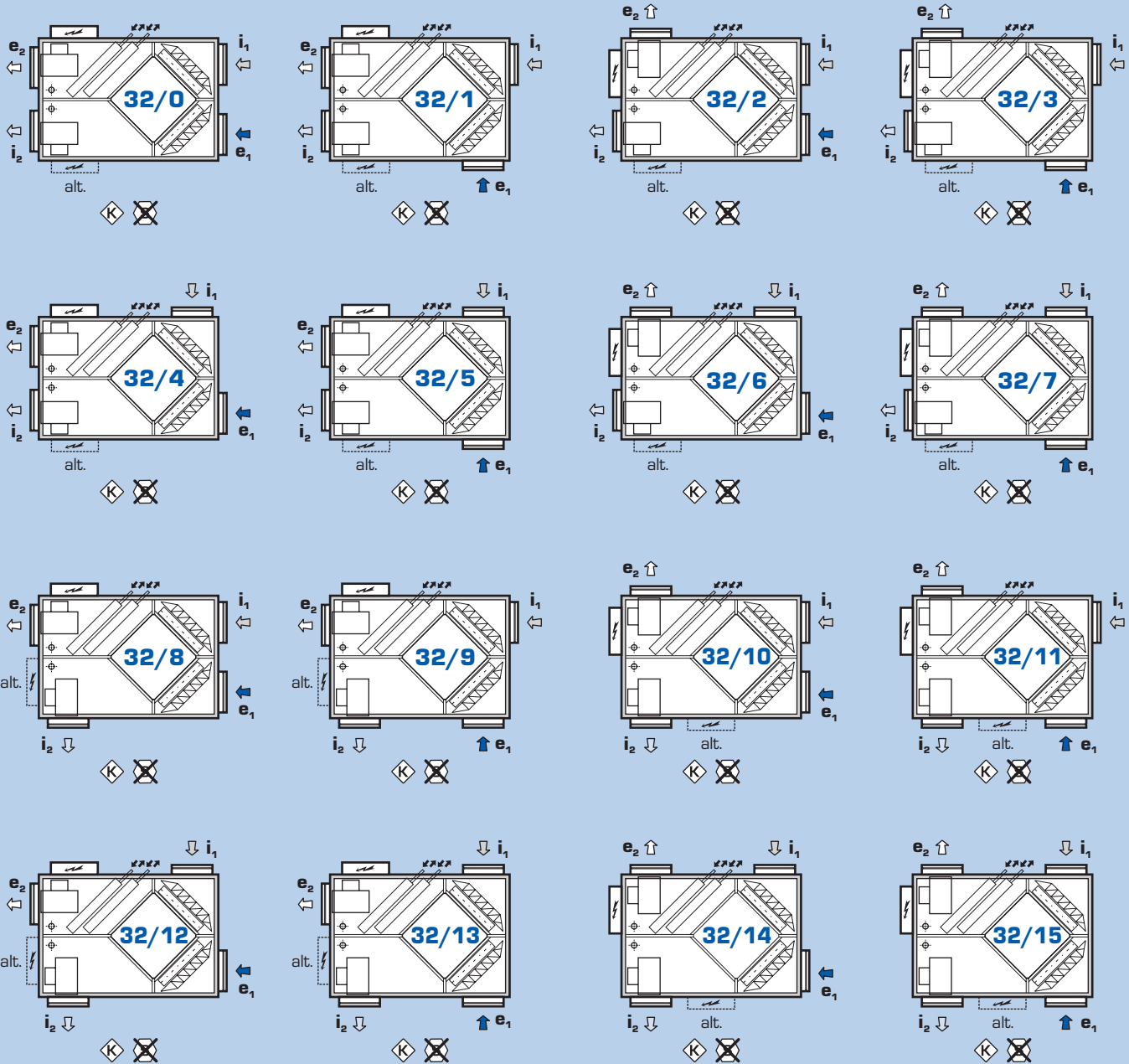
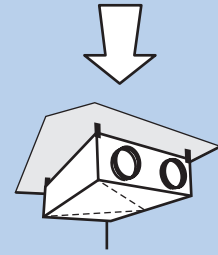
**K** ... DUPLEX with crossflow heat recovery core

**S** ~~⊗~~ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# CEILING-SUSPENDED POSITION

Configuration 32/0 - 32/15  
Top view

◇ DUPLEX 2000, 3000, 4000, 6000



## LEGEND

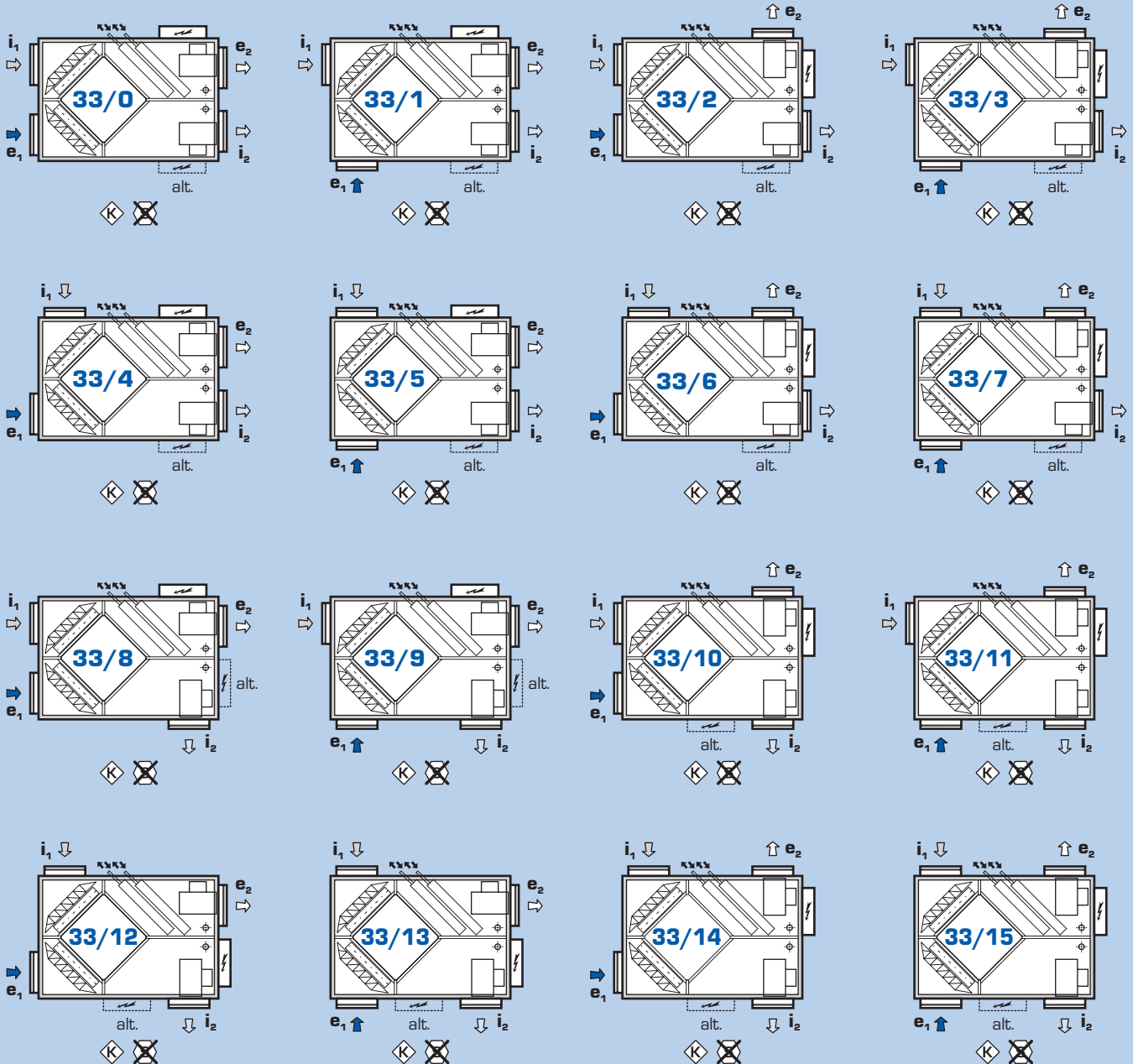
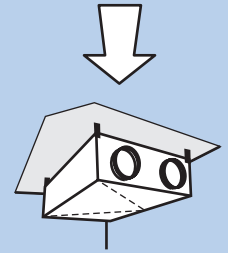
- ➔ **e<sub>1</sub>** ... fresh outside air intake
- ⇨ **e<sub>2</sub>** ... supply of filtered fresh air
- ⤵ ... condensate drain location
- ▭ ... control panel (switch box)  
(different location possible upon request)
- ▭ ... control panel (various location)
- ⇨ **i<sub>1</sub>** ... stale air intake
- ⇨ **i<sub>2</sub>** ... stale air exhaust
- ⤵ ... hot water (T) and chilled water (CHF, CHW) connection
- ◇ ... DUPLEX with crossflow heat recovery core
- ⊗ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations



## CEILING-SUSPENDED POSITION

Configuration 33/0 - 33/15  
Top view

◇ DUPLEX 2000, 3000, 4000, 6000





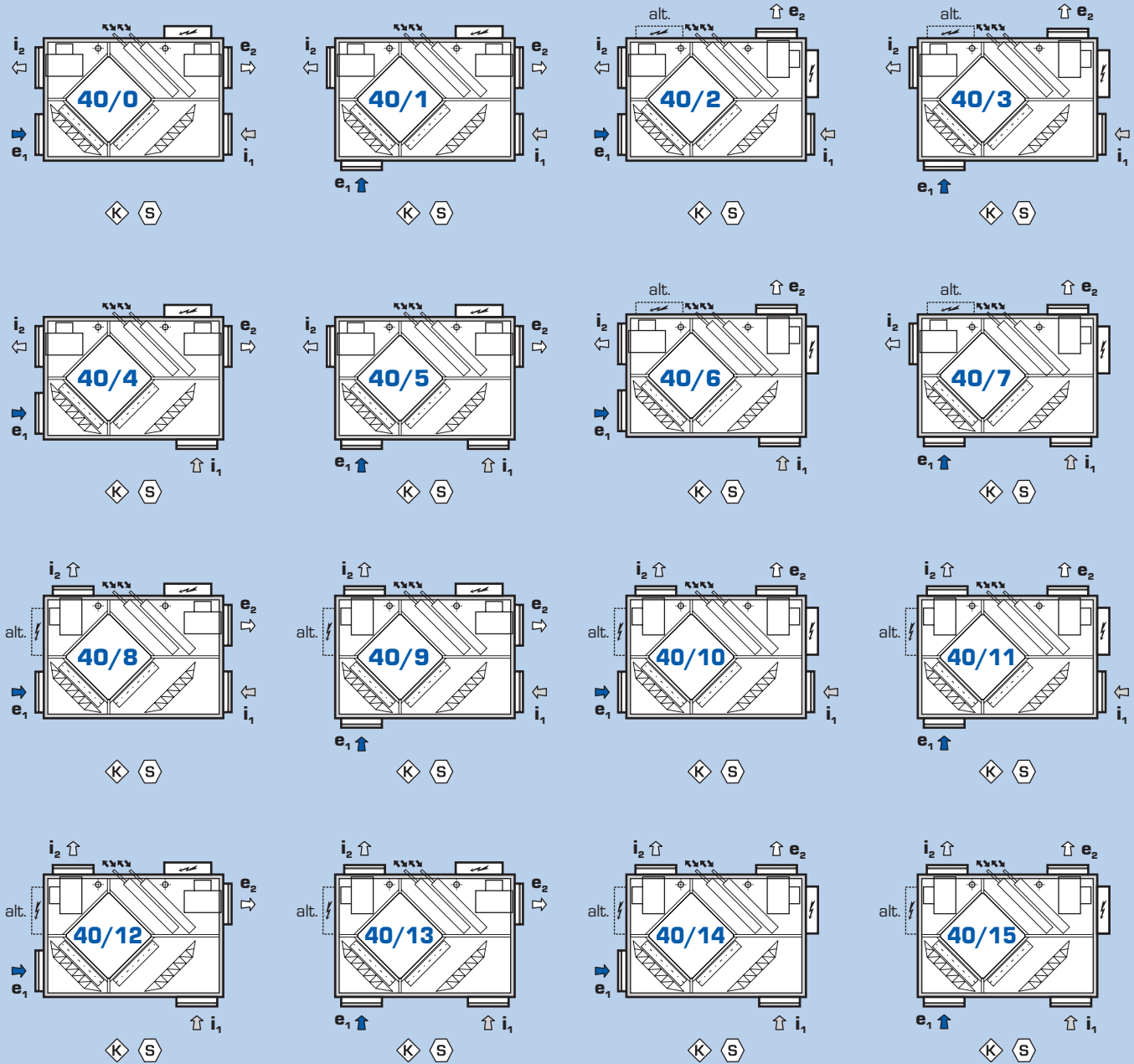
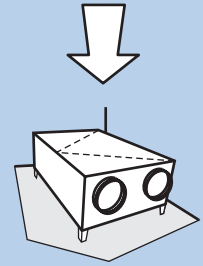
### LEGEND

- ➔ **e<sub>1</sub>** ... fresh outside air intake
- ⇨ **e<sub>2</sub>** ... supply of filtered fresh air
- ⌋⊕ ... condensate drain location
- ▭ ... control panel (switch box)  
(different location possible upon request)
- ▭ ... control panel (various location)
- ⇨ **i<sub>1</sub>** ... stale air intake
- ⇨ **i<sub>2</sub>** ... stale air exhaust
- ↔ ... hot water (T) and chilled water (CHF, CHW) connection
- ◇ ... DUPLEX with crossflow heat recovery core
- ⊗ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# FLOOR-STANDING FLAT POSITION

Configuration 40/0 - 40/15  
Top view

-  DUPLEX 2000, 3000, 4000, 6000
-  DUPLEX-S 1500, 2200, 3100, 4500



## LEGEND

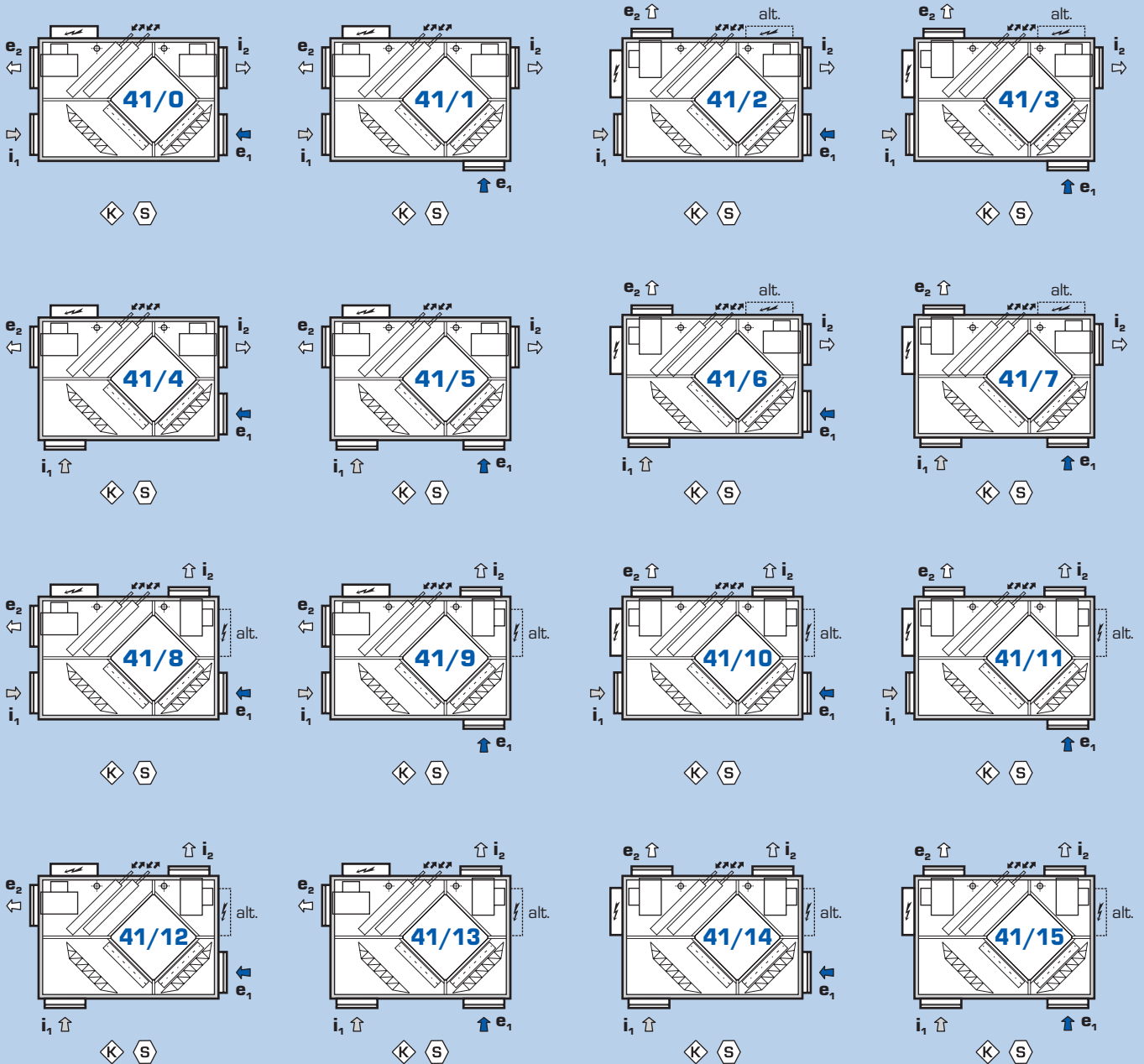
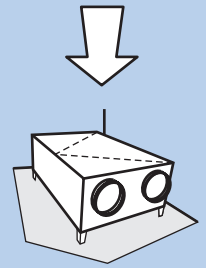
-  **e<sub>1</sub>** ... fresh outside air intake
-  **e<sub>2</sub>** ... supply of filtered fresh air
-  ... condensate drain location
-  ... control panel (switch box)  
(different location possible upon request)
-  ... control panel (various location)
-  **i<sub>1</sub>** ... stale air intake
-  **i<sub>2</sub>** ... stale air exhaust
-  ... hot water (T) and chilled water (CHF, CHW) connection
-  ... DUPLEX with crossflow heat recovery core
-  ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# FLOOR-STANDING FLAT POSITION

Configuration 41/0 - 41/15  
Top view

**K** DUPLEX 2000, 3000, 4000, 6000

**S** DUPLEX-S 1500, 2200, 3100, 4500



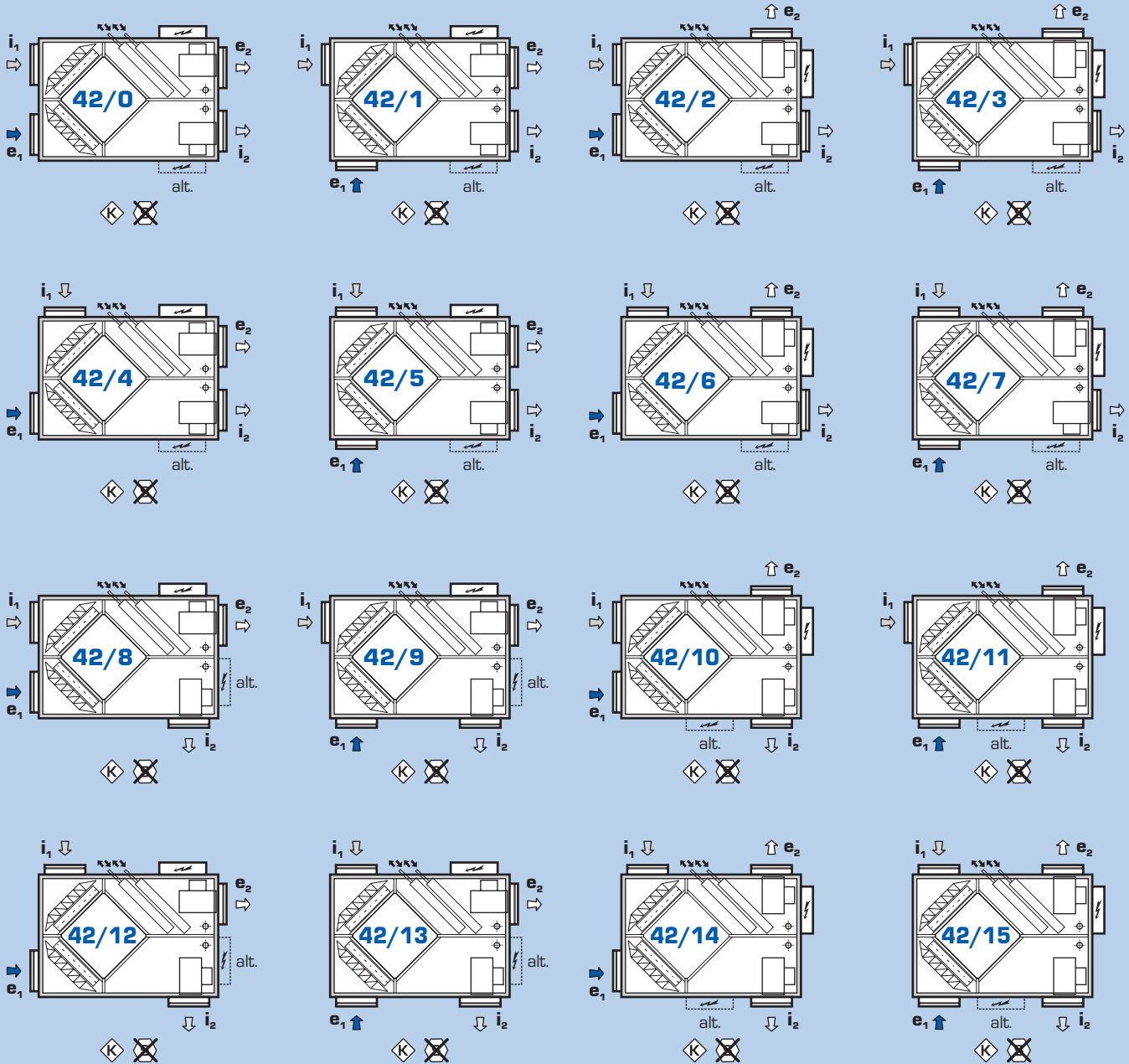
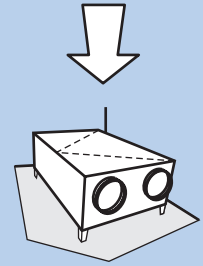
## LEGEND

- e<sub>1</sub>** ... fresh outside air intake
- e<sub>2</sub>** ... supply of filtered fresh air
- ... condensate drain location
- ... control panel (switch box)  
(different location possible upon request)
- ... control panel (various location)
- i<sub>1</sub>** ... stale air intake
- i<sub>2</sub>** ... stale air exhaust
- ... hot water (T) and chilled water (CHF, CHW) connection
- ... DUPLEX with crossflow heat recovery core
- ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

# FLOOR-STANDING FLAT POSITION

Configuration 42/0 - 42/15  
Top view

◇ DUPLEX 2000, 3000, 4000, 6000



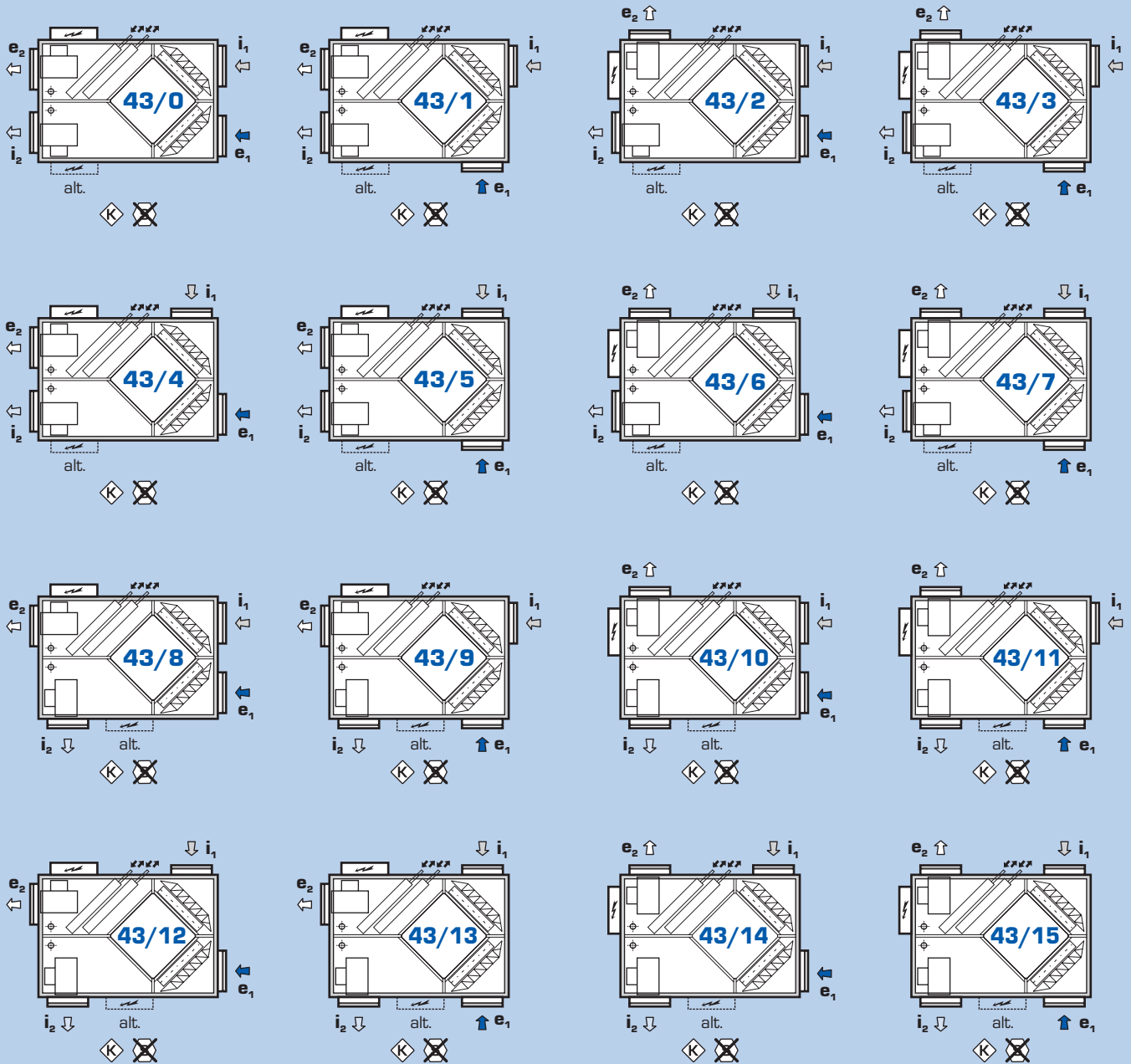
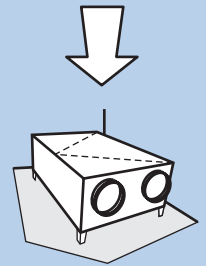
## LEGEND

- ➔ **e<sub>1</sub>** ... fresh outside air intake
- ⇨ **e<sub>2</sub>** ... supply of filtered fresh air
- ⌋-⊕ ... condensate drain location
- ▭ ... control panel (switch box)  
(different location possible upon request)
- ▭ ... control panel (various location)
- ⇨ **i<sub>1</sub>** ... stale air intake
- ⇨ **i<sub>2</sub>** ... stale air exhaust
- ↔ ... hot water (T) and chilled water (CHF, CHW) connection
- ◇ ... DUPLEX with crossflow heat recovery core
- ⊞ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## FLOOR-STANDING FLAT POSITION

Configuration 43/0 - 43/15  
Top view

◇ K DUPLEX 2000, 3000, 4000, 6000





### LEGEND

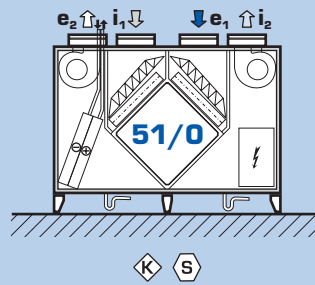
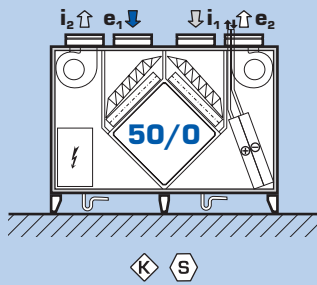
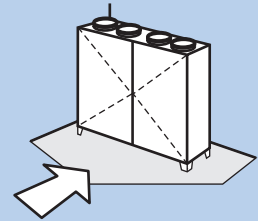
- ➔ **e<sub>1</sub>** ... fresh outside air intake
- ⇨ **e<sub>2</sub>** ... supply of filtered fresh air
- ⌋⊕ ... condensate drain location
- ▭ ... control panel (switch box)  
(different location possible upon request)
- ▭ ... control panel (various location)
- ⇨ **i<sub>1</sub>** ... stale air intake
- ⇨ **i<sub>2</sub>** ... stale air exhaust
- ↔ ... hot water (T) and chilled water (CHF, CHW) connection
- ◇ K ... DUPLEX with crossflow heat recovery core
- ◇ X ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## UPRIGHT POSITION


Configuration 50/0 and 51/0  
(Access door side view)


 DUPLEX 2000, 3000, 4000, 6000, 8000

 DUPLEX-S 1500, 2200, 3100, 4500, 5600




### LEGEND

 **e<sub>1</sub>** ... fresh outside air intake

 **e<sub>2</sub>** ... supply of filtered fresh air

 ... condensate drain location

 ... control panel (switch box)  
(different location possible upon request)


 ... control panel (various location)

 **i<sub>1</sub>** ... stale air intake

 **i<sub>2</sub>** ... stale air exhaust

 ... hot water (T) and chilled water (CHF, CHW) connection

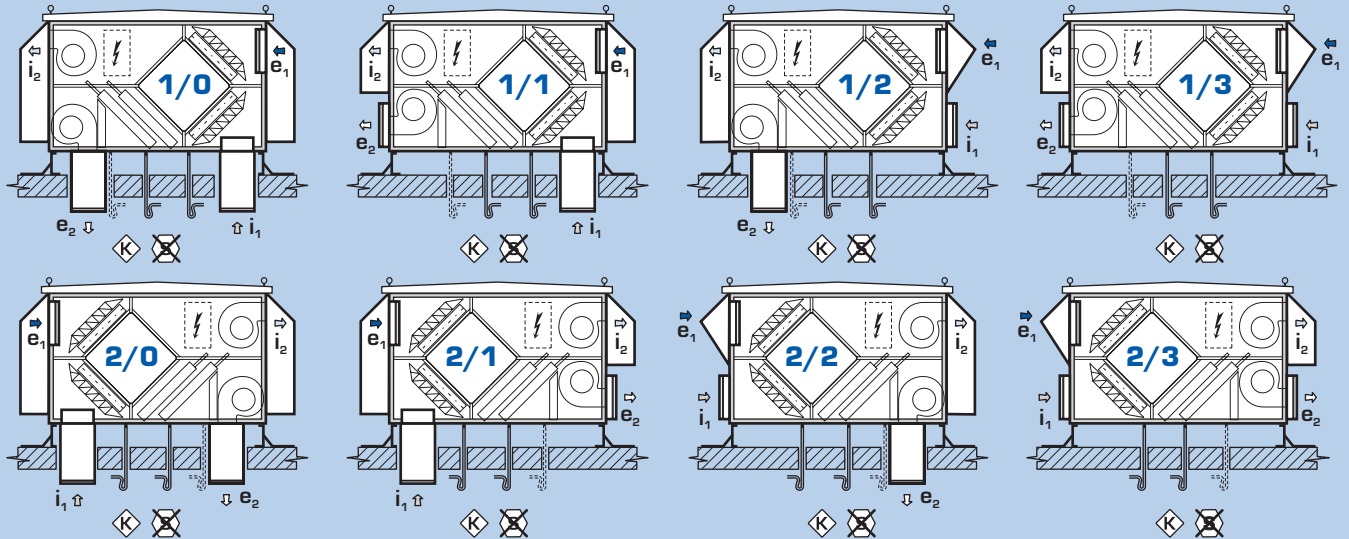
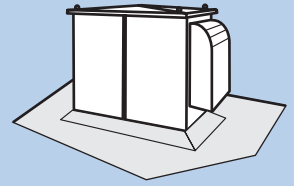
 ... DUPLEX with crossflow heat recovery core

 ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## ROOFTOP VERSION - HORIZONTAL

Configuration 1/0 ÷ 1/3; 2/0 ÷ 2/3  
[access door side view]

◇ DUPLEX-N 2000, 3000, 4000, 6000, 8000, 15000



### LEGEND

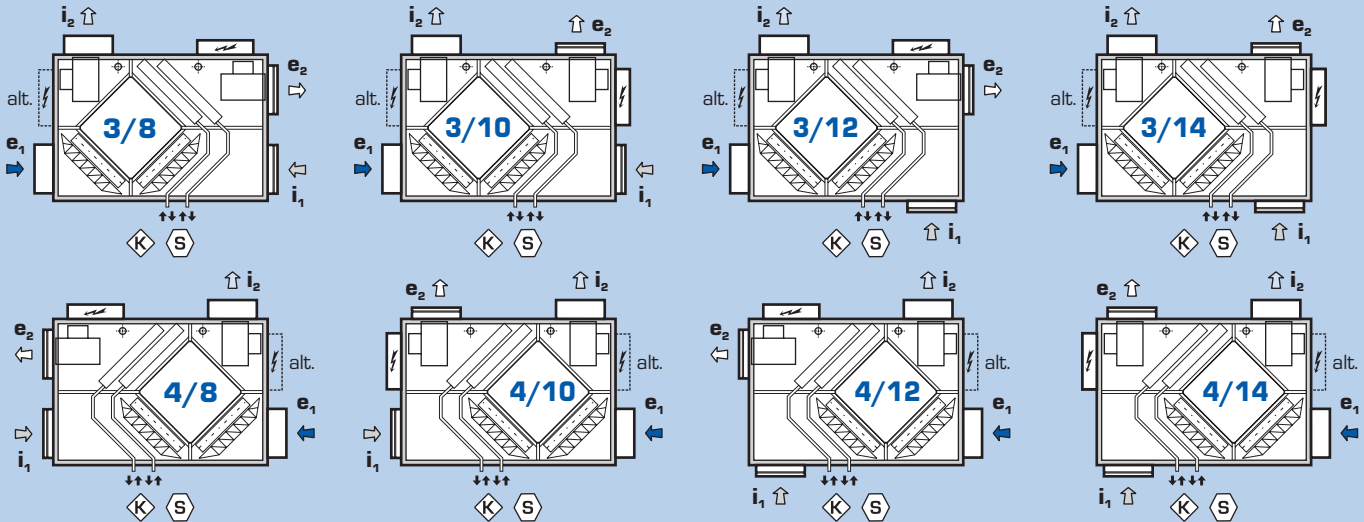
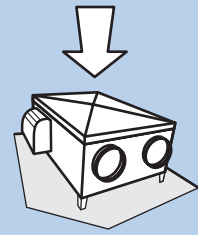
- ➔ **e<sub>1</sub>** ... fresh outside air intake
- ⇨ **e<sub>2</sub>** ... supply of filtered fresh air
- ⌋⊕ ... condensate drain location
- ⎓ ... control panel (switch box)  
(different location possible upon request)
- ⎓ ... control panel (various location)
- ⇨ **i<sub>1</sub>** ... stale air intake
- ⇨ **i<sub>2</sub>** ... stale air exhaust
- ↕ ... hot water (T) and chilled water (CHF, CHW) connection
- ◇ ... DUPLEX with crossflow heat recovery core
- ⊗ ... DUPLEX-S with counterflow heat recovery core  
- possible and prohibited configurations

## ROOFTOP VERSION - FLAT

Configuration 3/8 ÷ 3/14; 4/8 ÷ 4/14  
(top view)

**K** DUPLEX-N 2000, 3000, 4000, 6000

**S** DUPLEX-NS 1500, 2200, 3100, 4500



**Note:** Hoods of air intake and exhaust can optionally be replaced with round or rectangular ports for all rooftop version.

### LEGEND

- |  |  |
|--|--|
| ... fresh outside air intake   | ... stale air intake   |
| ... supply of filtered fresh air   | ... stale air exhaust  |
| ... condensate drain location  | ... glycol heating coil (T), chilled water cooling coil (CHW) and DX cooling coil (CHF) connection |
| ... control panel (switch box)<br>(different location possible upon request) | ... DUPLEX-N with crossflow heat recovery core   |
| ... hood     ... Port  | ... DUPLEX-NS with counterflow heat recovery core<br>- possible and prohibited configurations      |