# INSTALLATION INSTRUCTION

**CDX 500x250-3**
**CDX 500x300-3**
**CDX 600x350-3**
**CDX 800x500-3**
**CDX 700x400-3**
**CDX 1000x500-3**
**CDX 1200x600-3**

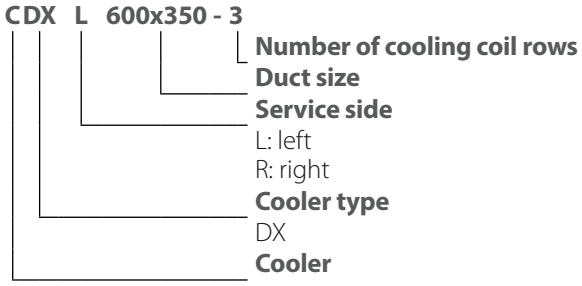
DX cooler

## CONTENTS


Designation key ..... 3
Compatibility of coolers and units ..... 3
Overall and connecting dimensions ..... 4
Mounting and set-up ..... 4
Technical maintenance ..... 8
Storage and transportation regulations ..... 8
Manufacturer's warranty ..... 9
Certificate of acceptance ..... 11
Seller information ..... 11
Installation certificate ..... 11
Warranty card ..... 11


The DX cooler is a component part and is not to be operated as a stand-alone unit.
The unit design is constantly being improved, thus some models may be slightly different from those described in this manual.

## DESIGNATION KEY




## COMPATIBILITY OF COOLERS AND UNITS

| | |
|---|---|
| AV02 RH 1500 | CDX 600x350-3 |
| AV02 RH 2500 | |
| AV02 CFH 1500 | |
| AV02 CFH 2500 | |
| AV02 CFP 1500 | |
| AV02 CFP 2500 | |
| AV03 CFP 3500 | |
| AV02 CFV 1500 | |
| AV02 CFV 2500 | |
| AV03 CFV 3500 | |
| AV02 PB 1500 | |
| AV02 PB 2500 | |
| AV03 PB 3500 | |
| AV03 RH 3500 | CDX 700x400-3 |
| AV03 CFH 3500 | |
| AV07 CFH 5000 | CDX 1000x500-3 |
| AV07 CFH 6000 | |
| AV07 RH 5000 | |
| AV07 RH 6000 | |
| AV07 CFV 5000 | |
| AV07 CFV 6000 | |
| AV07 PB 5000 | |
| AV07 PB 6000 | |
| AV07 CFP 5000 | CDX 800x500-3 |
| AV07 CFP 6000 | |
| AV12 RH 9000 | CDX 1200x600-3 |
| AV12 CFH 9000 | |

| | |
|---|---|
| AV01 CFV 800 | CDX 500x250-3 |
| AV01 CFV 1200 | |
| AV01 CFH 800 | |
| AV01 CFH 1200 | |
| AV01 PB 800 | |
| AV01 PB 1200 | |
| AV01 RH 800 | |
| AV01 RH 1200 | |
| AV01 CFP 1200 | CDX 500x300-3 |
| AV02RP 800 | |
| AV02RP 1500 | |
| AV02RP 2500 | |
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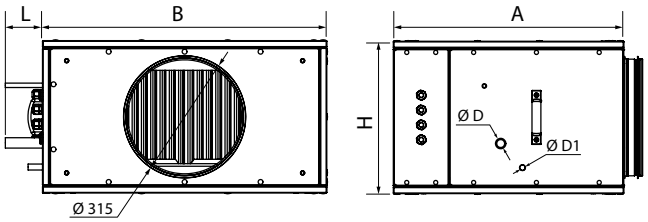
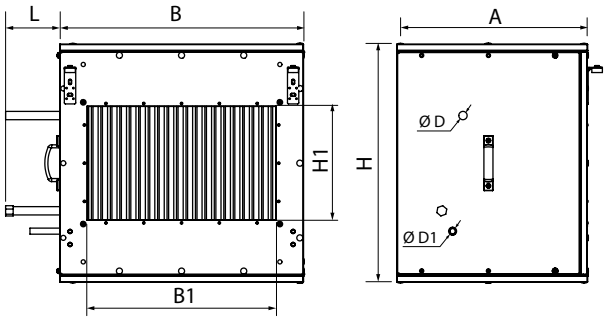
For right-hand suspended installations, left-hand cooler blocks are used, while for left-hand installations, right-hand cooler blocks are used.

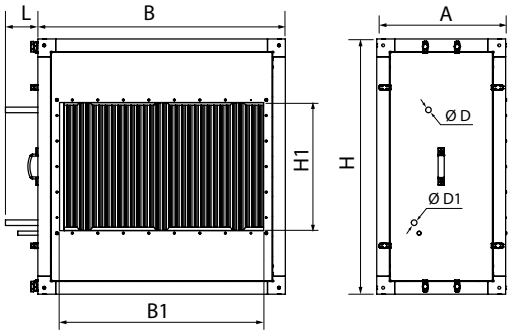
## OVERALL AND CONNECTING DIMENSIONS




| DX cooler | Dimensions [mm] | | | | | | D," | D1 [mm] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | B1 | H | H1 | L | | | |
| CDX 500x250-3 | 620 | 765 | - | 410 | - | 115-150 | 1 | 25 | 32 |

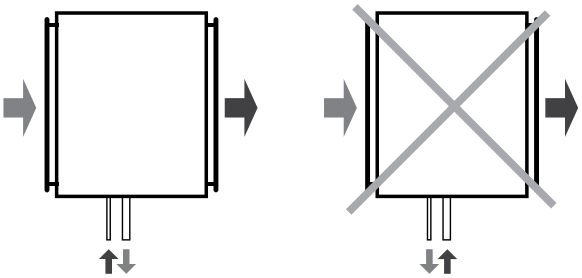



| DX cooler | Dimensions [mm] | | | | | | D," | D1 [mm] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | B1 | H | H1 | L | | | |
| CDX 600x350-3 | 505 | 750 | 600 | 480 | 350 | 115-150 | 1 | 25 | 42 |
| CDX 500x300-3 | | 645 | 500 | 630 | 300 | | | | 36 |
| CDX 700x400-3 | | 890 | 700 | 645 | 400 | | | | 68 |
| CDX 1000x500-3 | | 1280 | 1000 | 710 | 500 | | | | 138 |




| DX cooler | Dimensions [mm] | | | | | | D," | D1 [mm] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | B1 | H | H1 | L | | | |
| CDX 800x500-3 | 505 | 970 | 800 | 1000 | 500 | 115-150 | 1 | 25 | 160 |
| CDX 1200x600-3 | | 1430 | 1200 | 907 | 600 | | | | 210 |

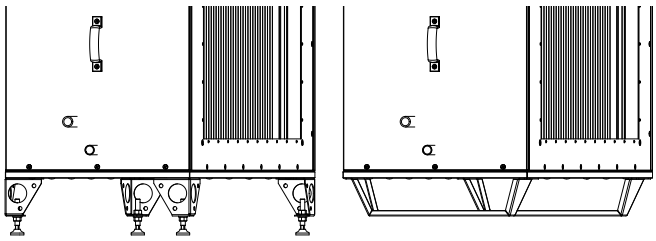
## MOUNTING AND SET-UP



Counter-flow connection

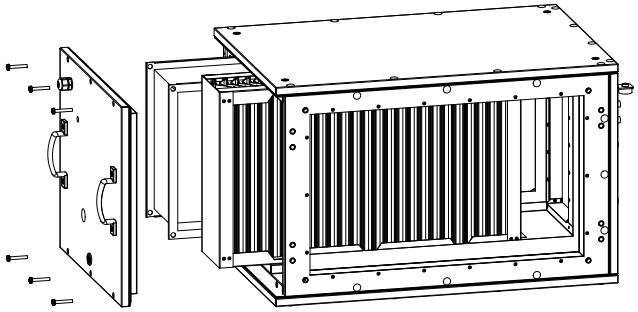
Direct-flow connection

To attain the maximum capacity, the cooler must be connected on counter-flow basis.

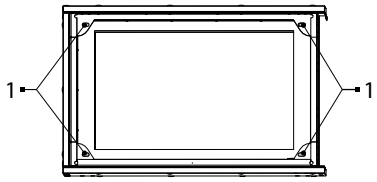


If the cooler is to be mounted on the floor, the feet must be screwed on.

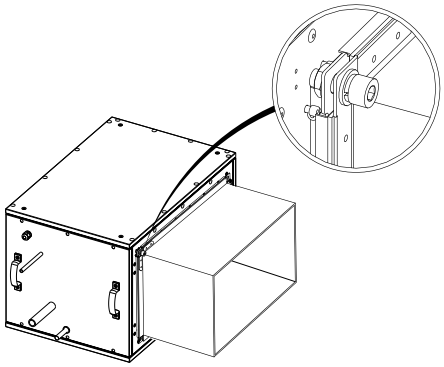
The feet are not included in the delivery set for 600x350 size coolers and must be ordered separately.



To connect the cooler to the unit, remove the front panel and remove the cooling unit and droplet separator.




Fasten the cooler casing to the unit with screws.
1 - places for mounting screws.



The cooler is connected to the air duct using a flange connection.

Outdoor installation of the cooler is permissible.
While mounting the cooling unit provide quick and easy dismantling of the cooler, the drain pan of the droplet separator and the drain pipe.

**Sensor placement.**

The supply air duct temperature sensor always be placed downstream of the cooler (in the direction of the air flow), mounted in the air duct downstream of the heat exchanger at a distance of 3 m from it.

## Condensate drainage

The components of the unit that have a condensate drain must be equipped with a trap to ensure that the casing is watertight and that water can be drained out uninterrupted through the drainage spigot on both the suction and discharge sides.

**Recommendations for organizing condensate drainage are given below.**
**All components of the system are not included in the delivery set of the unit and must be purchased separately.**
**The manufacturer of the ventilation system is not liable for the operability of the condensate drainage system installed at a particular facility.**

When installing the heat exchanger on the floor, ensure sufficient distance from the floor to the bottom of the heat exchanger to fit the entire condensate drainage system.

A trap must be provided at each drainage spigot, separating it from the drainage pipe. Multiple outlets must not be connected to a common trap.

The drainage pipes must have a downward slope of at least 3°, without any tapering or loops, so as not to obstruct the water flow.

Due to the positive or negative air pressure inside the air handling unit, water cannot drain out of the condensate drip tray by itself. Therefore, it is necessary to connect a trap of a suitable height or a trap with a one-way valve to the drainage pipe. The trap must have a water level that is high enough to counteract the pressure drop between the internal and external space.

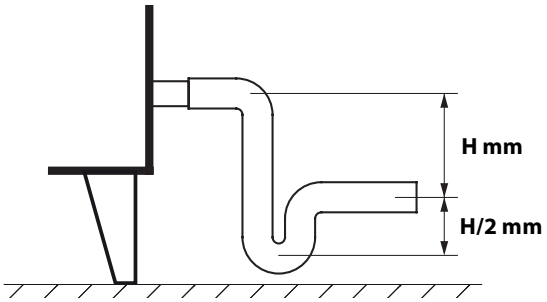
The height of the trap is selected based on the static pressure inside the air handling unit (the static pressure is specified in the technical data sheet for the unit).

- only use the positive value for calculations;
- take into account the final pressure drop (filter, etc.).

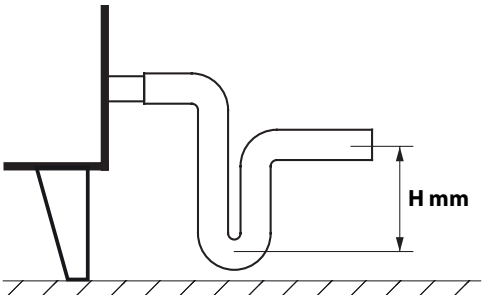
For a trap wit no one-way valve, the height **H** is determined by the static pressure **p** using the formula:
**H** [mm] = 25 + **p,** if the pressure is expressed in mm of the water level.
**H** [mm] = 25 + 0.1**p** if the pressure is expressed in Pa.

The figures below illustrate the geometric features of the traps.

The suction side. Negative pressure (**$p < p_{atmospheric}$**)

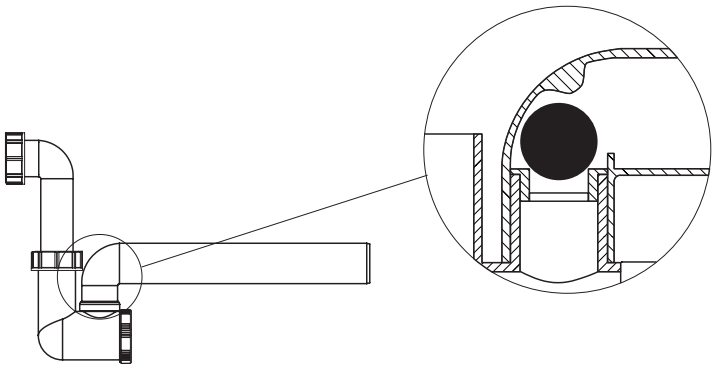



The discharge side. Positive pressure (**$p > p_{atmospheric}$**)



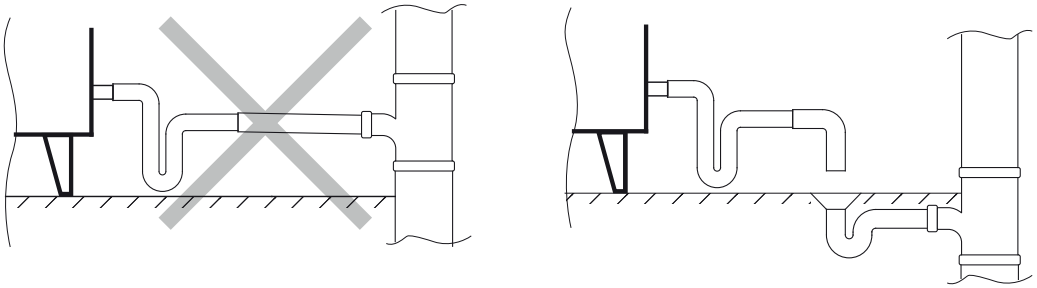

If the trap is equipped with a one-way valve, the height can be reduced, but this depends on the technical data of the trap. It is recommended to choose the height similarly to the trap without a one-way valve.

The figure below illustrates a schematic example of a trap with a one-way valve.



Fill up the U-traps with water before using the system.
The trap must be filled with water at all times as long as the system is operating.

The condensate drainage system should not be directly connected to the common sewage system to avoid polluting the air with bacteria and odors.



To prevent the water from freezing over in winter, the pipeline laid outdoors or in unheated rooms must be equipped with heat insulation and pre-heating.

## TECHNICAL MAINTENANCE

Maintenance means regular preventive measures during operations.
The aluminium ribs and the droplet separator must be cleaned at least once per year by vacuum cleaner or pressure water flushing.
The cleaning periodicity depends on air pollution degree and maintenance quality of the filters and equipment.
If the internal environment is clean enough, the cleaning may be performed more seldom, as required.
The U-trap maintenance includes regular control of water level and sufficient U-trap and drain pipes clearance.

## STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 ˚C to +40 ˚C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

## MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Compatibility (EMC) Directive 2014/30/EU of the European Parliament and of the Council, Low Voltage Directive (LVD) 2014/35/EU of the European Parliament and of the Council and CE-marking Council Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above.
The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

**The warranty repair does not include:**

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

**The manufacturer's warranty does not apply to the following cases:**

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.

**FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.**

**USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.**

## CERTIFICATE OF ACCEPTANCE

| | |
|---|---|
| **Unit Type** | DX cooler |
| **Model** | |
| **Serial Number** | |
| **Manufacture Date** | |
| **Quality Inspector's Stamp** | |

## SELLER INFORMATION

| | |
|---|---|
| **Seller** | |
| **Address** | |
| **Phone Number** | |
| **E-mail** | |
| **Purchase Date** | |
| This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted. | |
| **Customer's Signature** | |

Seller's Stamp

## INSTALLATION CERTIFICATE

| | | |
|---|---|---|
| The _____ unit is installed pursuant to the requirements stated in the present user's manual. | | |
| **Company name** | | |
| **Address** | | |
| **Phone Number** | | |
| **Installation Technician's Full Name** | | |
| **Installation Date:** | **Signature:** | |
| The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer. | | |
| **Signature:** | | |

Installation Stamp

## WARRANTY CARD

| | |
|---|---|
| **Unit Type** | DX cooler |
| **Model** | |
| **Serial Number** | |
| **Manufacture Date** | |
| **Purchase Date** | |
| **Warranty Period** | |
| **Seller** | |

Seller's Stamp

**Manufacturer:** Ventilation Systems LLC,
Ukraine, Kyiv, 1 M. Kotsyubynskoho Street
**Address of production facilities:**
Ukraine, Kyiv Region, Fastiv District, Boyarka, 36 Sobornosti Street

V234-3EN-01