

# AlfaBlue BC/BX

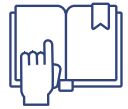
## Instruction manual





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# 1 Important information

## 1.1 Standards



The products are provided for incorporation in machines as defined in the EC Machine Directive 2006/42/EC and subsequent modifications.

- PED 2014/68/EU
- Safety of Machinery EN 60204-1
- Directive 2014/30/EC and subsequent modifications. Electromagnetic compatibility.
- Low voltage - Reference Directive 2014/35/EC

However it is forbidden to operate our equipment in advance before the machine incorporating the products or making part thereof has been declared to be in conformity with the EC Machine Directive.

**PRECAUTIONS:** be on guard against any injury risks or damage to materials if these instructions are not followed.

For moving, installing and maintenance operations it is essential to comply as follows:

- Employ authorized personnel only for using moving equipment (cranes, forklift elevators, etc.).
- Wear work gloves.
- Never remain below suspended loads.

Before proceeding with electrical wirings it is essential to comply as follows:

- Employ only authorized personnel.
- Make sure the power line circuit is open.
- The main switch on the general power panel is open and padlocked in this position.

Before proceeding with the collector/distributor connections it is mandatory to:

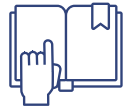
- Employ only authorized personnel
- Make sure the supply circuit is closed (no pressure).
- When performing welding operations, make sure the flame is not aimed toward the equipment (insert a shield if required).

**DISPOSAL:** Alfa LU-VE products are made of:

- Plastic materials: polyethylene, ABS, rubber.
- Ferrous materials: iron, stainless steel, copper, aluminium (possibly processed).
- Refrigerant liquids: follow the instructions relevant to the equipment installation.

Remove the transparent protection film from varnished metallic parts.

VDI 2047-2 guidelines "Hygiene for heat exchangers".



## 2 Product description

### 2.1 Characteristics

Heat exchangers:

- Cu tubes
- Al fins

Headers:

- Copper (condenser)
- K65 headers and connection. Optional stainless steel connection for easy on-site welding (gas cooler).

Model	Refrigerant	Max conditions of use
condenser BC	R407F, R449A, R134A, R407C, R404A, R507A, R410A, R22, R407A, R417A, R422A, R422D, R448A, R450A, R513A	30 bar T=85 °C hot gas inlet
gas cooler BX	CO <sub>2</sub>	130 bar T=150 °C CO <sub>2</sub> inlet

### 2.2 Options

- Coil protection:
  - Aluplus (AP): magnesium-aluminium alloy coated with a special paint treatment to give strong protection and resistance to corrosion
  - Cu fins
- Sub-cooling circuit (SC) - only for condensers
- Spray water kit (KW)
- Vibration dampers (VD)
- EC fan motors (EC)
- Whisperer (WH)
- Mounting feet for horizontal installation 1,000 mm (F10)
- Electrical accessories:
  - Fan control system
  - Isolator switch (SW)
  - Motors wired to the junction box (CB)
  - Basic switchboard, with fuse protection (ESB)
  - Switchboard with one automatic switch for each fan (ECCB)

### 2.3 Code description

<b>BX</b>	<b>E</b>	<b>8</b>	<b>S</b>	<b>7242</b>	-	<b>5</b>	-	<b>36</b>	<b>N2</b>	<b>H</b>	(	<b>2</b>	x	<b>4</b>	)
1	2	3	4	5		6		7	8	9		10		11	

- AlfaBlue (BC=condenser, BX=gas cooler)
- Coil module size (E=standard, S=short, X=XL)
- Fan diameter (8=800 mm, 9=910 mm, 95=950 mm, 10=1000 mm)
- Noise level (F-N=normal, S-X-T=quiet, U-R=residential)
- Model code
- Tube rows - only for gas coolers
- No. of circuits per header - only for gas coolers
- No. of headers - only for gas coolers
- Installation (H=horizontal, V=vertical)
- No. of rows
- No. of fans per row

### 3 Unpacking and lifting



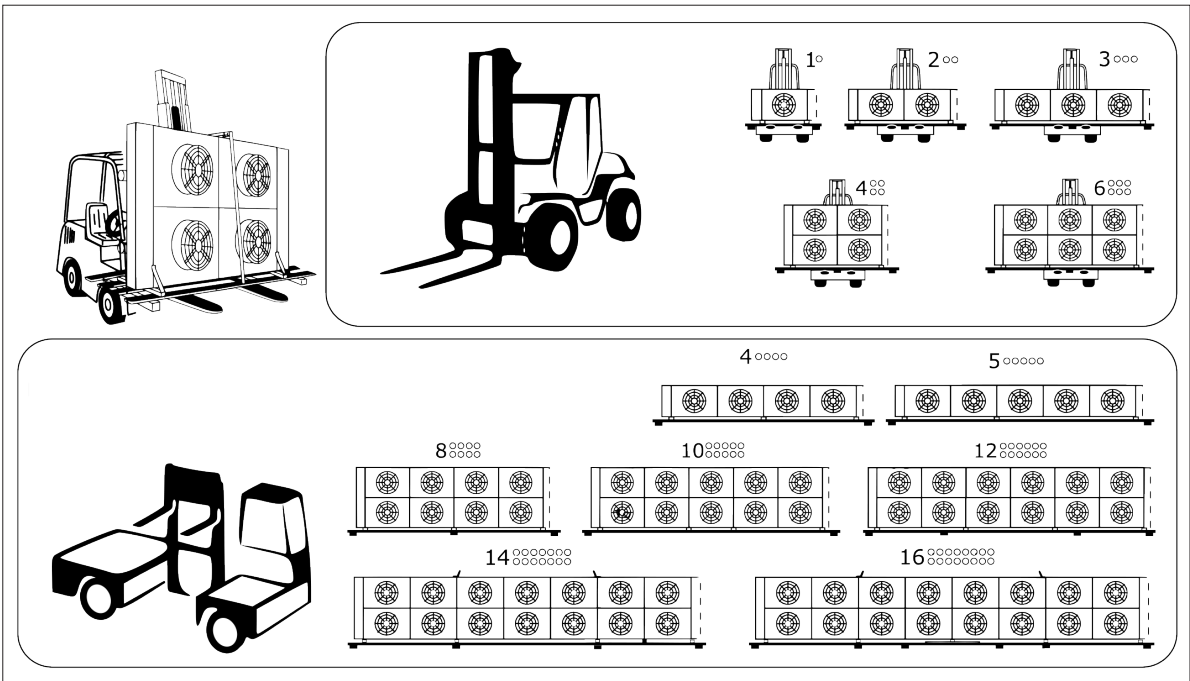
Before lifting the units, please check the structural integrity of the lifting devices and their proper fixing to the structure.



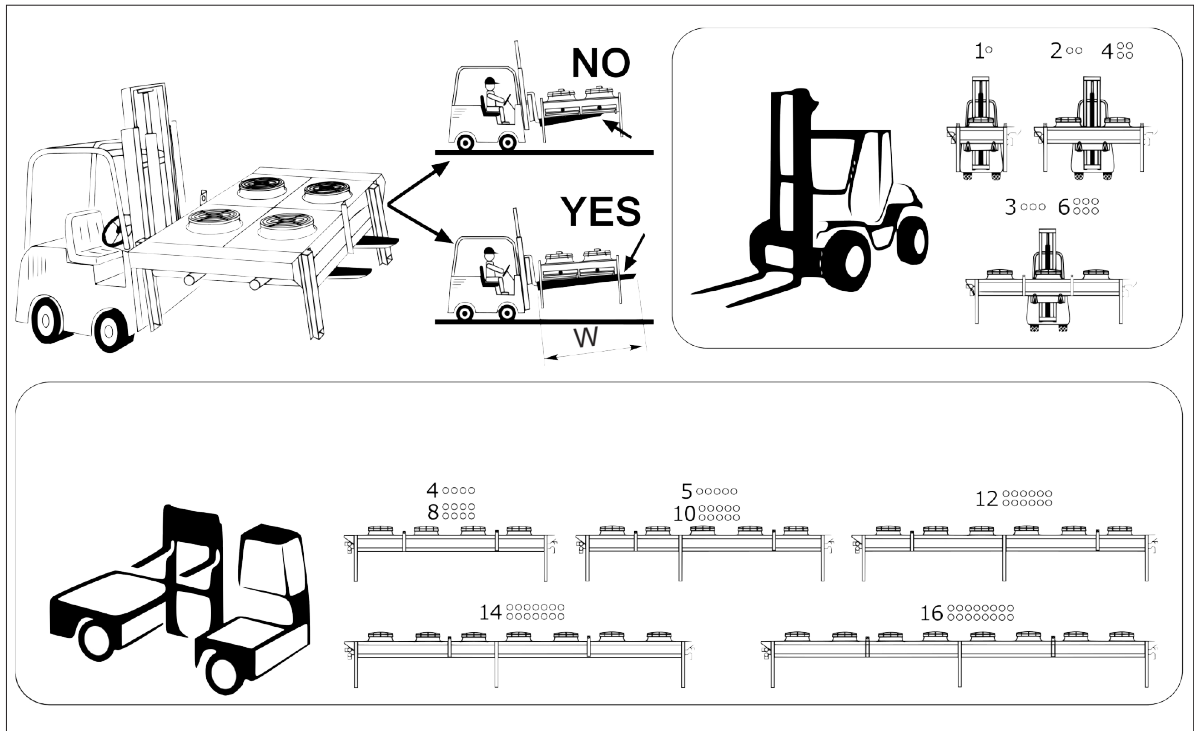
AlfaBlue condensers and gas coolers can be lifted from above using a hoist. Ensure that the weight is distributed evenly over all the lifting lugs. In the case of long heat exchangers, the use of a hoisting beam may be required. Use of a fork-lift is permitted with proper characteristics in relation to weight and depth of the heat exchanger. Weight information and dimensions are shown on the product label and/or in the relevant product documentation. It is important that weight is distributed evenly. Direct or indirect lifting under the coil block is not permitted. All lifting procedures must be carried out carefully by properly qualified personnel, ensuring absolute safety at all times. If in doubt about the proper hoisting or lifting method, please check with Alfa LU-VE.

#### 3.1 Handling

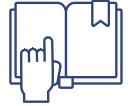
##### Vertical Installation



### Horizontal Installation



Model	W (mm)
B*S8 B*E8 B*E9	2700
B*E95 B*X95 B*X9 B*X10	3100

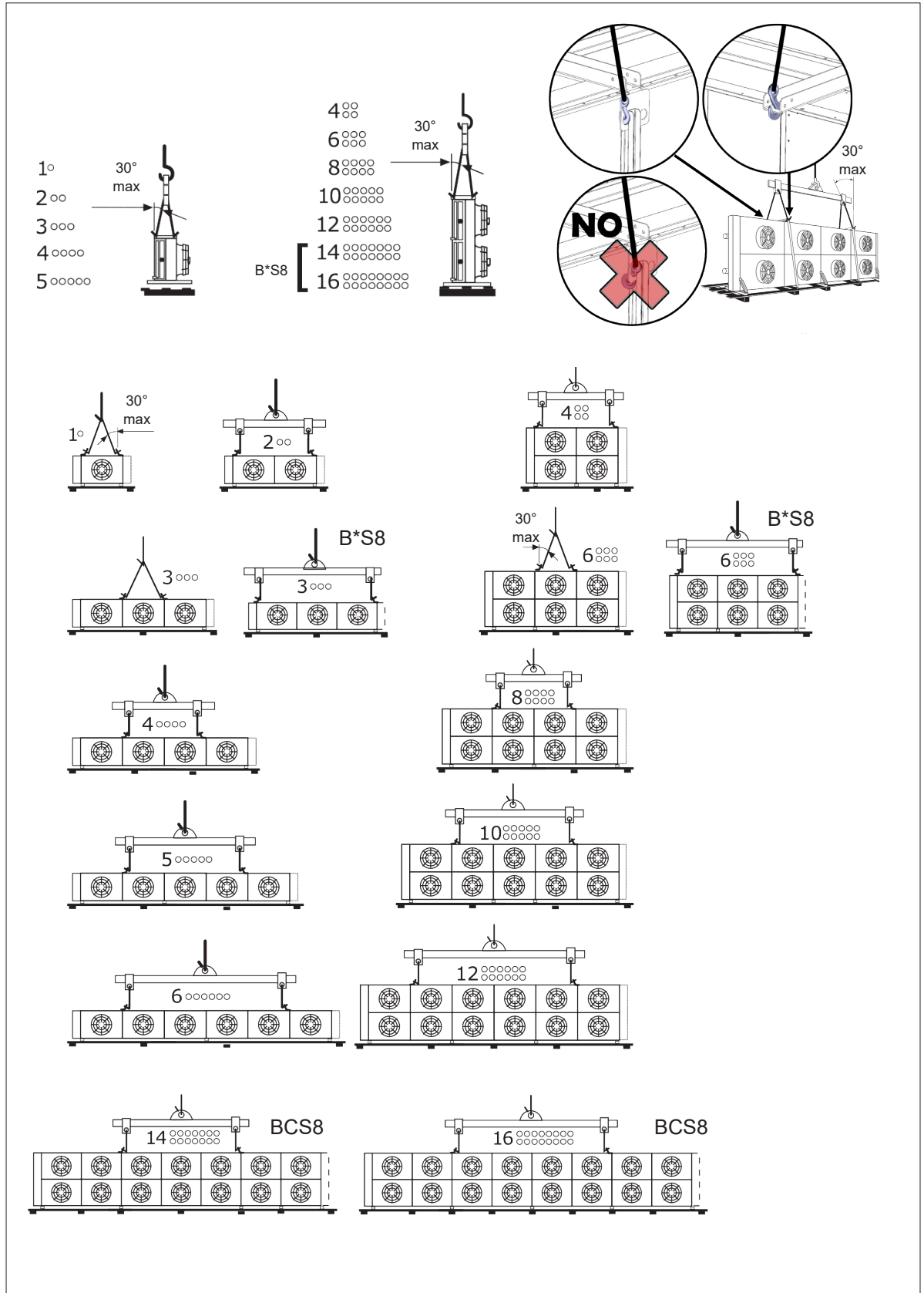


### 3.2 Lifting

Before lifting the units, please check the structural integrity of the lifting devices and their proper fixing to the structure.



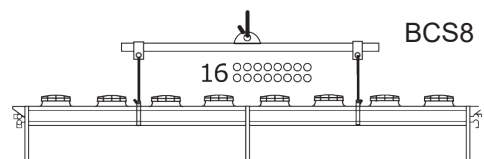
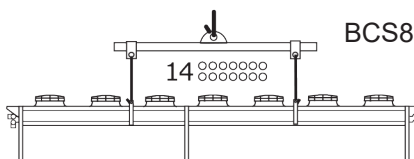
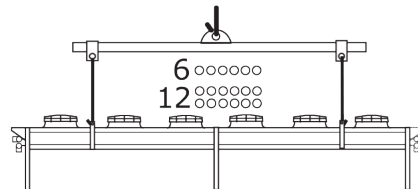
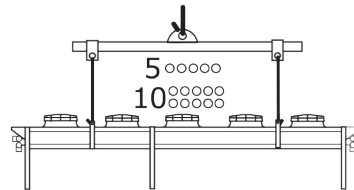
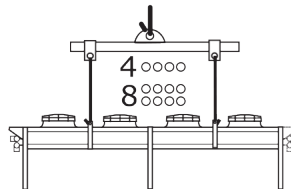
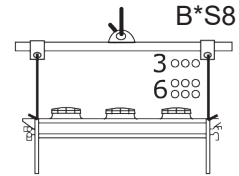
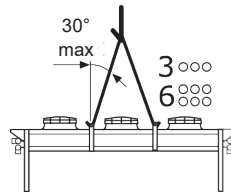
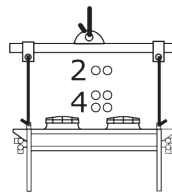
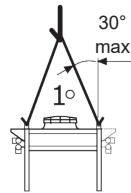
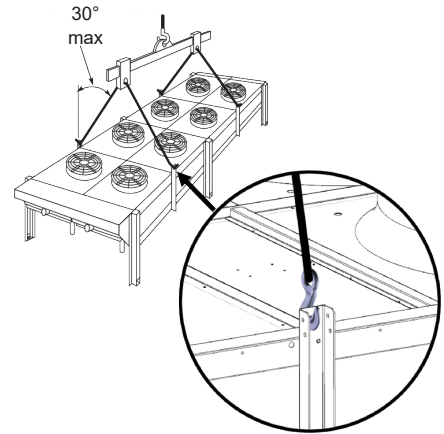
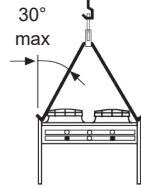
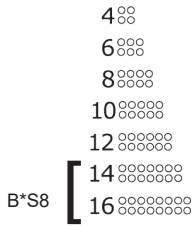
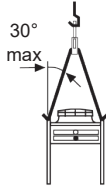
#### Vertical Installation



**Horizontal Installation**

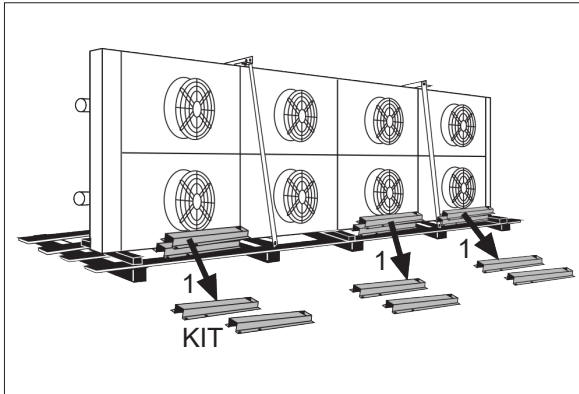


- 1°
- 2°
- 3°
- 4°
- 5°
- 6°

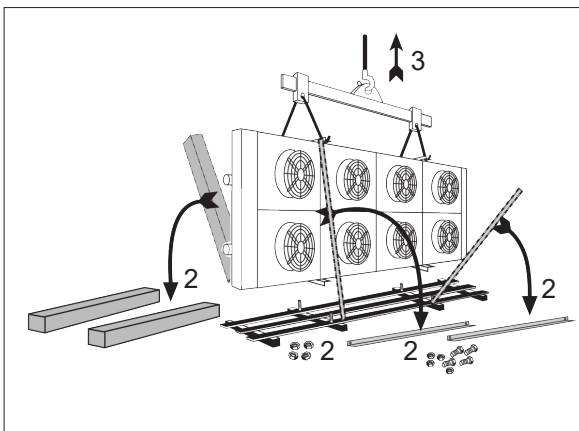




### 3.3 Unpacking



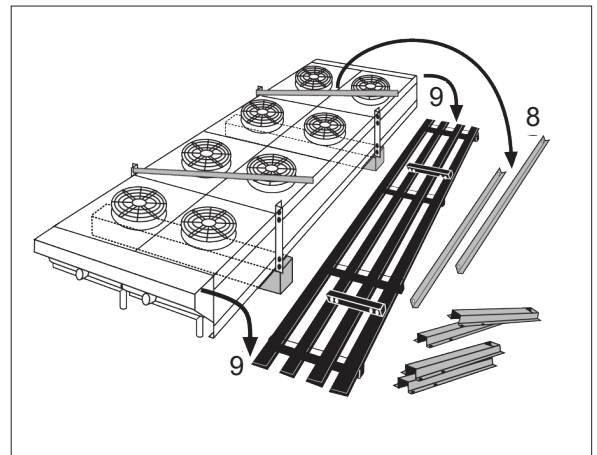
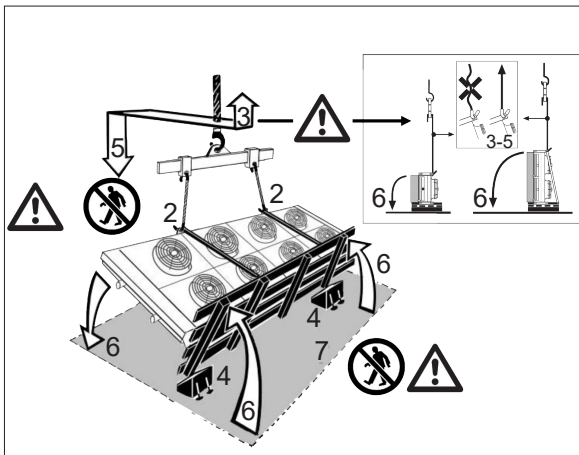
#### Vertical Installation

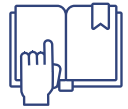


#### Horizontal Installation

During the overturning ensure that:

- tension of lifting ropes is always vertical (3-5)
- base is stopped with suitable devices (4) to prevent slipping
- operator is out of the overturning area (7)
- do not walk or stop under suspended load





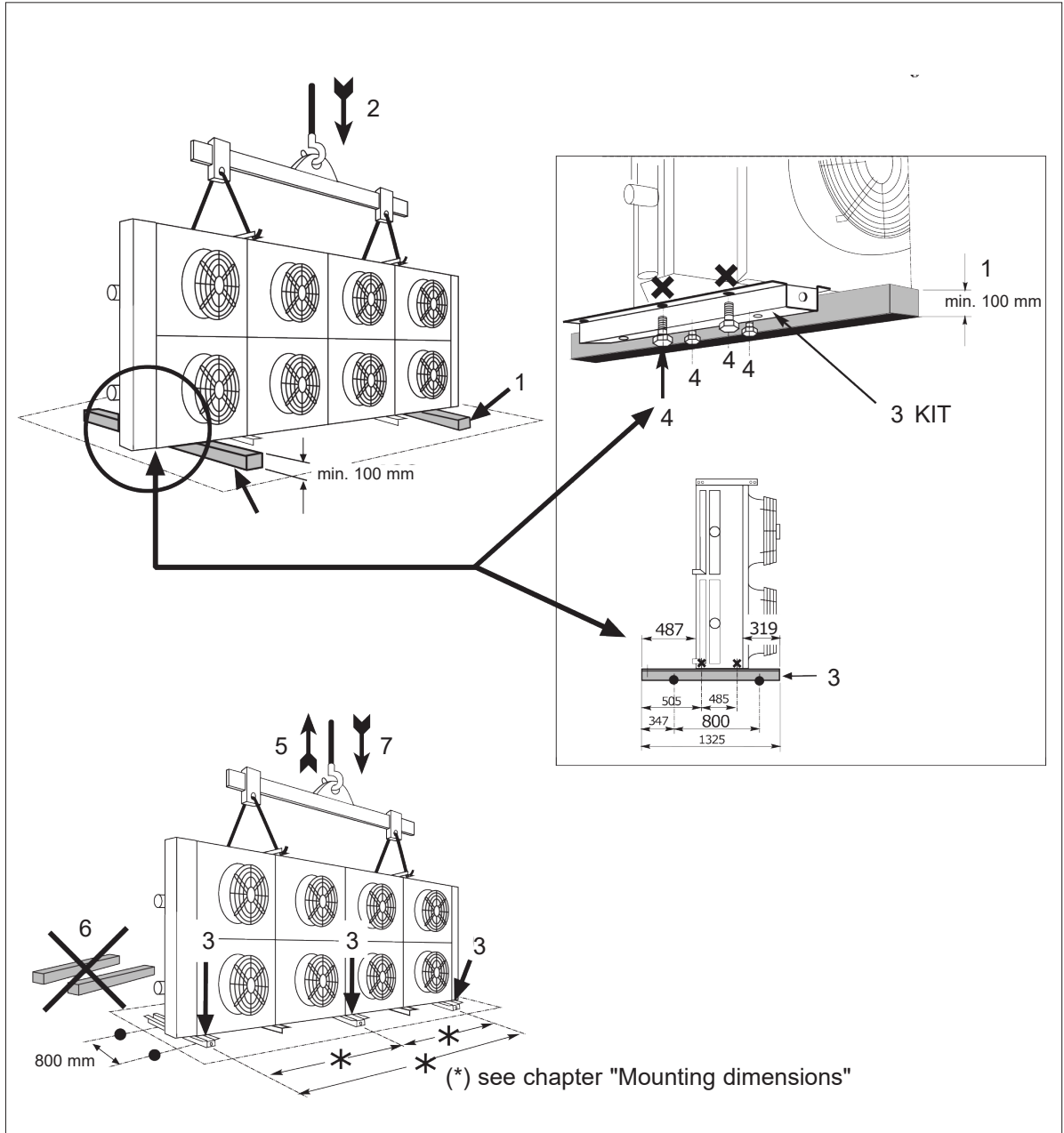
## 4 Installation

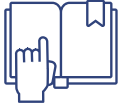


### 4.1 Feet mounting

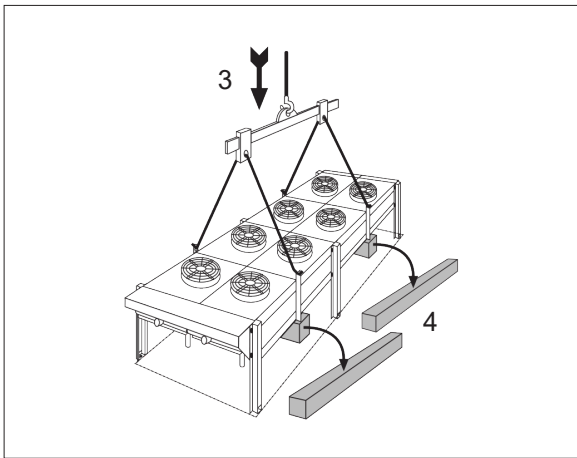
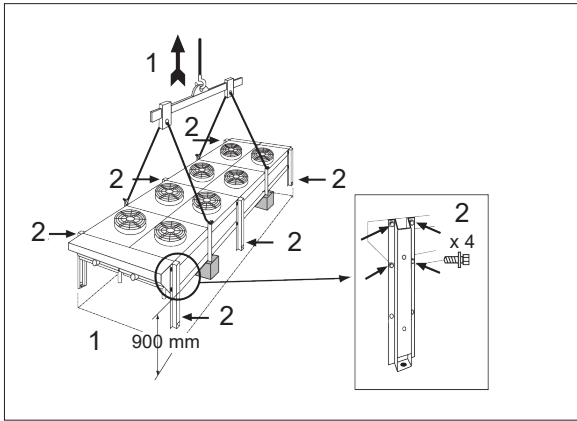


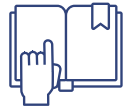
#### Vertical Installation



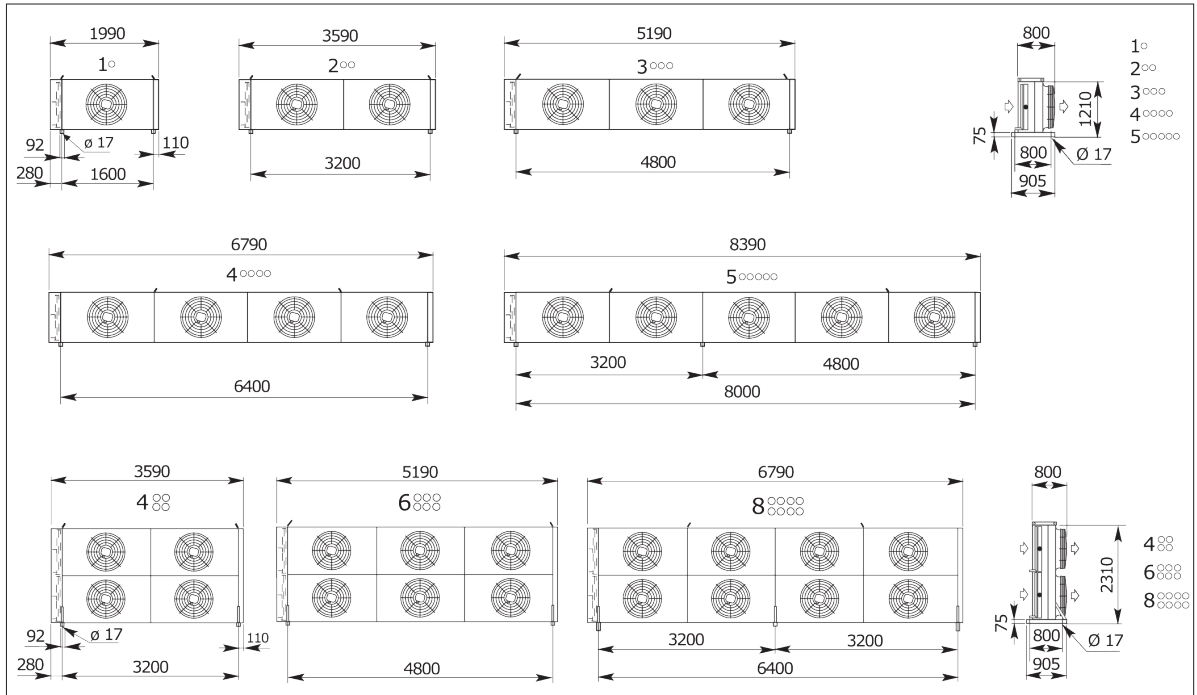


### Horizontal Installation

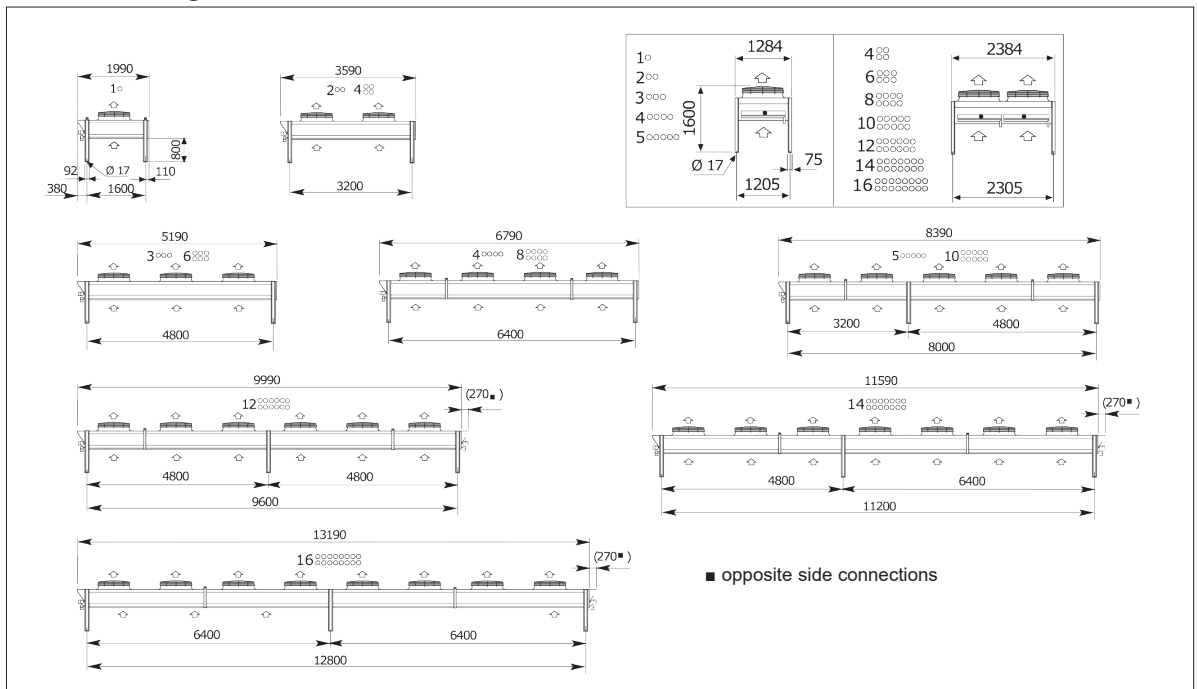




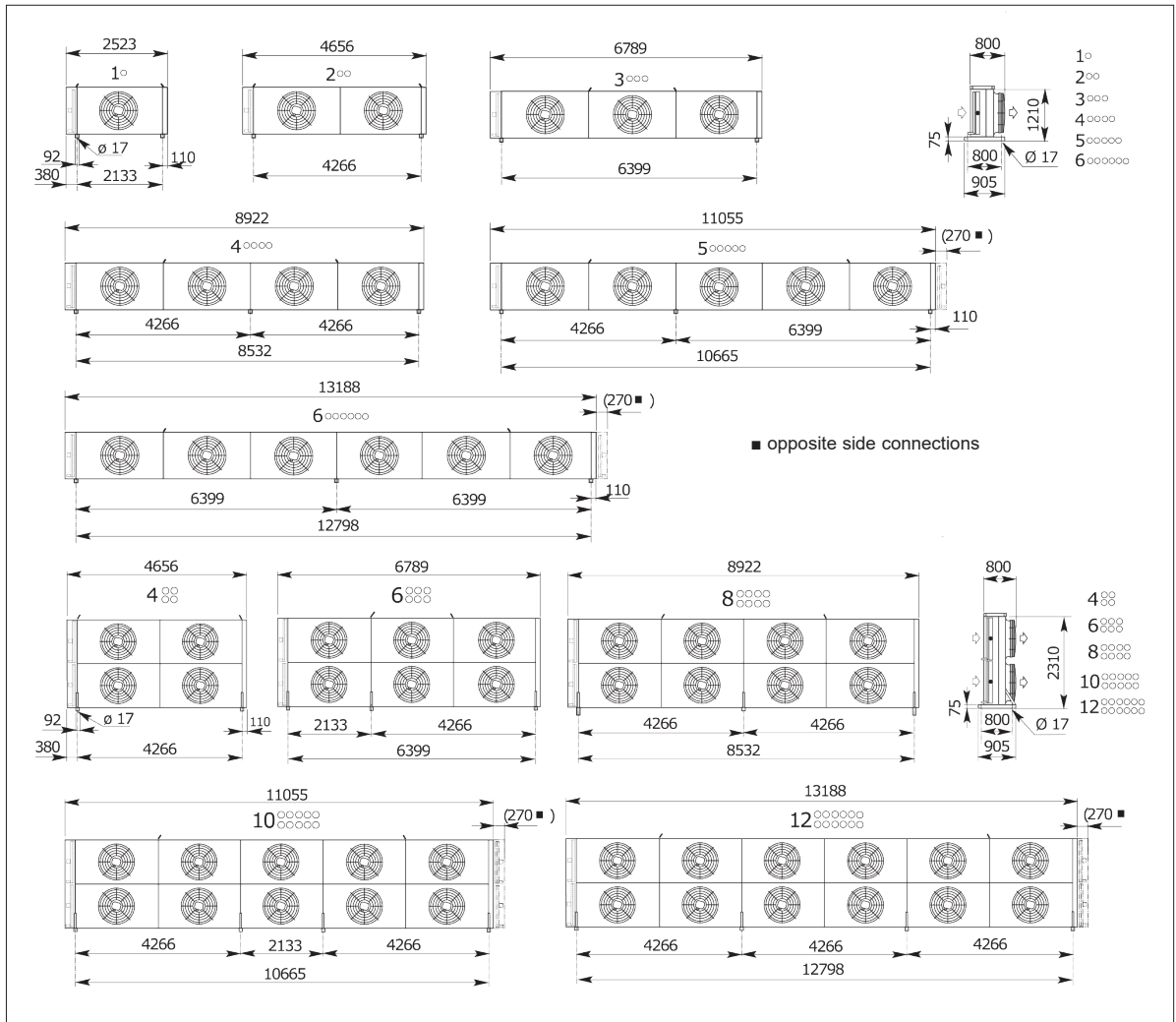
### 4.2 Mounting dimensions for B\*S8 V



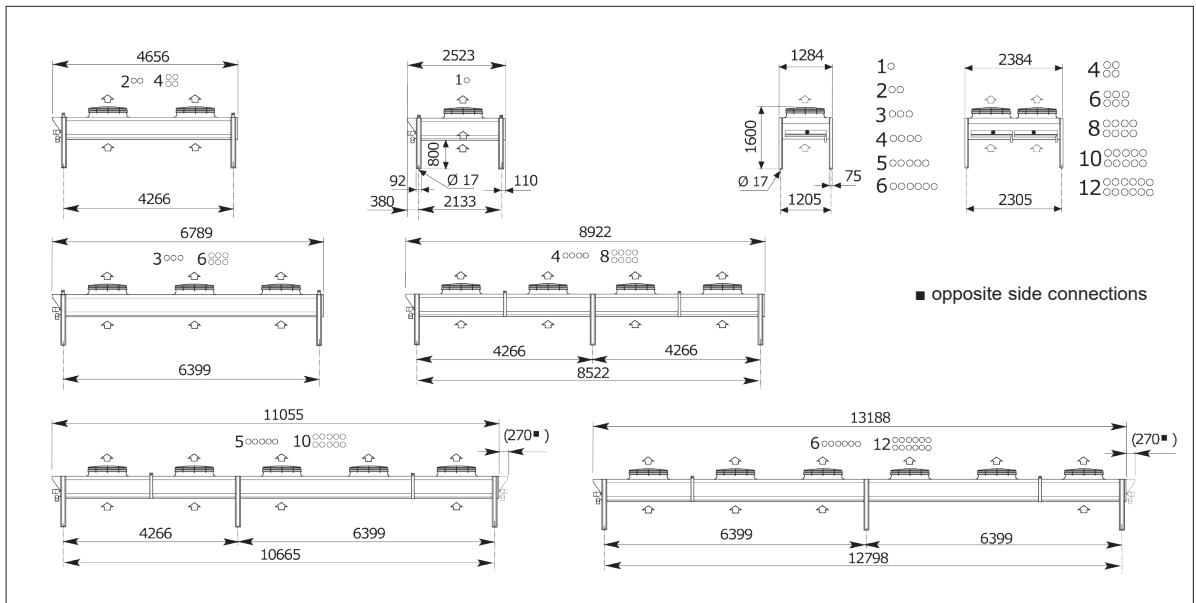
### 4.3 Mounting dimensions for B\*S8 H

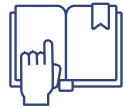


#### 4.4 Mounting dimensions for B\*E8, B\*E9, B\*E95 V

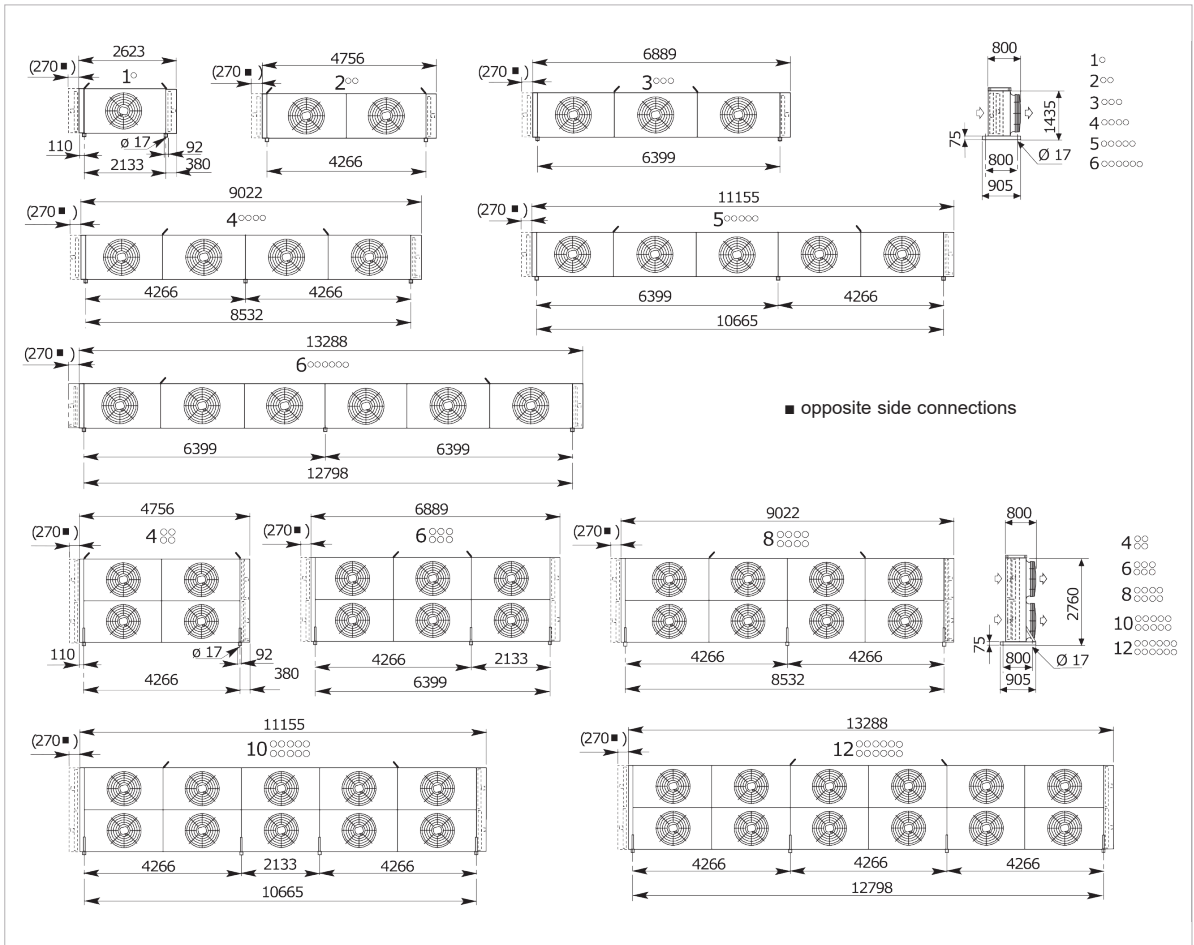


#### 4.5 Mounting dimensions for B\*E8, B\*E9, B\*E95 H

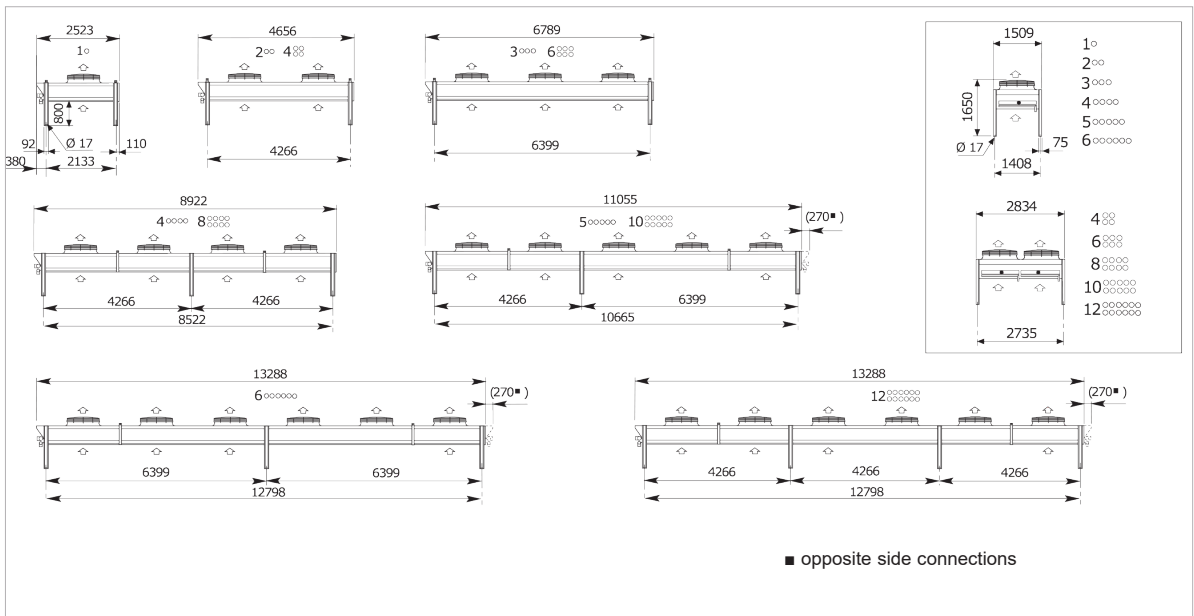




#### 4.6 Mounting dimensions for B\*X95, B\*X9, B\*X10 V



#### 4.7 Mounting dimensions for B\*X95, B\*X9, B\*X10 H



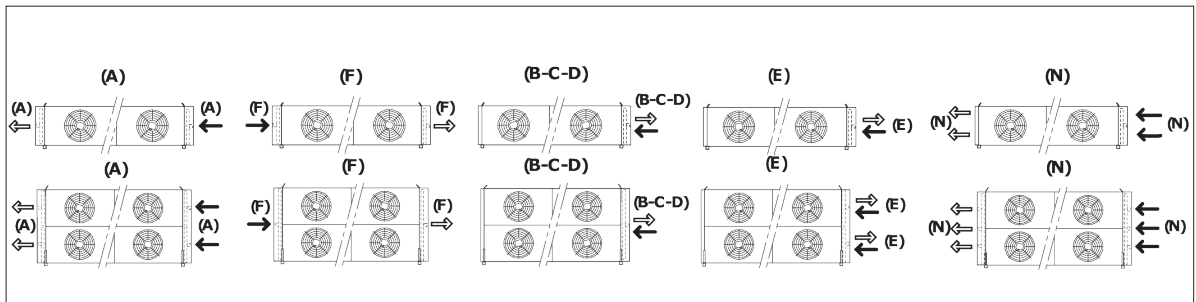
#### 4.8 Position of connections

Opposite side connections for:

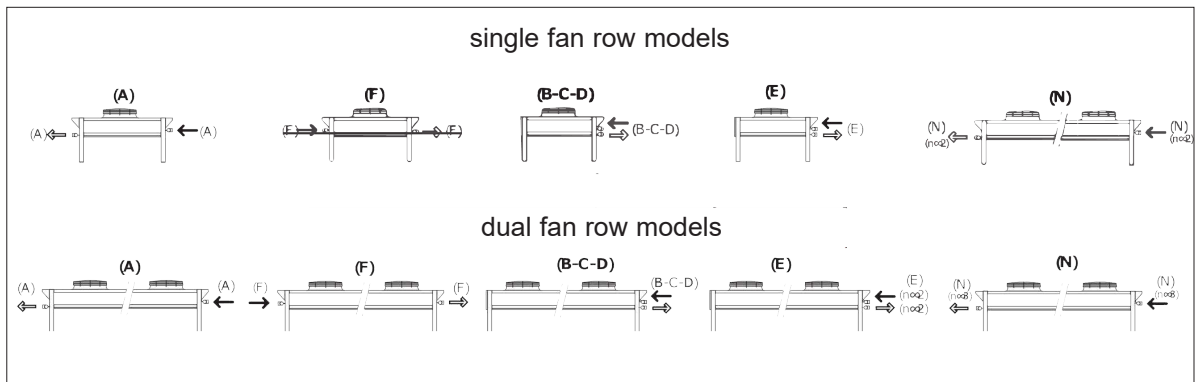
- BCS8S 2271 - 2272 - 2281 - 2282 H
- BCS8T 3260 - 3270 - 3280 - 3281 H
- BCE8, BCE9, BCE95
- BXE9F 364, BXE95F 2223
- BCX95, BCX9, BCX10

A, F, N = opposite side  
B, C, D, E = same side

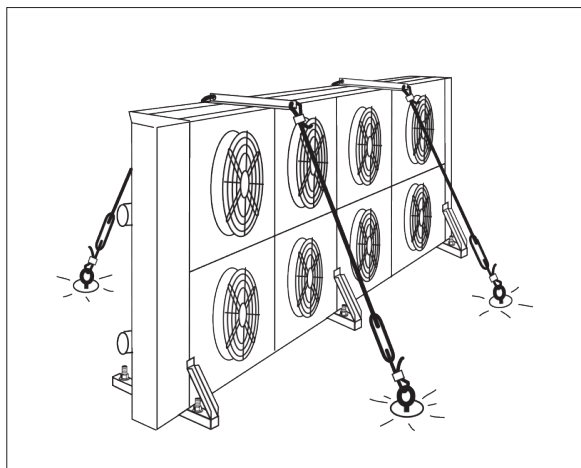
- B\*X95 V



- B\*E95, B\*X95



#### 4.9 Windbracing (Vertical installation)

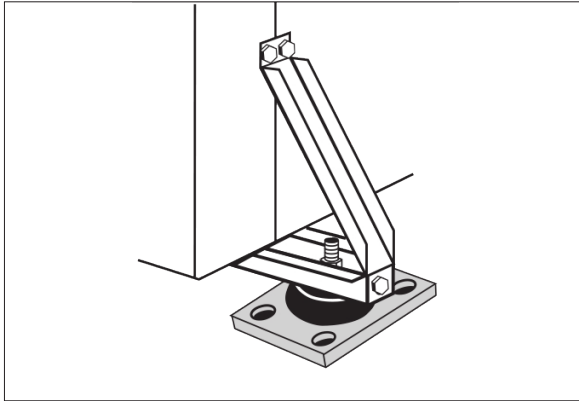


#### 4.10 Vibration dampers (optional)

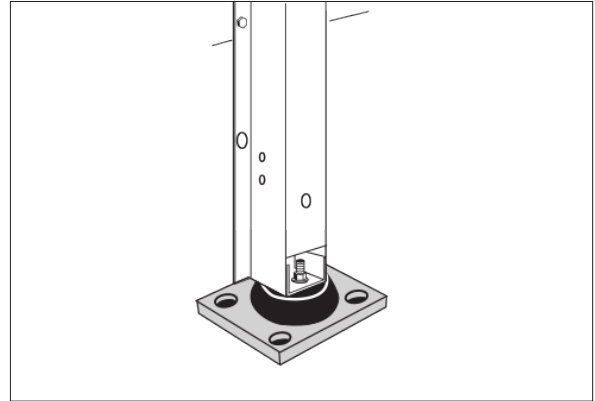


For active and passive isolation of vibrations and reducing noise transmission, Alfa LU-VE strongly recommends the installation of vibration dampers. Installation of vibration dampers must be carried out before positioning the unit. Vibration dampers are to be positioned between the unit feet and the mounting base with the supplied bolts.

**Vertical installation**

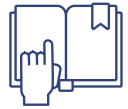


**Horizontal installation**

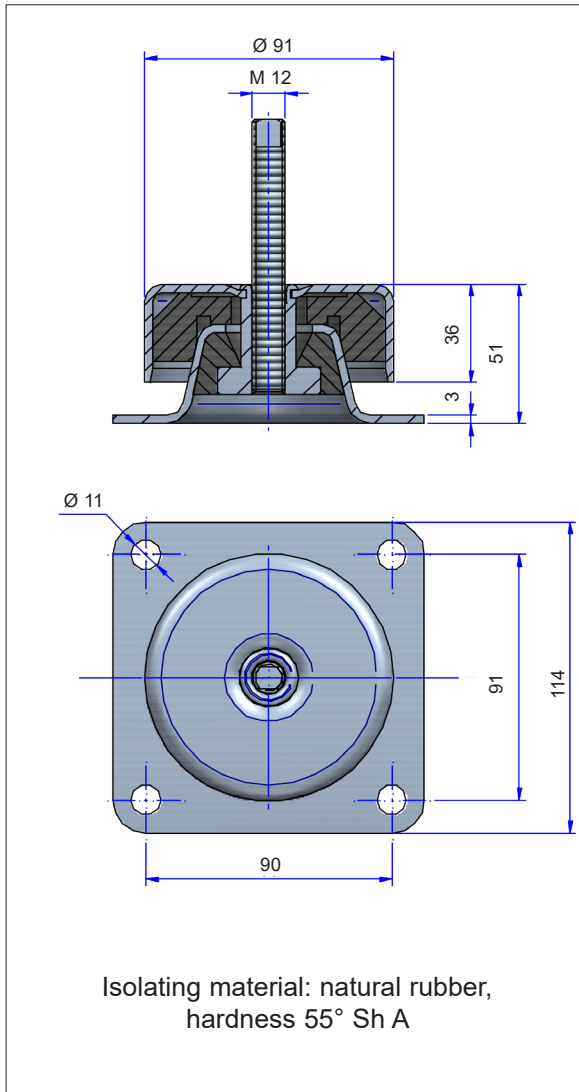


Model	No. of fan rows	No. of fans per row	Item code
B*S8S, B*S8T	1	1+4	30098733
	1	5	30098733
	2	2+3	30098733
	2	4	30098736
	2	5+8	30098736
B*E8S, B*E8T, B*E9N, B*9U, B*9X, B*E9F	1	1+3	30098733
	1	4+6	30098733
	2	2+3	30098733
	2	4+6	30098736
B*E95F, B*E95N, B*E95U, B*E95X	1	1+3	30098733
	1	4+6	30098733
	2	2+3	30098733
	2	4+6	30098736
B*X10N	1	1+3	30098733
	1	4+6	30098733
	2	2+3	30098733
	2	4+5	30098736
	2	6	30098736
B*X9K, B*X9N, B*X9U, B*X9X	1	1+3	30098733
	1	4+6	30098733
	2	2+3	30098733
	2	4+5	30098736
	2	6	30098736
B*X95F, B*X95N, B*X95U, B*X95X	1	1+3	30098733
	1	4+6	30098733
	2	2+3	30098733
	2	4+5	30098736
	2	6	30098736

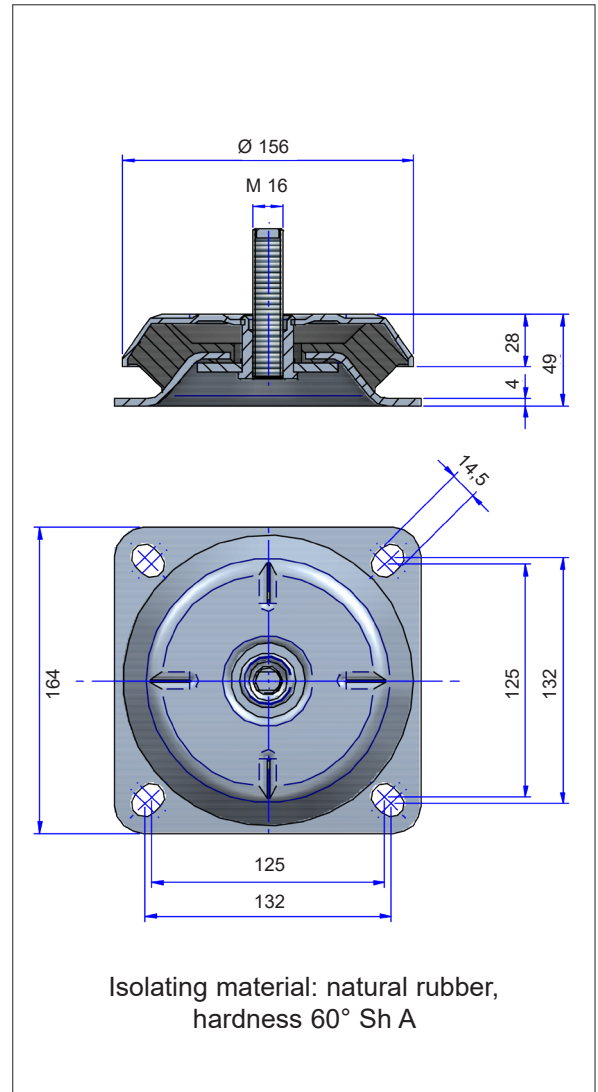




**30098733**

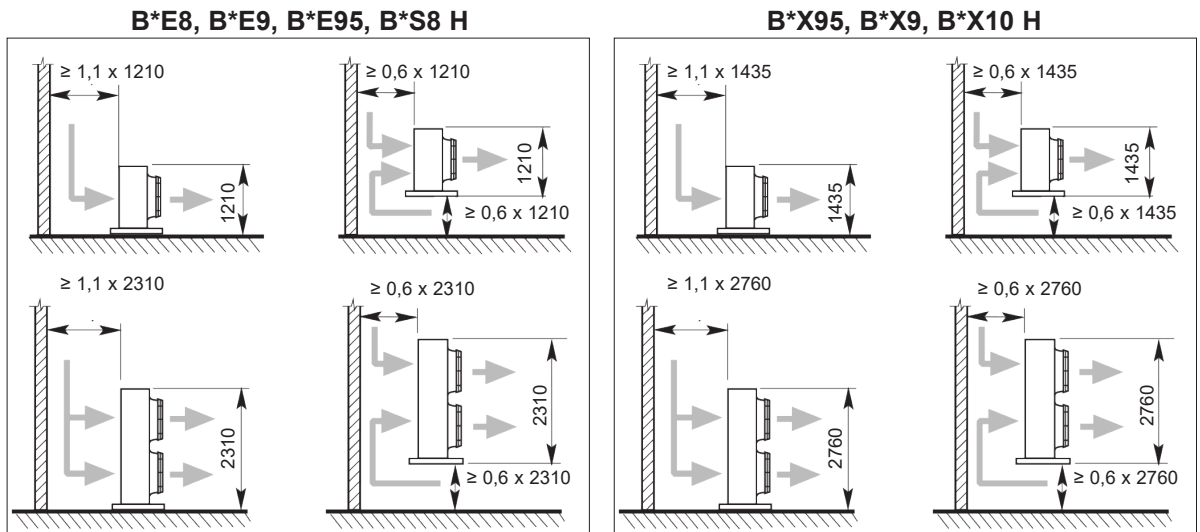


**30098736**

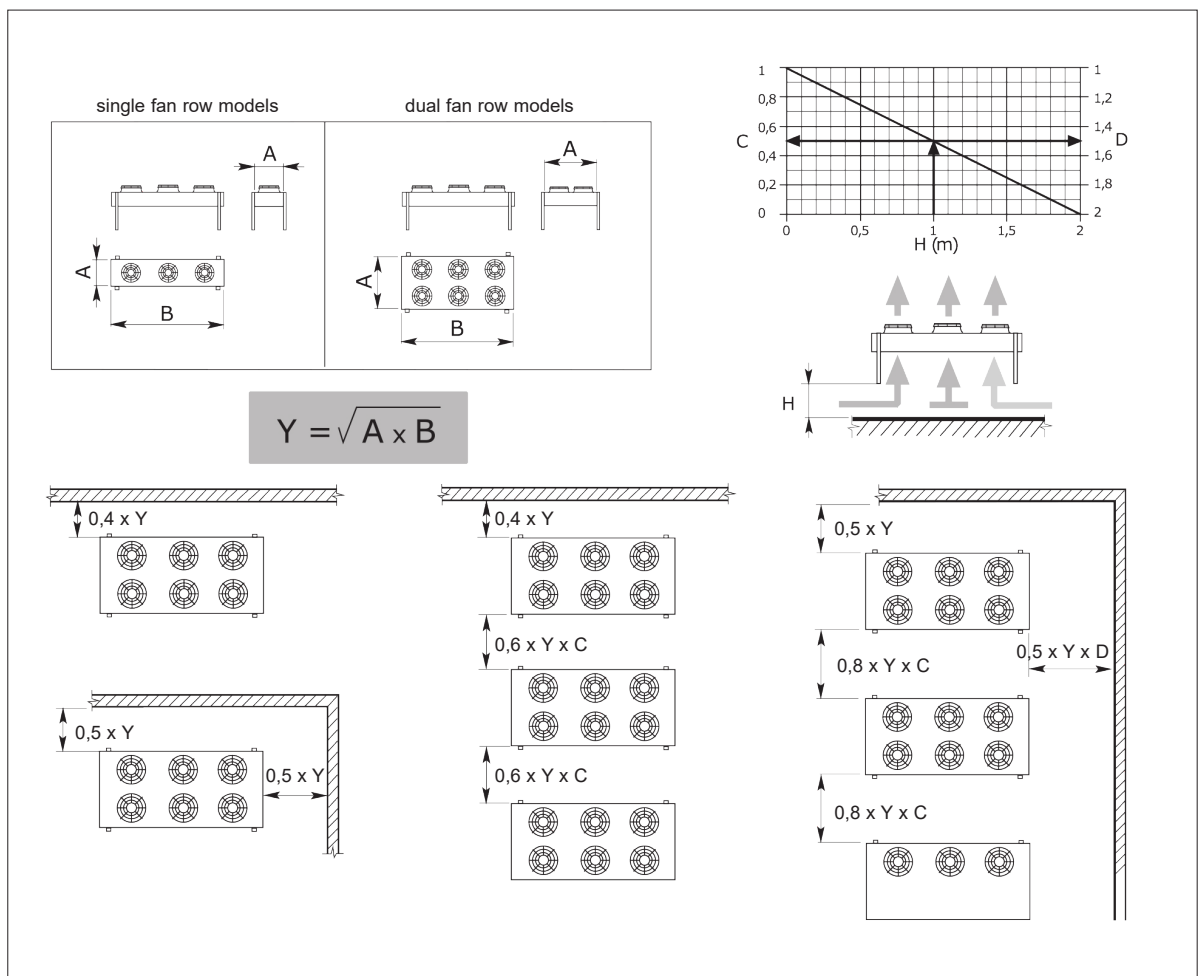


## 4.11 Positioning

### Vertical Installation

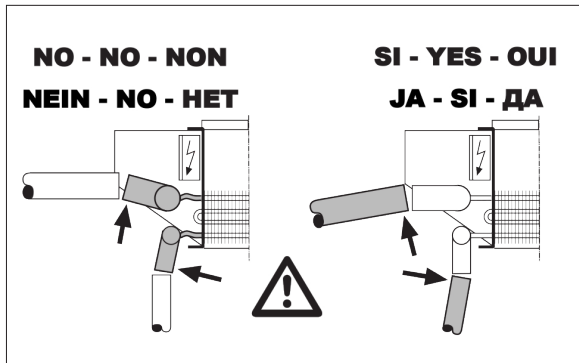


### Horizontal Installation



#### 4.12 Refrigerant connections

Before to proceed with the collectors/distributors connections it is mandatory to comply as follows make sure the supply circuit is closed (no pressure).



Ensure the flame nozzle is not aimed at the equipment, when welding. Insert a protection shield if required.

Do not adapt headers position to the suction line.

#### 4.13 Electrical connections

The following data determine which connection diagram is to be selected and respected for electrical installation:

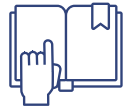
- Heat exchanger model indication
- Fan motor type
- Electrical options

Comprehensive electrical connection diagrams, electrical accessories included, are supplied at unit delivery.

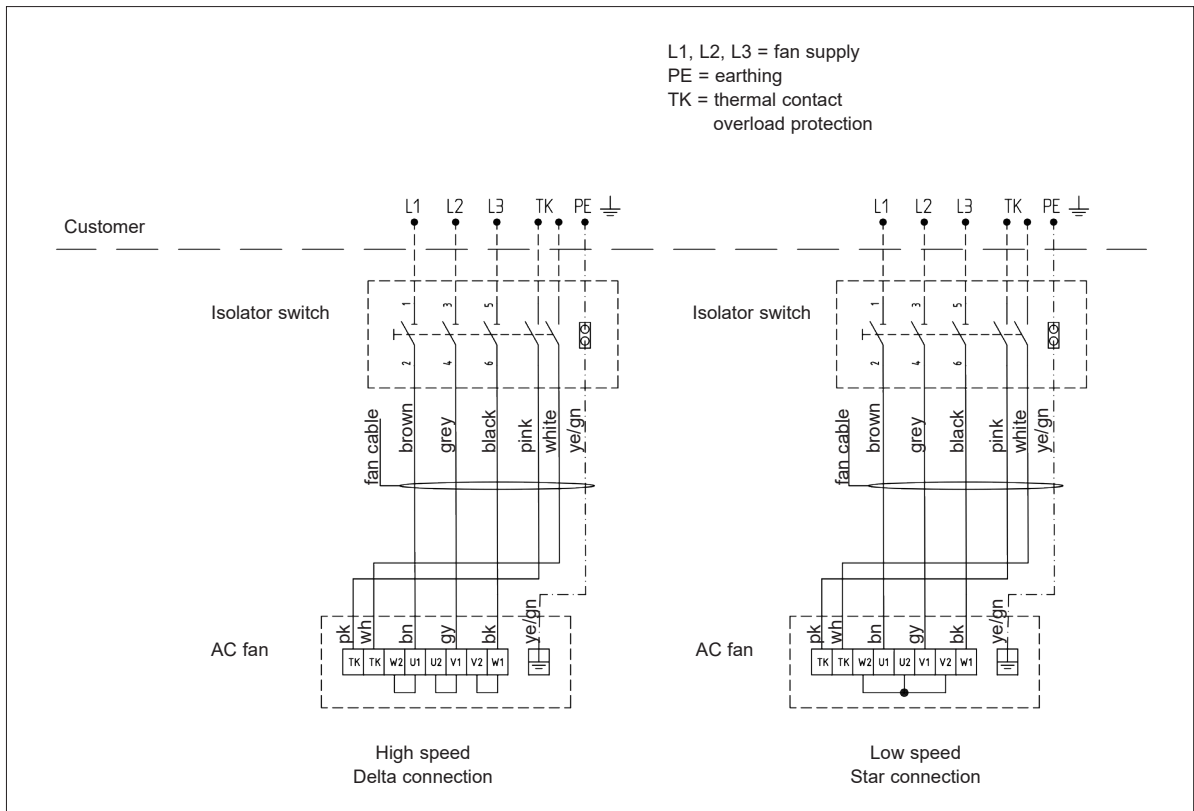
When in doubt always contact your local Alfa LU-VE representative for assistance.



Before to proceed with electrical wirings ensure the power line circuit is open.



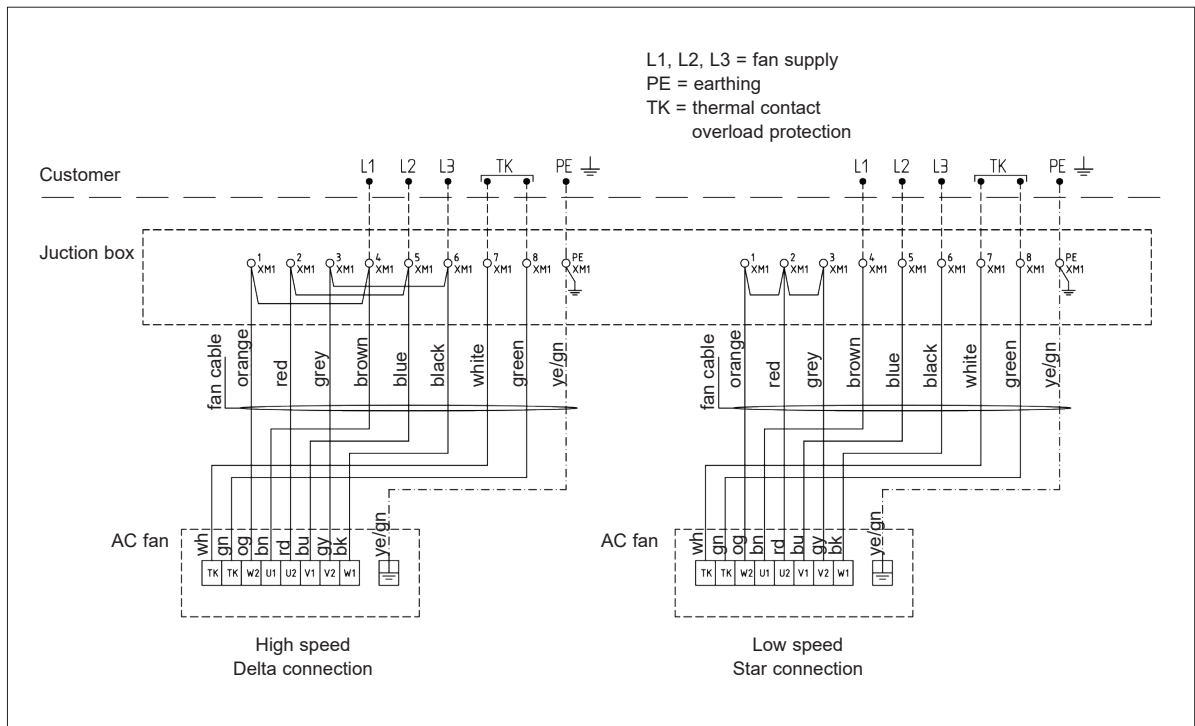
### AC fan motor + Isolator switch (SW - optional)



### AC 3-phase fan motor + SW

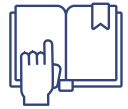
Power cable		
Use	Voltage	Colour
L1	400 V	brown
L2	400 V	grey
L3	400 V	black
PE circuit	-	yellow/green
Thermal contact	24 V max	white
Thermal contact	24 V max	pink

### AC fan motor + Junction box (CB - optional)

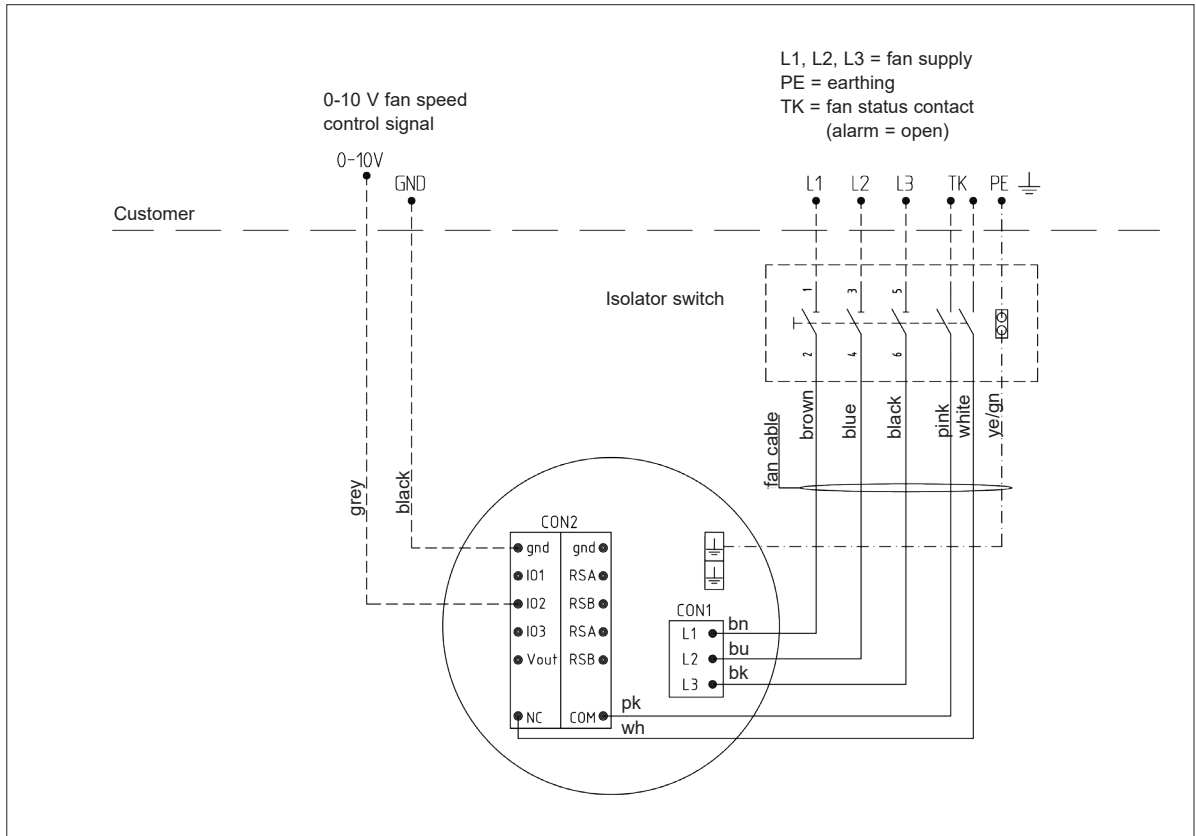


### AC 3-phase fan motor + CB

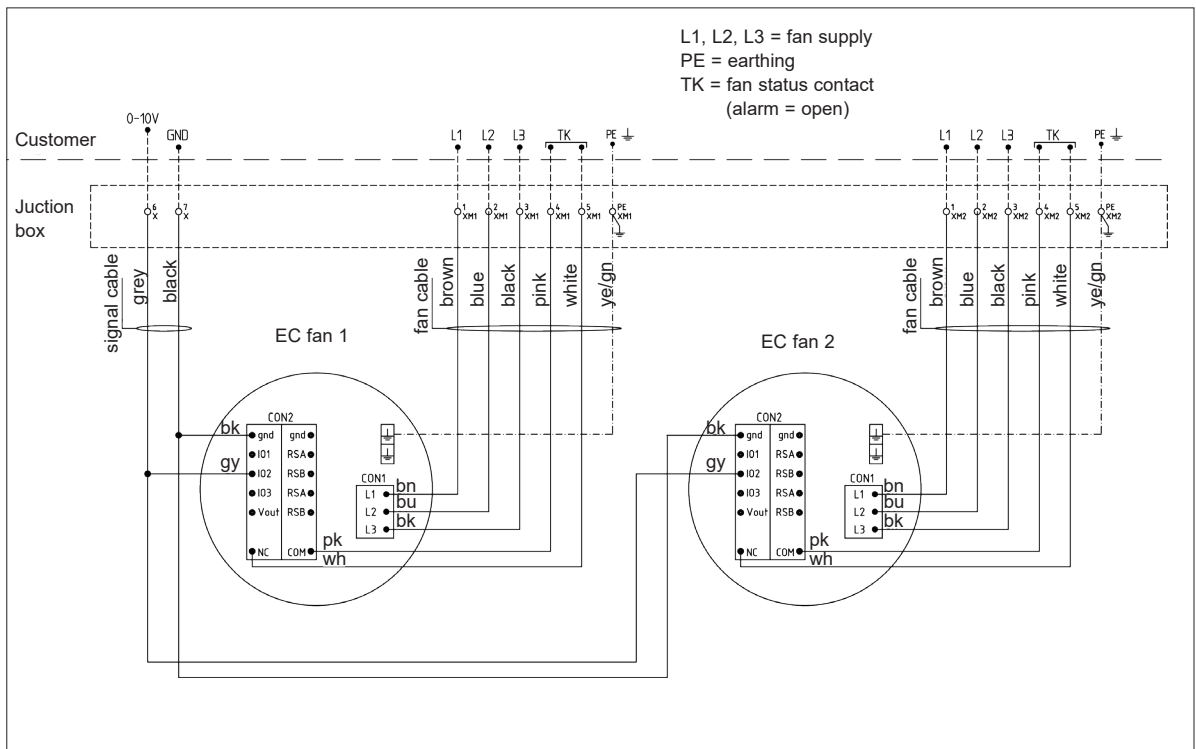
Power cable		
Use	Voltage	Colour
U1	400 V	brown
V1	400 V	blue
W1	400 V	black
U2	400 V	red
V2	400 V	grey
W2	400 V	orange
PE circuit	-	yellow/green
Thermal contact	24 V max	white
Thermal contact	24 V max	green

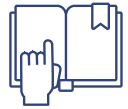


### EC fan motor + Isolator switch (SW - optional)



### EC fan motor + Junction box (CB - optional)





### EC 3-phase fan motor + SW/CB

Power cable		
Use	Voltage	Colour
L1	400 V	brown
L2	400 V	blue
L3	400 V	black
PE circuit	-	yellow/green
Status contact	24 V max	white
Status contact	24 V max	pink

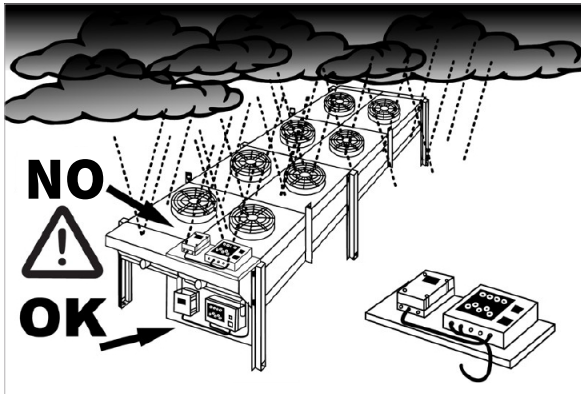
Auxiliary cable		
Use	Voltage	Colour
0-10 V signal	10 V	grey
GND	10 V	black

### EC 1-phase fan motor + SW/CB

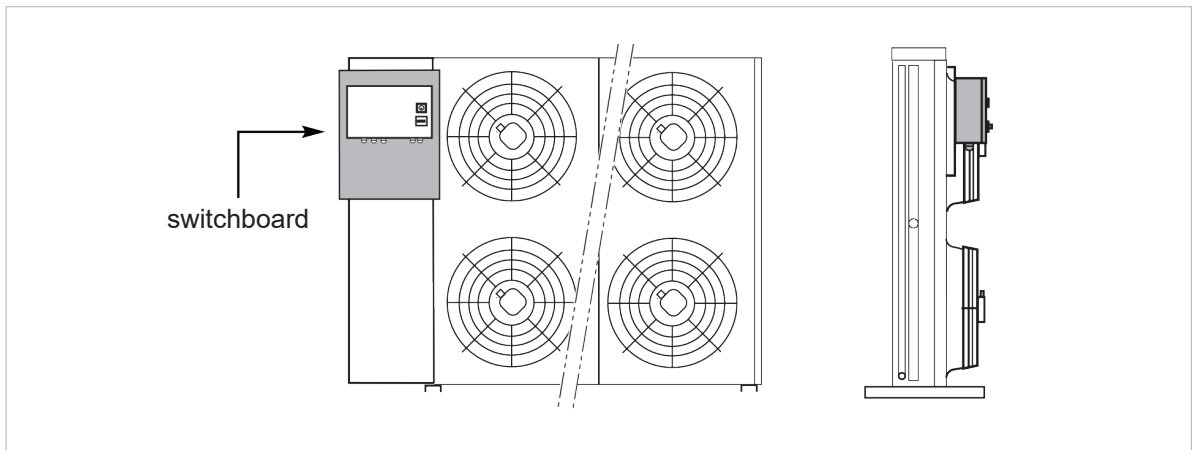
Power cable		
Use	Voltage	Colour
L	230 V	brown
N	230 V	blue
PE circuit	-	yellow/green
Status contact	24 V max	white
Status contact	24 V max	pink

Auxiliary cable		
Use	Voltage	Colour
0-10 V signal	10 V	grey
GND	10 V	black

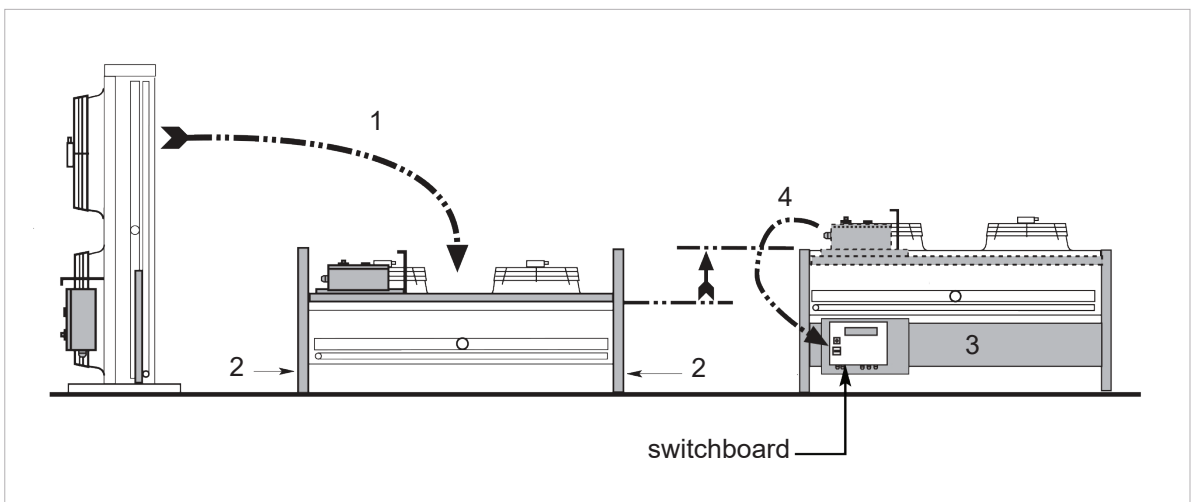
#### 4.14 Switchboard positioning



#### Vertical Installation



#### Horizontal Installation



Mount the feet (2) as described in chapter "4.1 Feet mounting".  
 On the collector side fix the fastening plate to the feet (3).  
 Move the switchboard and fix it to the fastening plate (4).



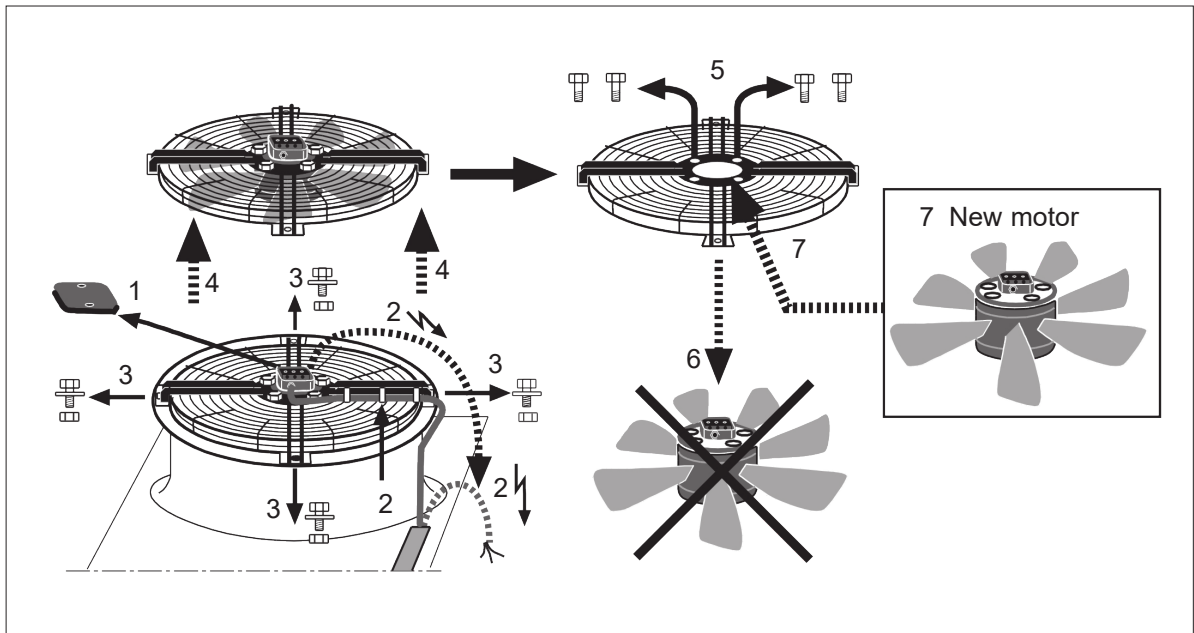
## 5 Maintenance



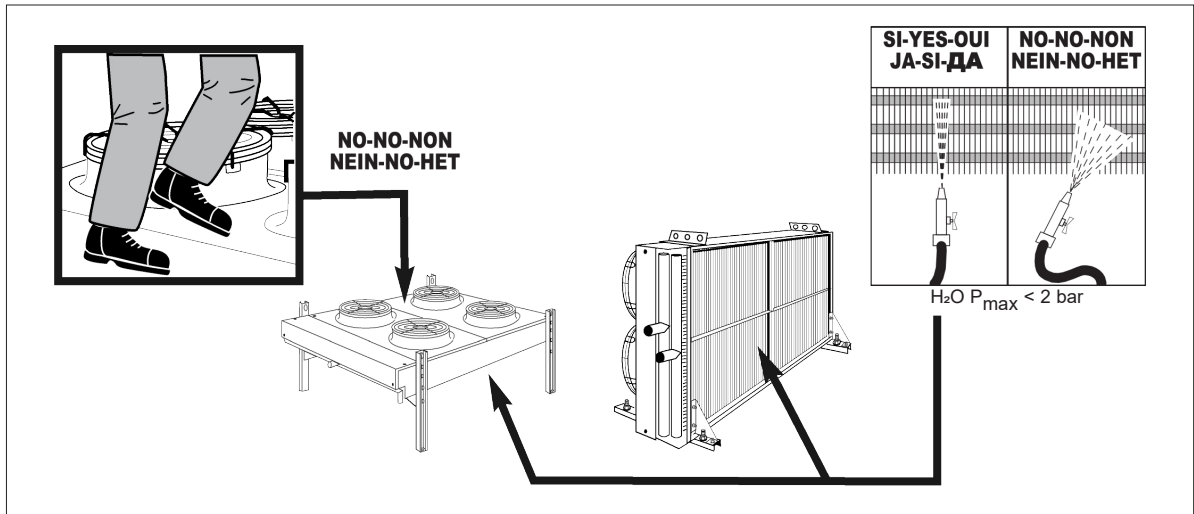
Before any service operations are performed switch off the electricity supply to the cooler. It is recommended 3-5 hourly run at 4 weekly intervals.



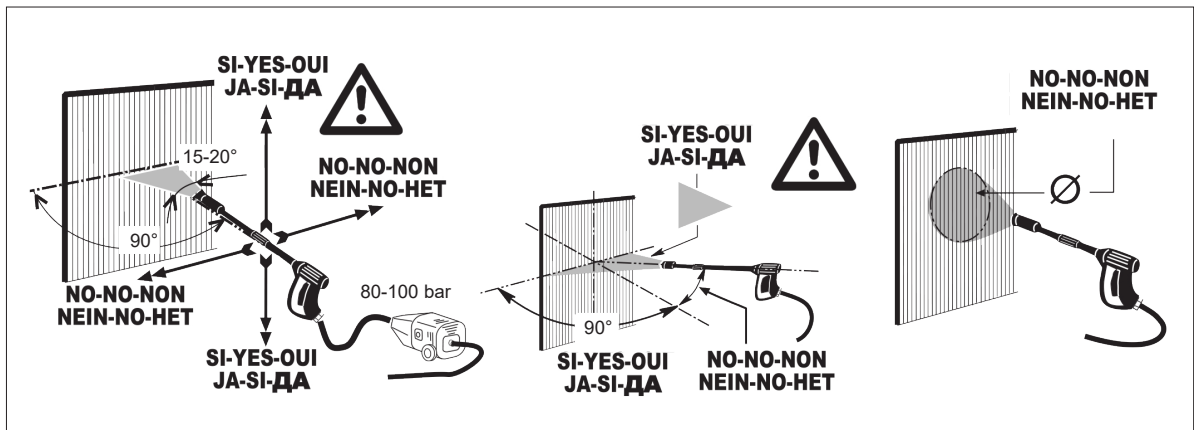
### 5.1 Fan replacement



## 5.2 Cleaning



- flat fan spray.
- water pressure 80÷100 bar.
- keep the water jet perpendicular to the fin edge.



Some traces of a transparent liquid may remain inside the circuit after the manufacturing process. This is evaporable oil which is compatible with refrigerants. It can easily be verified that this is oil and not water because it evaporates very quickly when touched; if a drop of it is placed on a surface it widens like a stain; and if exposed to the flame of a cigarette-lighter it burns, giving off white smoke.





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