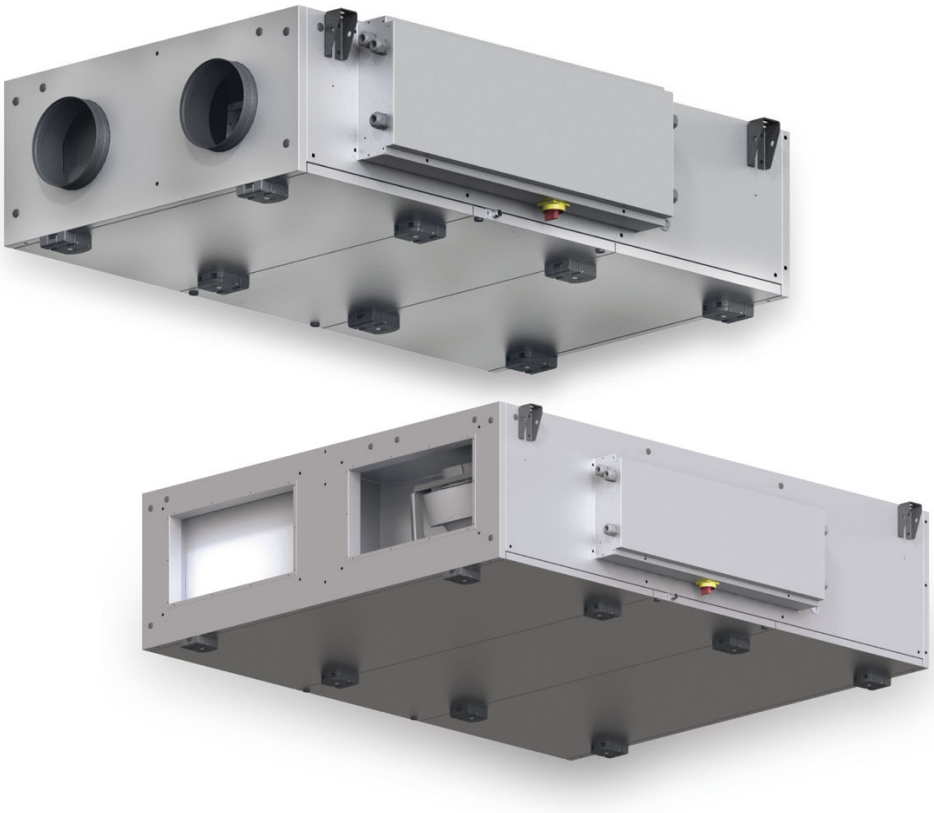
GB

CX3000

Assembly, installation, and maintenance instructions



Original instructions

EXHAUSTO A/S
Odensevej 76 · DK-5550 Langeskov
Tel.: +45 65661234 · exhausto@exhausto.dk
www.exhausto.dk

a member of Soler&Palau Ventilation Group

EXHAUSTO

1. Product information

2. Handling

3. Mechanical assembly

4. Maintenance, hygiene and servicing

5. Technical data

6. Unit Accessories

EXHAUSTO

1. Product information

Symbols, warnings and terms

Prohibition symbol

Failure to observe instructions marked with a prohibition symbol may result in serious or fatal injury.

Danger symbol

Failure to observe instructions marked with a danger symbol may result in personal injury and/or damage to the unit.

Scope

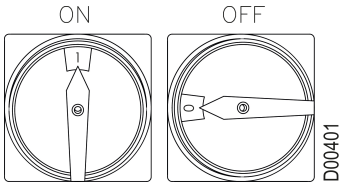
This instruction manual is for use with EXHAUSTO CX3000 air handling units. Please refer to the product instructions regarding accessories and extra equipment.

The instructions must be fully observed to ensure personal safety and to protect the equipment and ensure its correct operation. EXHAUSTO A/S accepts no liability for accidents caused by equipment not used in accordance with the manual's instructions and recommendations.

Warnings

Opening the unit

Do not open the service doors until the supply voltage has been disconnected at the isolation switch and the fans have stopped.



Prohibited uses

The CX3000 unit is not to be used to transport solid particles or in areas where there is a risk of explosive gases.

No duct connection

If one or more of the inlets/outlets is not connected to a duct: Fit a protective net to the inlets/outlets with a maximum mesh width of 20 mm.

Placement

The CX3000 is only for use inside buildings. It is designed to be mounted on the ceiling.

Supply air/extract air

This instruction manual uses the following terminology:

- Supply air (air blown in)
- Extract air (air removed)
- Outdoor air
- Exhaust air

Left/Right

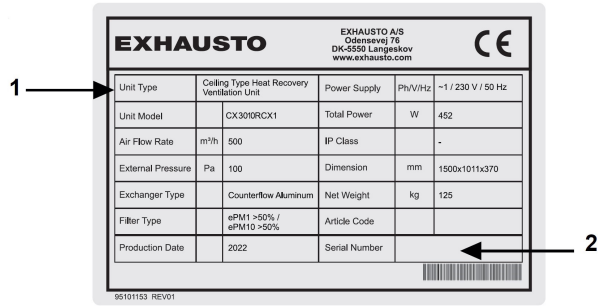
See definition of Left/Right in Section 1.1 Model overview.

Dimensions

Dimensions given in all sections of the manual are in millimeters (mm).

Information plate, location and Serial number

Information plate



The CX3000 unit information plate shows:

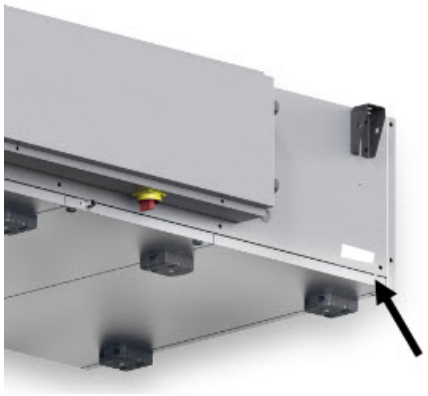
1. CX3000 Type & model.
2. Serial number.

NB

Always have the serial number ready when contacting EXHAUSTO A/S.

Location of information plate

Information plate is located on the side of the unit.

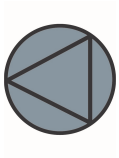
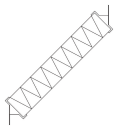
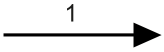
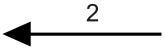


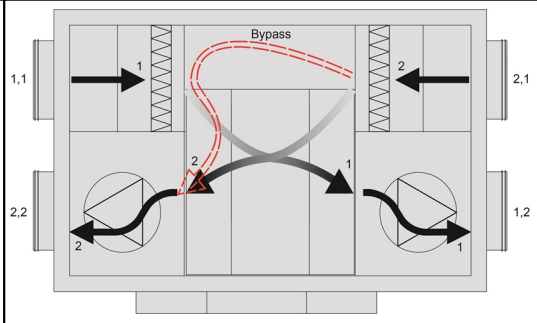
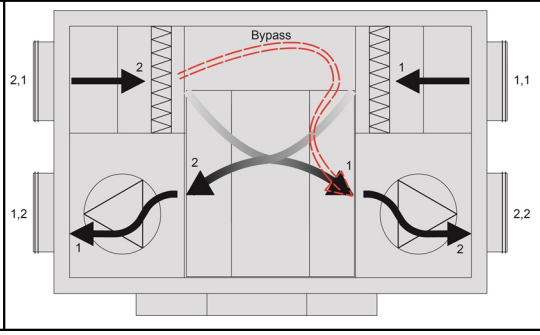
Searching via web for the latest update of the instruction

IMPORTANT!

Always check whether the latest version of the instruction is available.
Search EXHAUSTO's website under Downloads via the instruction number on the top left-hand side of the instructions.

1.1 Model overview left/right airdirection

Elements	Description
	Fan
	Compact filter
1,1	Extract air inlet
1,2	Exhaust air outlet
2,1	Outdoor air inlet
2,2	Supply air outlet
1 	Air direction, extract air
2 	Air direction, supply air

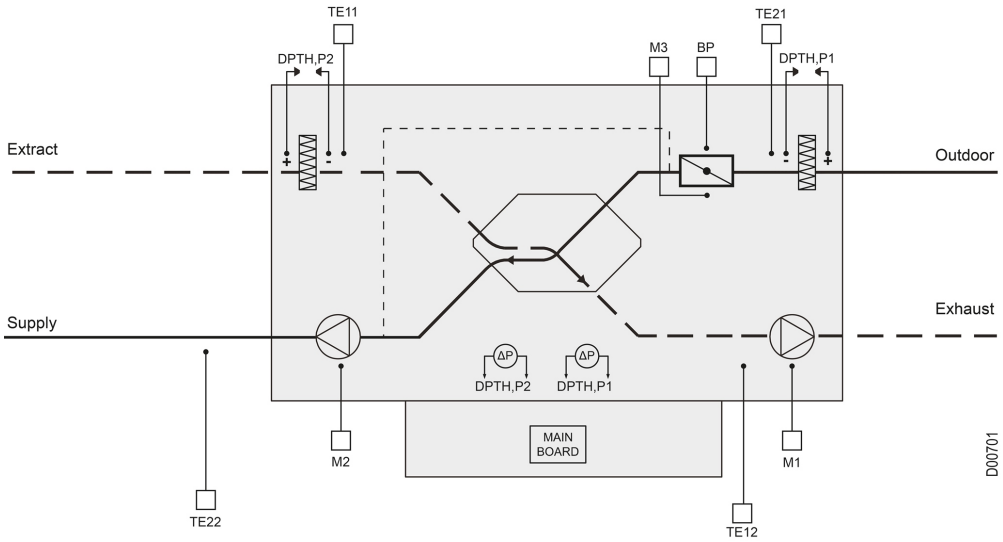
Fan placement	Air directions
CX3000L (left unit) from above	
CX3000R (right unit) from above	

EXHAUSTO

1.2 CX3000 Component and function

1.2.1 Simplified diagram CX3010-CX3020 Left/Right

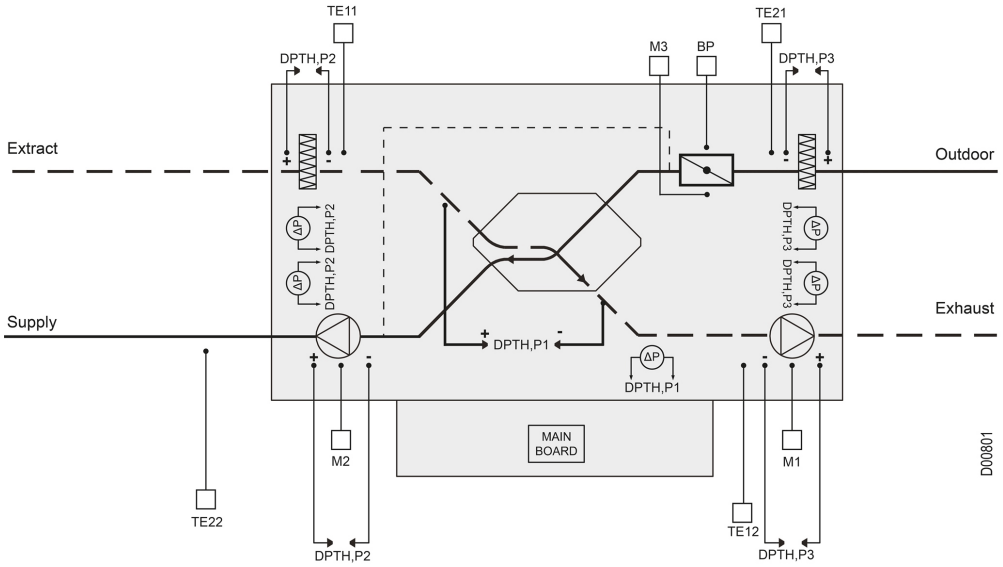
CX3010/CX3020, top view



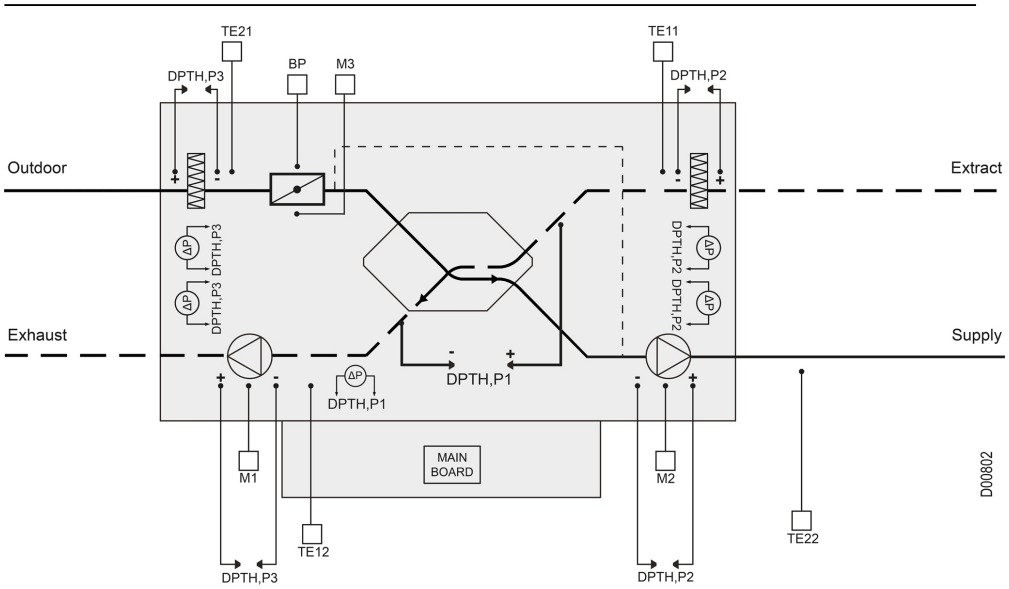
Component and function

Component	Function	Standard/Accessory
DPTH, P2	Extract air filter pressure drop measurement	Standard
TE11	Extract air temperature measurement	Standard
TE12	Exhaust air temperature measurement (used for de-icing purposes)	Standard
M1	Exhaust air motor	Standard
Main Board	Control box	Standard
DPTH, P1	Outdoor air filter pressure drop measurement	Standard
TE21	Outdoor air temperature measurement	Standard
M2	Outdoor/Supply air motor	Standard
BP	Outdoor air bypass damper	Standard
M3	Bypass damper motor	Standard
TE22	Supply air temperature measurement	Standard

CX3030L/CX3040L CX3050L/CX3060L, top view



CX3030R/CX3040R CX3050R/CX3060R, top view

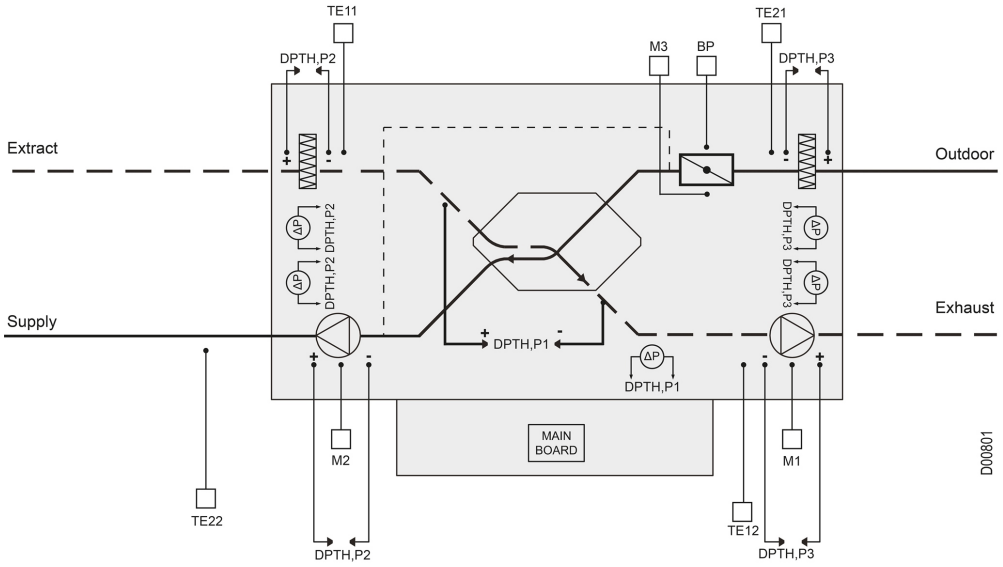


EXHAUSTO

Component	Function	Standard/Accessory
DPTH, P2	Extract air filter pressure drop measurement	Standard
TE11	Extract air temperature measurement	Standard
DPTH, P1	Measure the heat exchanger pressure drop	Standard
TE12	Exhaust air temperature measurement	Standard
M1	Extract/Exhaust air motor	Standard
DPTH, P3	Exhaust air flow measurement	Standard
Main Board	Control box	Standard
DPTH, P3	Outdoor air filter pressure drop measurement	Standard
TE21	Outdoor air temperature measurement	Standard
M2	Outdoor/Supply air motor	Standard
BP	Outdoor air bypass damper	Standard
M3	Bypass damper motor	Standard
DPTH, P2	Supply air flow measurement	Standard
TE22	Supply air temperature measurement	Standard

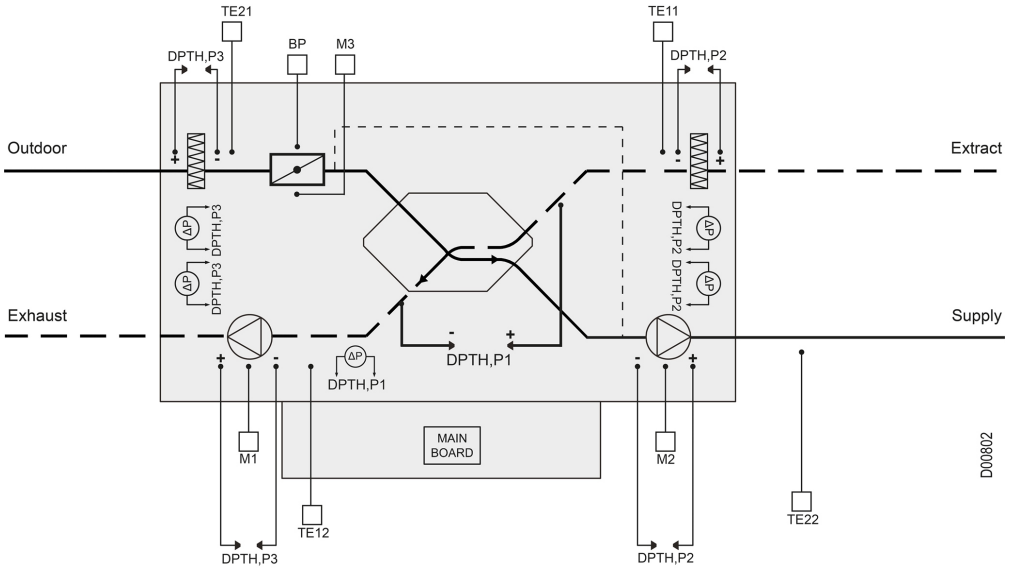
1.2.2 Simplified diagram CX30-40-50-60 Left/Right

CX3030L/CX3040L CX3050L/CX3060L, top view



EXHAUSTO

CX3030R/CX3040R CX3050R/CX3060R, top view



Component and function

Component	Function	Standard/Accessory
DPTH, P2	Extract air filter pressure drop measurement	Standard
TE11	Extract air temperature measurement	Standard
DPTH, P1	Measure the heat exchanger pressure drop	Standard
TE12	Exhaust air temperature measurement	Standard
M1	Extract/Exhaust air motor	Standard
DPTH, P3	Exhaust air flow measurement	Standard
Main Board	Control box	Standard
DPTH, P3	Outdoor air filter pressure drop measurement	Standard
TE21	Outdoor air temperature measurement	Standard
M2	Outdoor/Supply air motor	Standard
BP	Outdoor air bypass damper	Standard
M3	Bypass damper motor	Standard
DPTH, P2	Supply air flow measurement	Standard
TE22	Supply air temperature measurement	Standard

1.3 General Unit Specifications

Unit Model	Nominal Air Volume Flow Rate (m^3/h)	External Static Pressure @ Nominal Air Flow Rate (Pa)	Phase	Voltage (V)	Frequency (Hz)	Max. Power Current (A)	Max. Power Consumption (W)
CX3010LC/CX3010RC	500	100	1	230	50	3.4	452
CX3010LM/CX3010RM	500	100	1	230	50	3.0	406
CX3020LC/CX3020RC	900	150	1	230	50	4.2	560
CX3020LM/CX3020RM	900	150	1	230	50	3.2	668
CX3030LC/CX3030RC	1400	200	1	230	50	5.0	1120
CX3030LM/CX3030RM	1400	200	1	230	50	6.2	1020
CX3040LC/CX3040RC	2000	300	1	230	50	7.0	1580
CX3040LM/CX3040RM	2000	300	1	230	50	7.2	1620
CX3050LC/CX3050RC	2500	300	3	400	50	4.0	2320
CX3050LM/CX3050RM	2500	300	3	400	50	4.8	2860
CX3060LC/CX3060RC	3300	300	3	400	50	4.0	2320
CX3060LM/CX3060RM	3300	300	3	400	50	4.8	2860

1.4 Application

Comfort ventilation

EXHAUSTO CX3000 is used for comfort ventilation purposes. The CX3000 unit is designed for ceiling mounting and must be used as such.

Operating temperature range for the unit – see section "technical data".

Prohibited uses

The CX3000 unit is not to be used to transport solid particles or in areas where there is a risk of explosive gases.

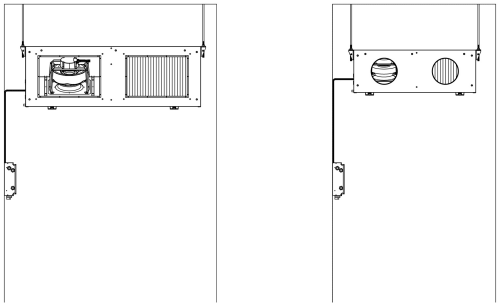
1.5 Location requirements

Positioning

The CX3000 unit is designed for indoor fitting. The unit may be positioned with the side opposite the connection box up against a rear wall.

Positioning of the connection box

If required, the connection box can be mounted externally and connected with the supplied 2-meter long cable.

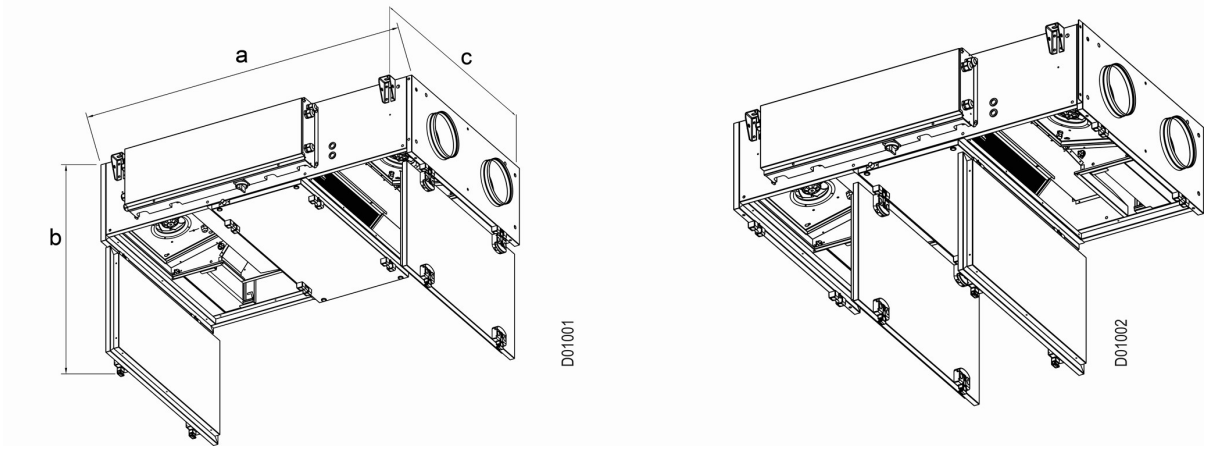


1.5.1 Space requirements

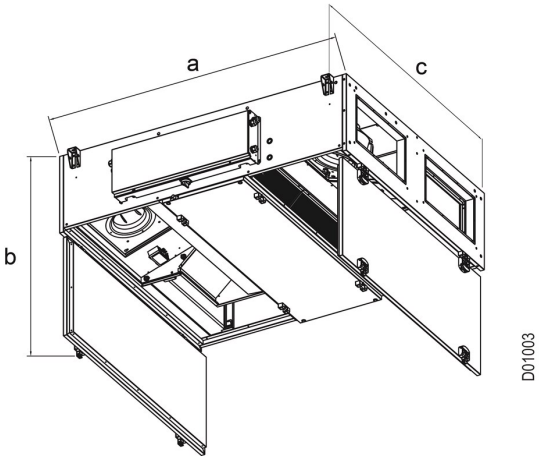
CX3000 with hinged doors (standard)

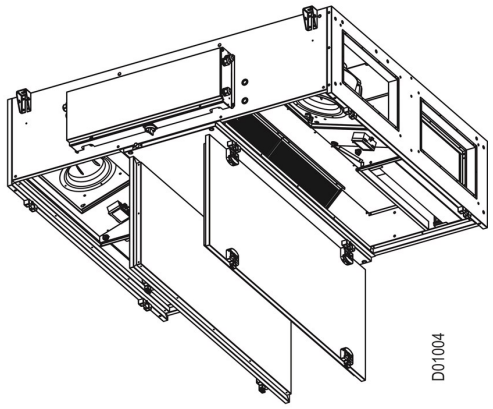
The cabinet has three hinged doors. The drawing below indicates how much space is needed for opening the doors and servicing the unit, i.e. changing filters, cleaning, servicing, etc.

CX3010/CX3020

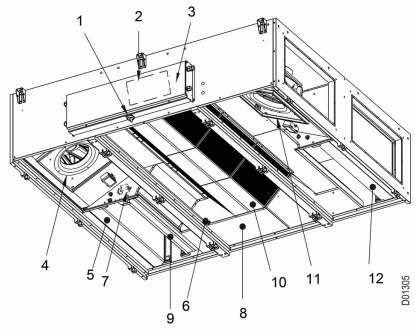


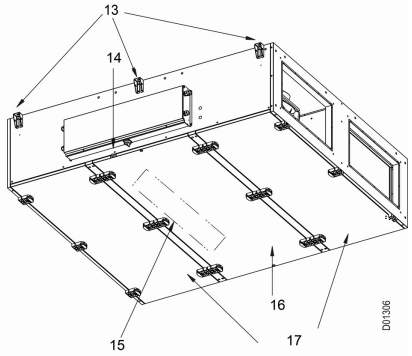
CX3030/CX3040/CX3050





CX3060





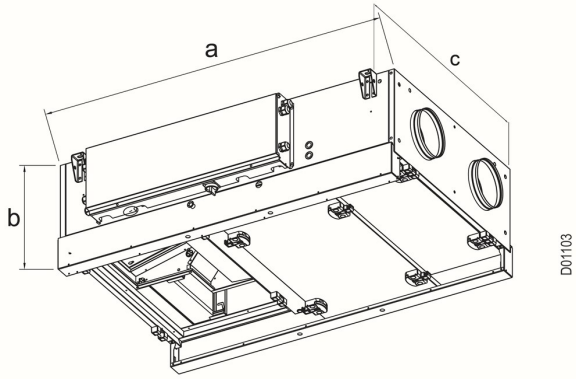
Model	a (mm)	b (mm)	c (mm)	d (mm)
CX3010	1580	940	1010	-
CX3020	1720	1000	1260	-
CX3030	1800	1160	1610	-
CX3040	2000	1300	1760	-
CX3050	2100	1365	1760	-
CX3060	2250	1275	2080	1450

NB: For all units in CX3000 Range, dimensions are identical for both left and right units.

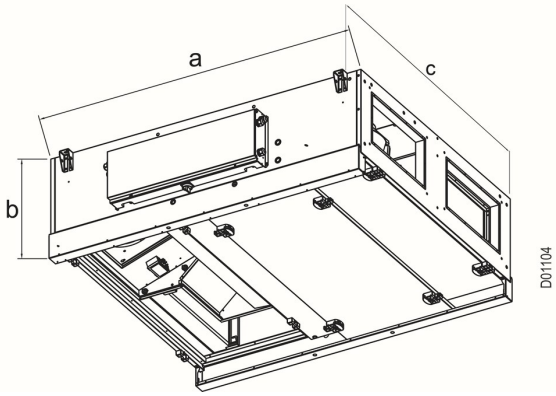
CX3000 with sliding rails (accessory)

The cabinet has 2/3 doors which can be individually released and slide sideways allow filter change and cleaning.

CX3010/CX3020

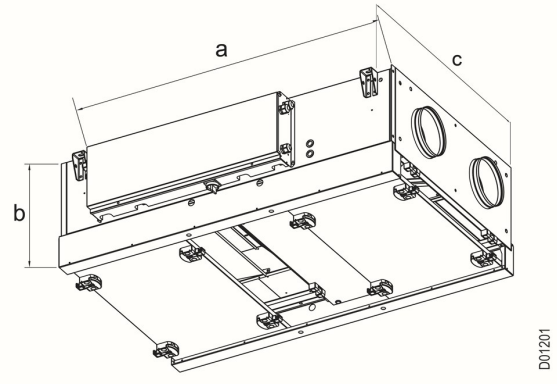


CX3030/CX3040/CX3050/CX3060

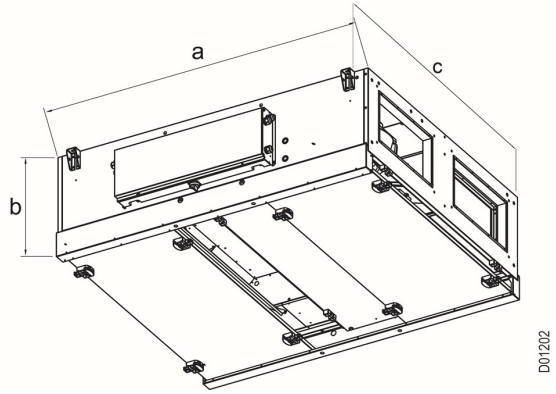


EXHAUSTO

CX3010/CX3020



CX3030/CX3040/CX3050/CX3060



Model	a (mm)	b (mm)	c (mm)
CX3010	1580	475	1010
CX3020	1720	505	1260
CX3030	1800	585	1610
CX3040	2000	670	1760
CX3050	2100	685	1760
CX3060	2250	685	2080

NB: For all units in CX3000 Range, dimensions are identical for both left and right units.

See also

- Section "Principal dimensions of CX3000" for additional measurements.
- Section "Maintenance" for information on opening the doors.

1.5.2 Ceiling requirements

When fitting the unit to a ceiling, the ceiling must be:

- flat
- resistant to vibration
- horizontal or sloping towards the condensation outlet
- designed to bear the weight of the unit

1.5.3 Requirements for duct system

Silencers

The duct system must be fitted with silencers specified by the Project Manager, which meet the requirements of the operating area.

Insulation

⚠ **The duct system must be insulated to prevent**

- **condensation**
- **sound leakage**
- **heating/cooling losses**

Prerequisites

Adequate insulation of the duct system in the operating area is a prerequisite for achieving the calculated sound data during operation.

Condensation

Condensation in the ducts may occur when the exhaust air has high humidity. EXHAUSTO recommends a condensation outlet is also fitted at the lowest point in the ducts.

No duct connection

If one or more of the inlets/outlets is not connected to a duct: Fit a protective net to the inlets/outlets with a maximum mesh width of 20 mm.

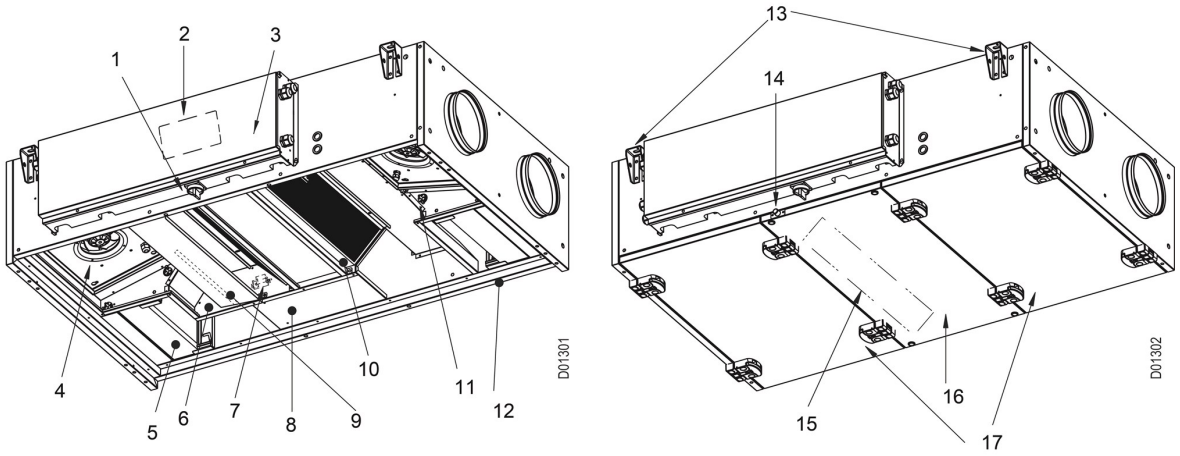
1.6 Description

1.6.1 Construction of the CX3000 unit

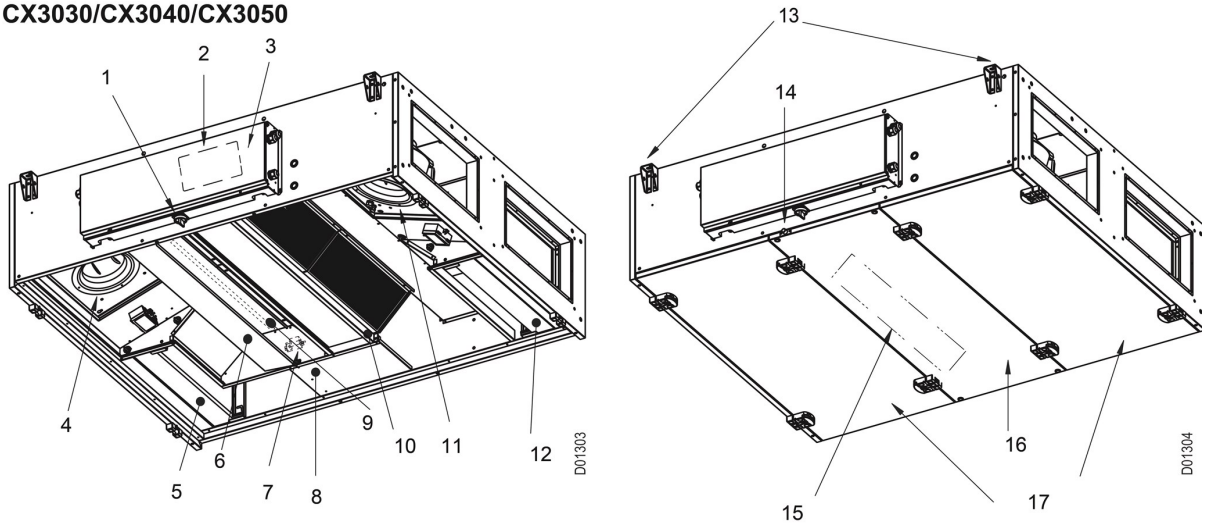
Construction of the CX3000 unit

The drawings below shows an overview of the CX3000 unit construction. First two drawings show a CX3000 unit with circular inlets / outlets. Last two drawings show a CX3000 unit with rectangular.

CX3010/CX3020

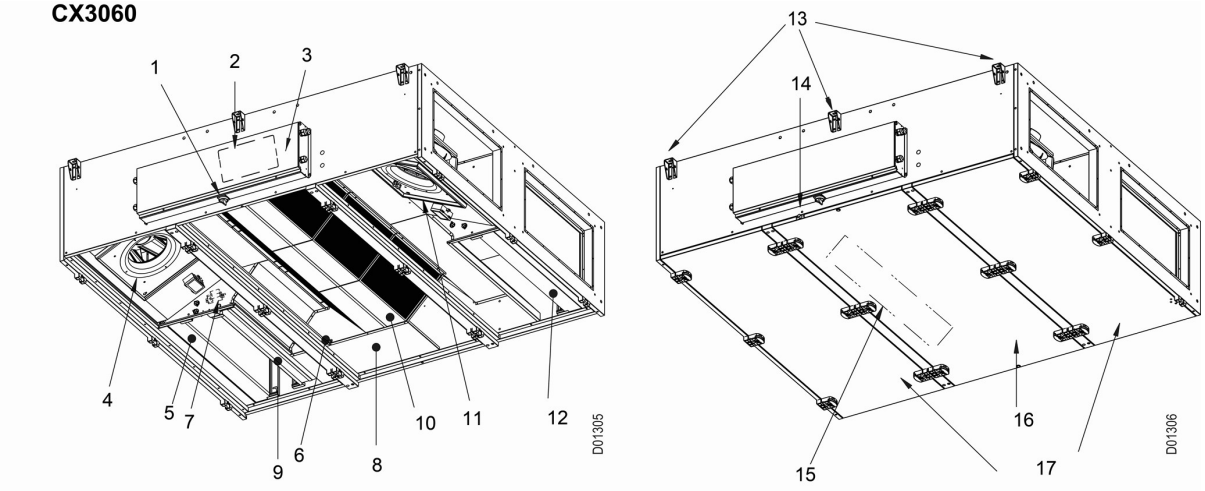


CX3030/CX3040/CX3050



EXHAUSTO

CX3060



Pos.	Part	Function
1	Isolation Switch	Connects/disconnects current.
2	Excon Control	Control system.
3	Connection box	Connection of accessories and power supply.
4	Exhaust Air Fan	Removes the stale air.
5	Supply Air Filter	Filters the supply air.
6	Additional Condensation Tray	"Collects condensed water and drains it from the counterflow heat exchanger to the condensation tray."
7	Bypass Motor	Opens/closes bypass damper.
8	Bypass Duct	Directs air around the counterflow heat exchanger.
9	Bypass Damper	Opens/closes bypass duct and heat exchanger.
10	Counterflow Heat Exchanger	Enables heat exchange between stale and fresh air.
11	Supply Air Fan	Blows fresh air into the room.
12	Exhaust Air Filter	Filters the exhaust air.
13	Suspention Clamps	Clamps for fitting the unit to the ceiling (2 or 3 at each side depending on unit size).
14	Condensation Outlet Pipe	Transfers condensed water from the condensation tray. External condensation outlet is connected to it via siphon.
15	Condensation Tray	Collects condensed water and drains it from the counterflow heat exchanger to the condensation outlet.
16	Middle Panel/Door	Counterflow heat exchanger cover for inspection and service.
17	Door	Sliding doors/hinged doors for inspection and service (Hinged doors can open left or right side, depending on user's choice).

1.6.2 Parts of the CX3000 unit

Cabinet

The inside and outside of the cabinet is made of galvanized steel. The cabinet is insulated with 50 mm mineral wool.

Fans

The unit contains two centrifugal fans with backward curved blades for exhaust air and supply air.

Counterflow heat exchanger

The unit's counterflow heat exchangers are made of aluminium and are highly efficient. The counterflow heat exchangers can be taken out and cleaned.

Filters

The unit includes integral panel filters for both exhaust air and supply air.

Condensation outlet

The condensation outlet is located on the CX3000 unit door (see previous drawing in this section). The condensation tray is positioned internally in the door.

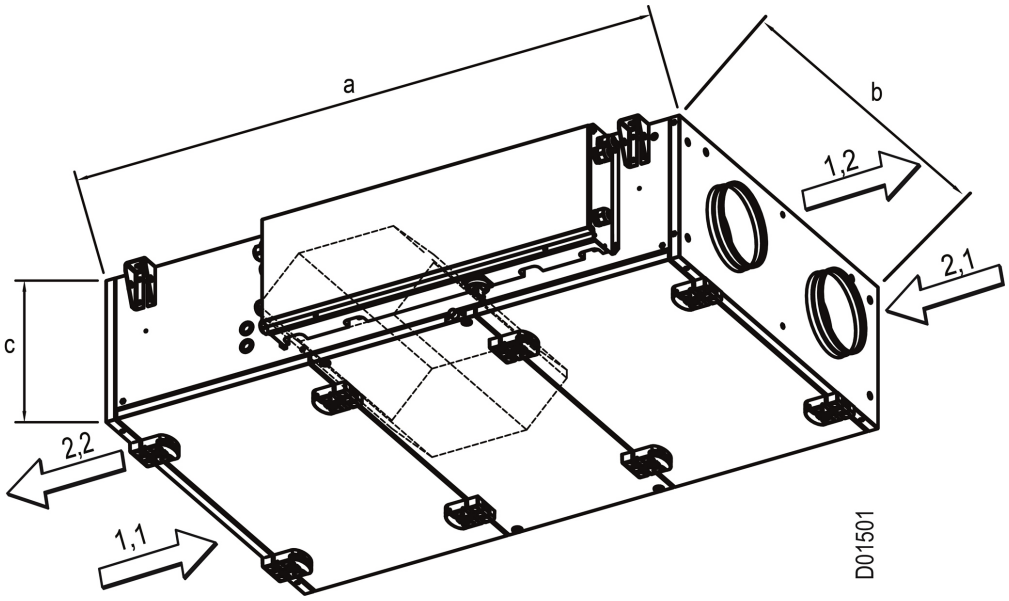
Bypass damper

The unit has an integral variably adjustable bypass, allowing for precise control of the supply air temperature.

1.7 Principal dimensions

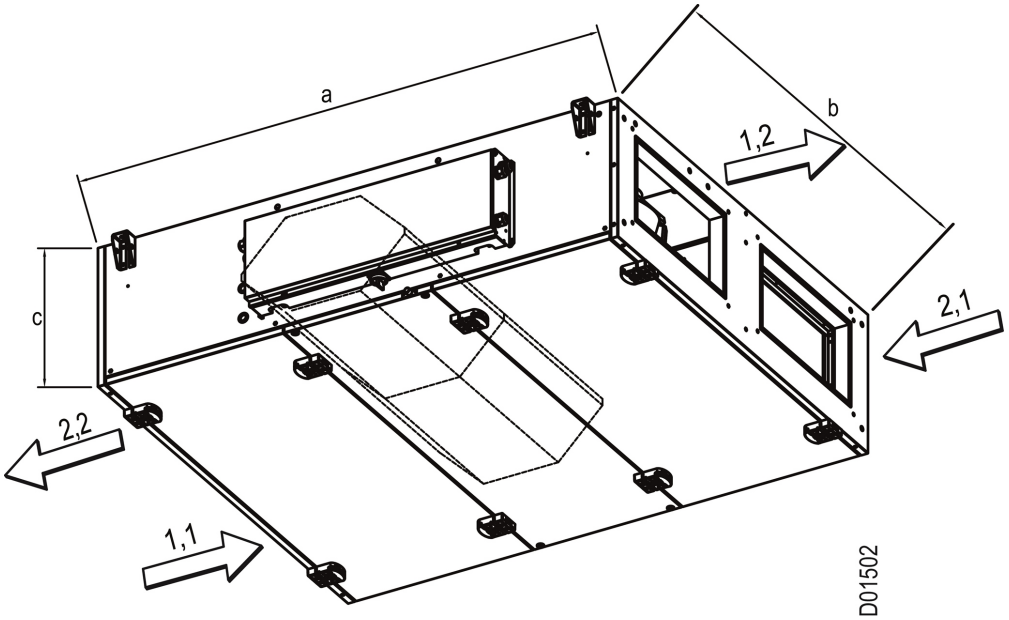
1.7.1 CX3000, left units

CX3010L/CX3020L

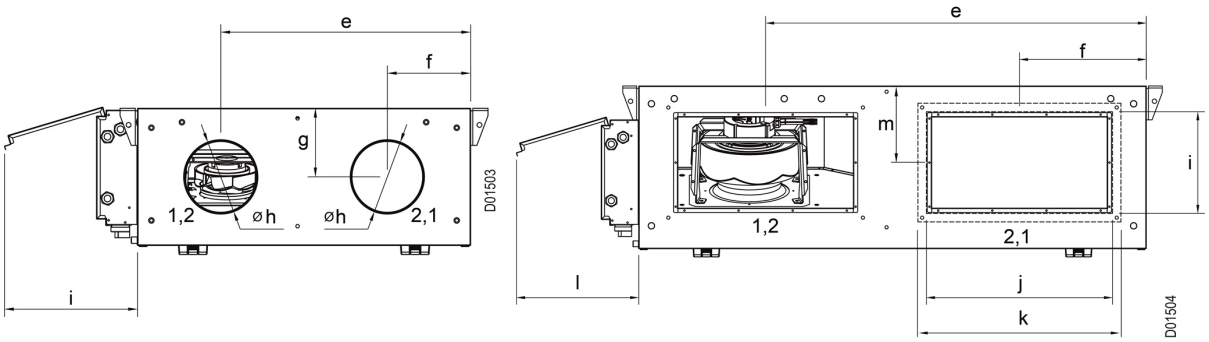


Model	a (mm)	b (mm)	c (mm)
CX3010L	1580	900	370
CX3020L	1600	1150	400

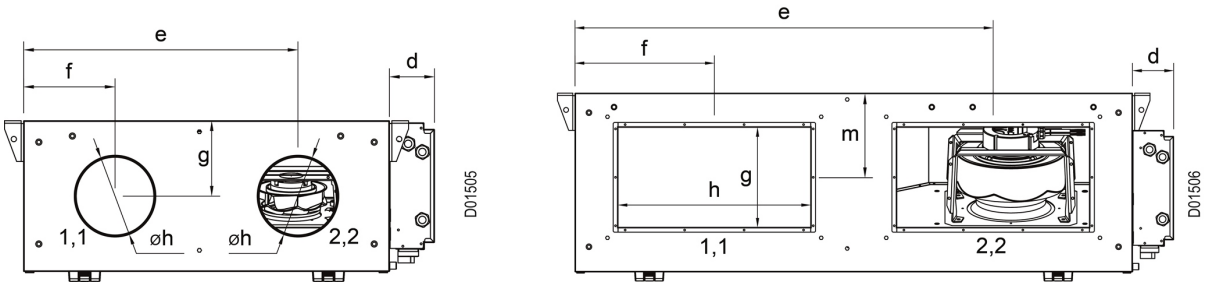
CX3030L/CX3040L/ CX3050L/CX3060L



Model	a (mm)	b (mm)	c (mm)
CX3030L	1800	1500	480
CX3040L	2000	1650	565
CX3050L	2100	1650	580
CX3060L	2250	1970	580

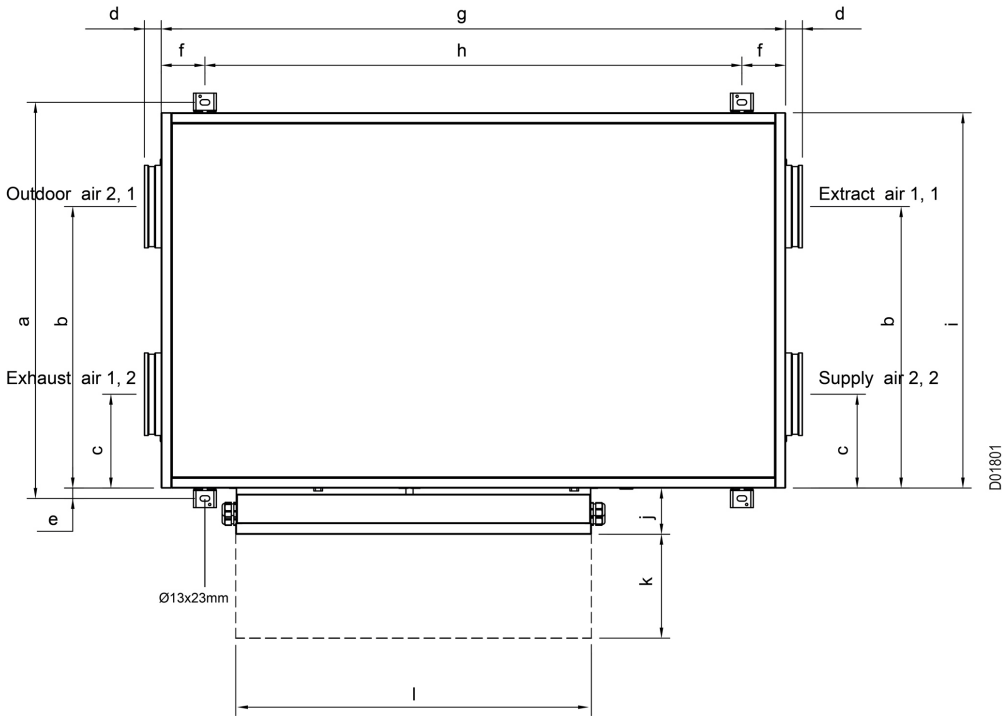


NB: In the above figure, dashed lines indicate duct connection dimensions.



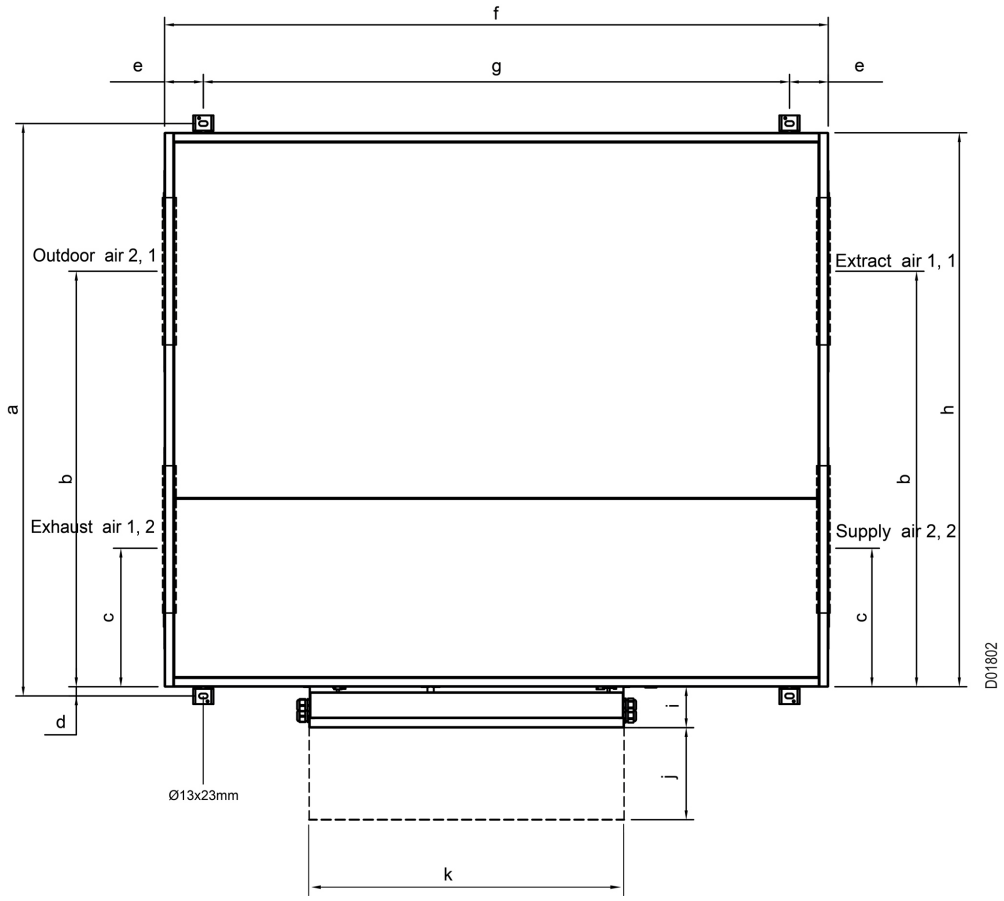
Model	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)	l (mm)	m (mm)
CX3010L	110	675	225	185	200	370	-	-	-	-
CX3020L	110	863	288	200	250	370	-	-	-	-
CX3030L	110	1125	375	267	517	300	550	600	370	226
CX3040L	110	1238	413	367	567	400	600	650	370	283
CX3050L	110	1238	413	367	567	400	600	650	370	290
CX3060L	110	1478	493	367	717	400	750	800	370	290

Top view: CX3010L/ CX3020L



Model	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)	l (mm)
CX3010	950	675	225	40	25	105	1500	1290	900	110	260	852
CX3020	1200	863	288	60	25	105	1600	1390	1150	110	260	852

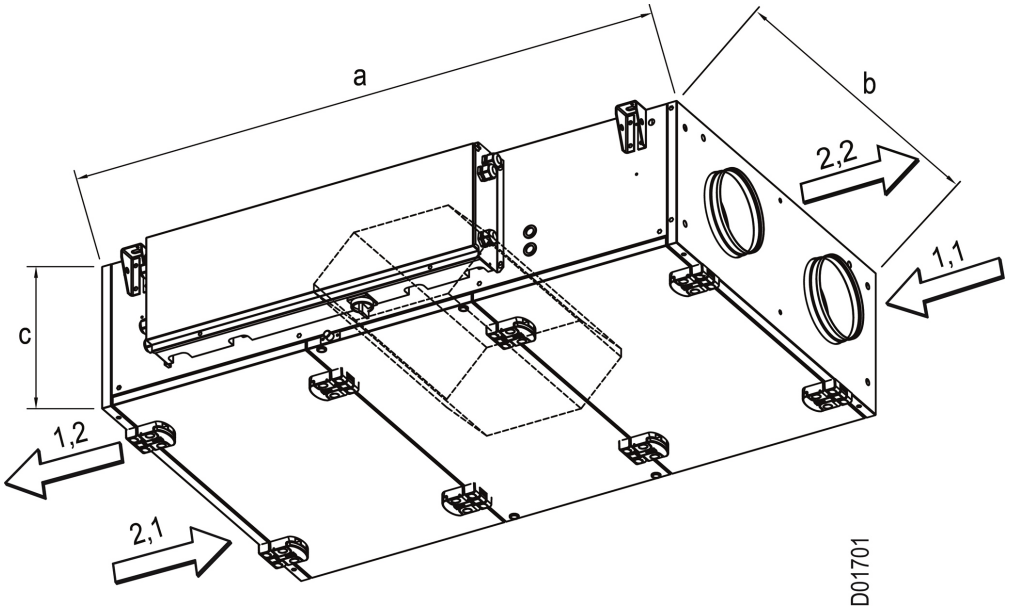
Top view: CX3030L/ CX3040L/CX3050L/ CX3060L



Model	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)
CX3030	1550	1125	375	25	105	1800	1590	1500	110	260	852
CX3040	1700	1238	413	25	105	2000	1790	1650	110	260	927
CX3050	1700	1238	413	25	105	2100	1890	1650	110	260	927
CX3060	2020	1478	493	25	105	2250	2040	1970	110	260	1002

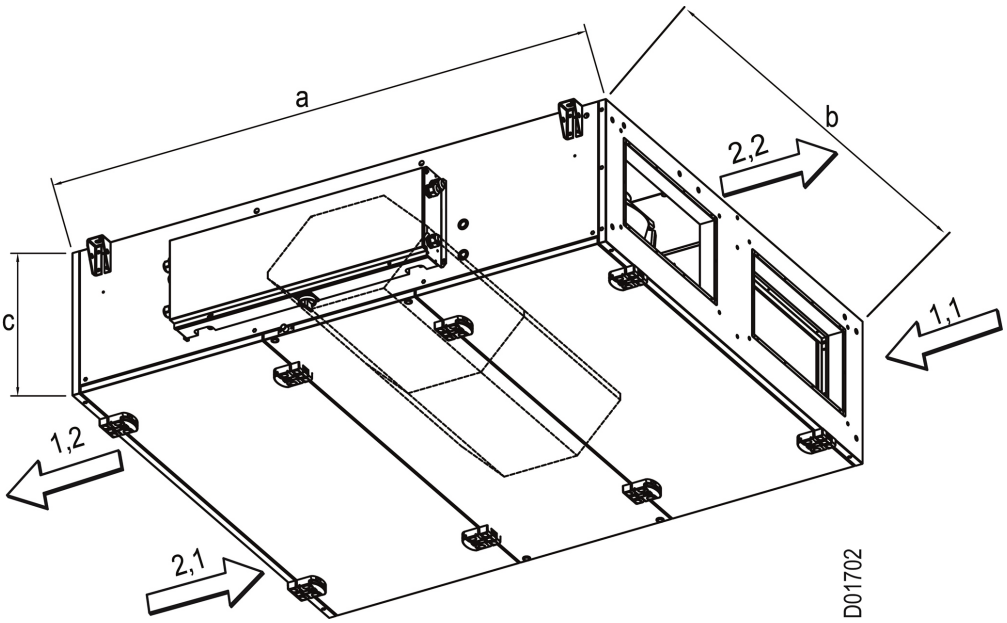
1.7.2 CX3000, right units

CX3010R/CX3020R

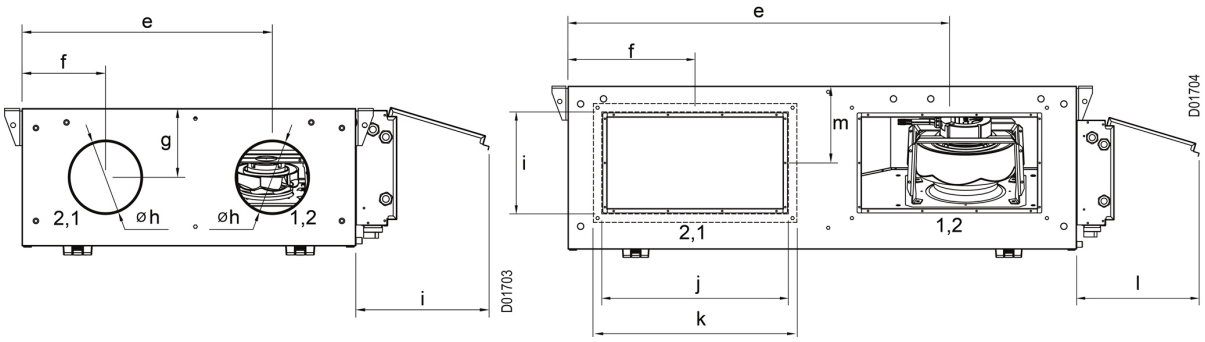


Model	a (mm)	b (mm)	c (mm)
CX3010R	1580	900	370
CX3020R	1600	1150	400

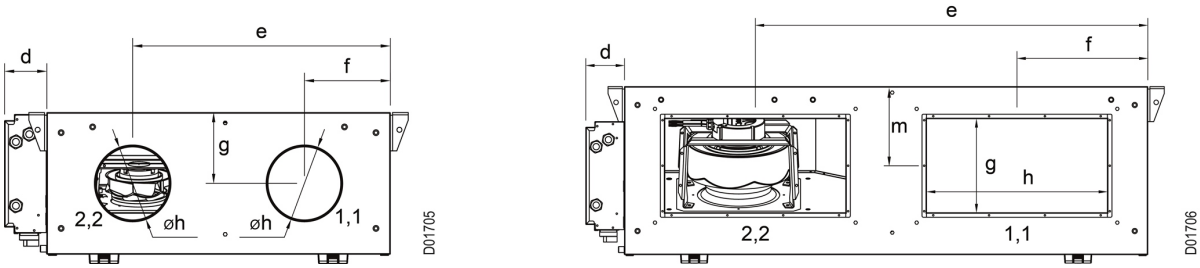
CX3030R/CX3040R/
CX3050R/CX3060R



Model	a (mm)	b (mm)	c (mm)
CX3030R	1800	1500	480
CX3040R	2000	1650	565
CX3050R	2100	1650	580
CX3060R	2250	1970	580

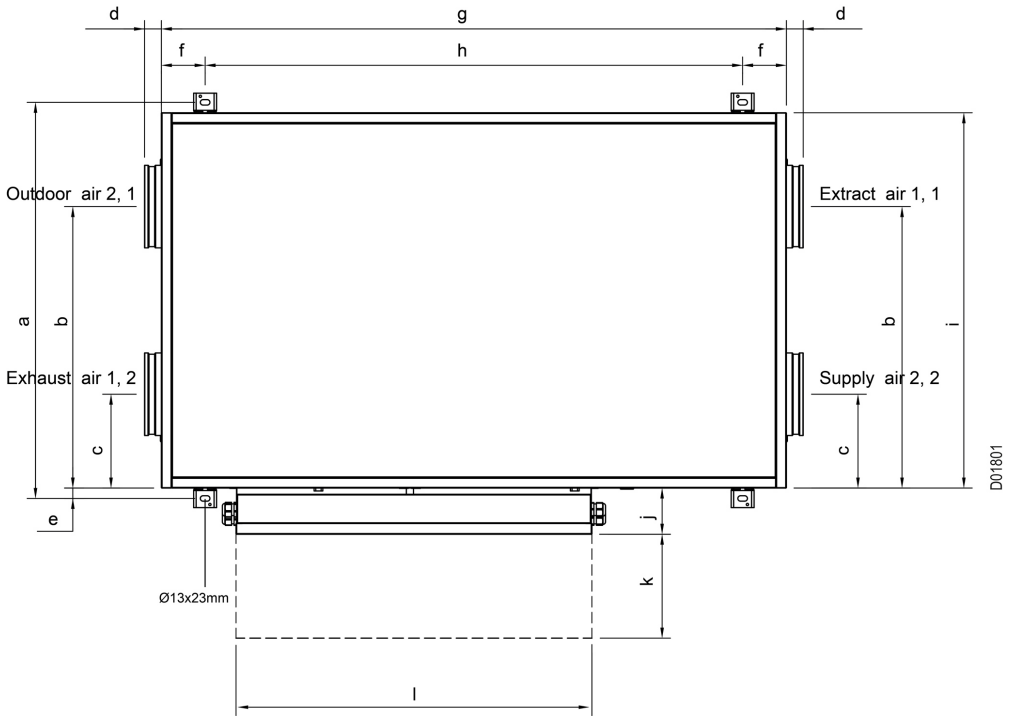


NB: In the above figure, dashed lines indicate duct connection dimensions.



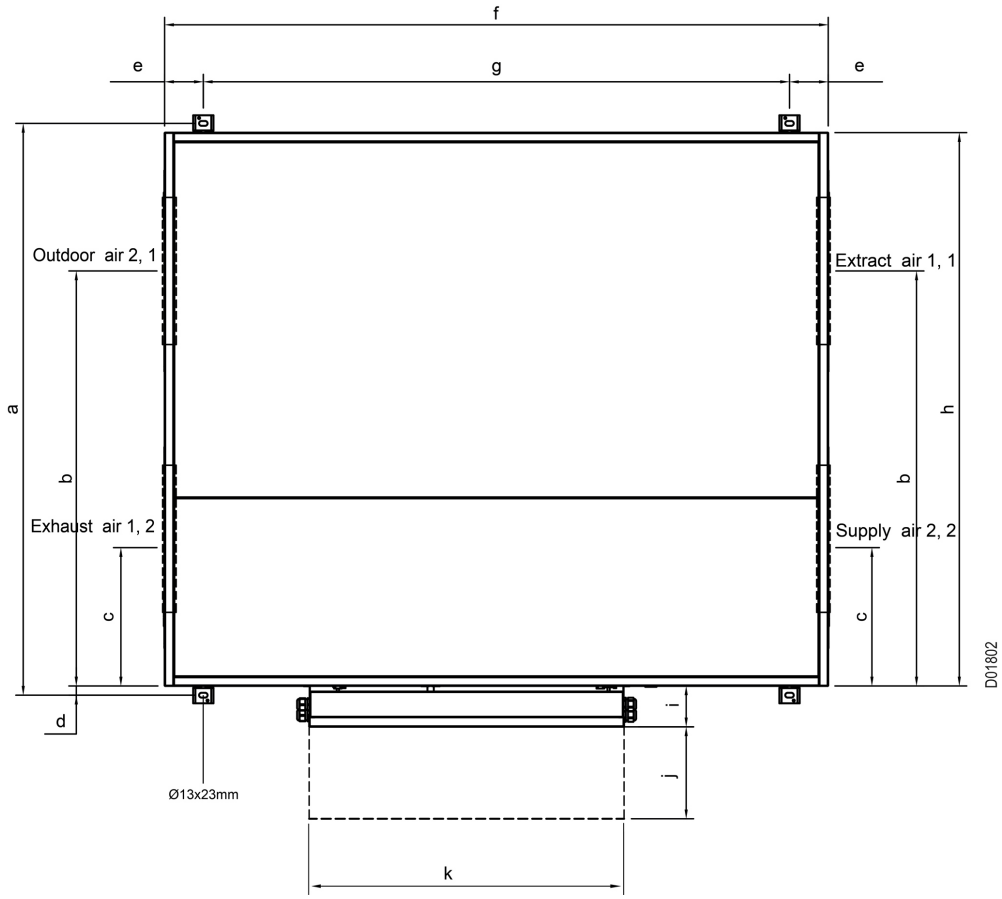
Model	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)	l (mm)	m (mm)
CX3010R	110	675	225	185	200	370	-	-	-	-
CX3020R	110	863	288	200	250	370	-	-	-	-
CX3030R	110	1125	375	267	517	300	550	600	370	226
CX3040R	110	1238	413	367	567	400	600	650	370	283
CX3050R	110	1238	413	367	567	400	600	650	370	290
CX3060R	110	1478	493	367	717	400	750	800	370	290

Top view: CX3010R/ CX3020R



Model	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)	l (mm)
CX3010R	950	675	225	40	25	105	1500	1290	900	110	260	852
CX3020R	1200	863	288	60	25	105	1600	1390	1150	110	260	852

Top view: CX3030R/ CX3040R/CX3050R/ CX3060R



Model	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)	h (mm)	i (mm)	j (mm)	k (mm)
CX3030R	1550	1125	375	25	105	1800	1590	1500	110	260	852
CX3040R	1700	1238	413	25	105	2000	1790	1650	110	260	927
CX3050R	1700	1238	413	25	105	2100	1890	1650	110	260	927
CX3060R	2020	1478	493	25	105	2250	2040	1970	110	260	1002

2. Handling

2.1 Unpacking

Supplied components

The following components are supplied:

- CX3000 unit
- HMI Touch Panel
- HMI Cable (10m)
- Rubber Suspension Chock (4 items for CX3010/CX3020/CX3030, 6 items for CX3040/CX3050/CX3060)

Any included accessories

Can be seen on the order form.

Packaging

The unit is delivered firmly fixed to a disposable pallet and packaged in clear plastic. Disposal of packaging materials must comply with local waste regulations.

NB unpacking:

Once the plastic has been removed, the CX unit must be protected against dirt and dust:

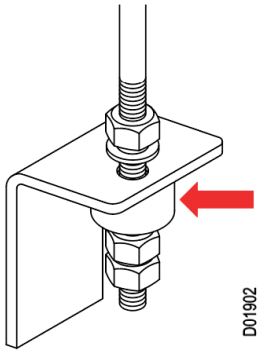
- Check the air handling unit for damage – do not install damaged air handling units.
- The spigots should be covered until the spigots are connected to the ventilation ducts.
- Whenever possible, keep the unit closed during fitting.

.

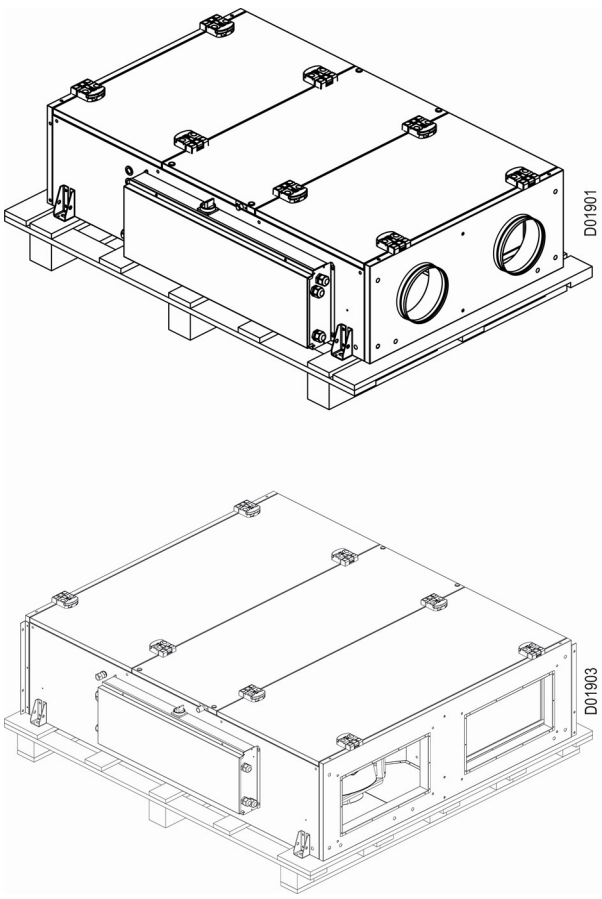
Remove transport fittings

Before fitting the unit:

- Screw off the screws on the suspension clamps.
- Carefully assemble the unit to the ceiling through suspension clamps as the unit doors face downwards.



NB: Rubber suspension chocks provided inside the unit´s package need to be used below the suspension clamps as shown in the figure above. Same action needs to be taken with the unit accessories which have suspension clamps.



The unit should be cleaned before it is used

Once the CX3000 unit is fitted, it must be checked and thoroughly cleaned. All dust, debris and metal shavings must be vacuumed up.

2.1.1 Weight

CX3000 units need to be handled carefully due to heavy-weighted structure. CX3000 unit weights are provided in the table given in “Section 5.1”.

2.2 Transport

Transport

Transport the CX3000 unit on the disposable pallet. Do not lift it within the inlets/outlets or connection box.

2.2.1 Passage through openings

CX3000 unit dimensions

The table below shows the unit's dimensions, and is intended to indicate how large an opening has to be for the unit to pass through:

Model	Length (mm)	Width (mm)	Height (mm)
CX3010	1580	1010	370
CX3020	1720	1260	400
CX3030	1800	1610	480
CX3040	2000	1760	565
CX3050	2100	1760	580
CX3060	2250	2080	580

NB

+100 mm for fitting through passages (tolerance).
For all units in CX3000 Range, dimensions are identical for both left and right units.

2.2.2 Internal transport with reduced weight

Weight reduction

The unit's weight can be reduced during transport and mounting by removing fan units and counter flow heat exchangers. Table given in “Section 5.1” can be checked for how much weight may be reduced by removing various parts.

Dismounting

See section 4, "Maintenance", for instructions for dismounting doors, fans and counter flow heat exchanger and for removal of filters.

3. Mechanical assembly

3.1 Positioning of unit

3.1.1 Mounting on ceiling

Dimensioning

Ceiling mountings must be dimensioned from the unit's weight. Mounting must be carried out in accordance with the Project Manager's instructions.

Suspension

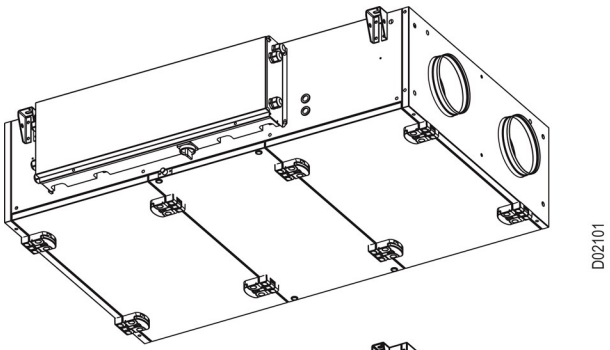
The unit is designed for suspension from a ceiling with the doors facing downwards - as described in the following. The unit must not be used lying on the ground.

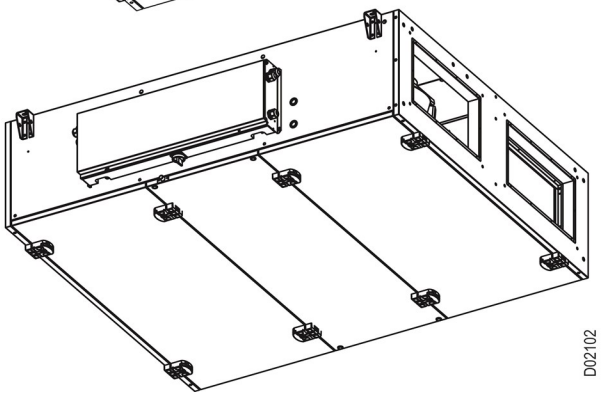
It is important that the CX3000 unit is suspended horizontally or sloping towards the condensation drain/outlet, which collects condensate and drains it away.

NB

Suspention clamps are mounted on units before shipment.

Assembly drawing





Installation

Step	Action
1	Fit the unit in accordance with instructions from the Project Manager.
2	Check that the unit hangs horizontally or slopes towards the condensation drain.
3	Clean and vacuum clean the CX3000 unit to remove metal shavings, etc.

3.2 Condensation drain

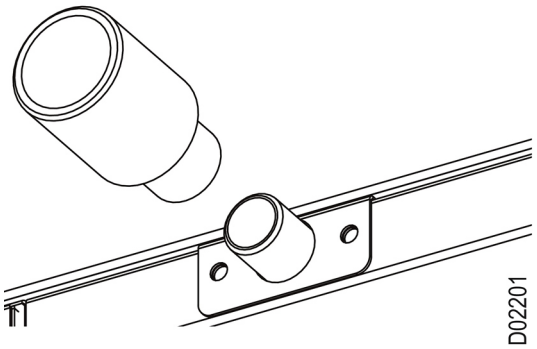
Risk of frost

Drain the condensation outlet into a floor gully or similar drainage system. The condensation outlet must be fitted with a water trap. See below.

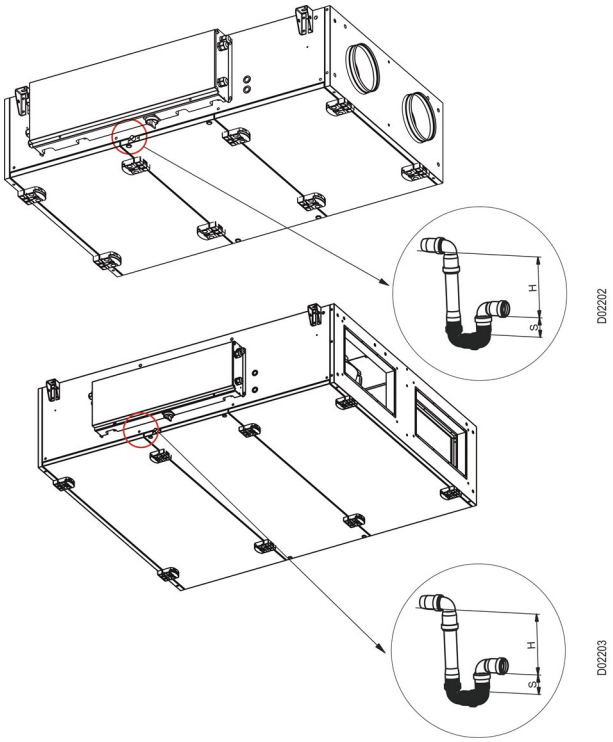
<u>Where there is a risk of frost:</u> Insulate the condensation outlet and protect it against frost - if necessary, using a heating cable.

Water trap

The following drawing shows an example of how the drain from the condensation could be setup.



NB: The condensation drainage siphon adapter provided inside the unit package needs to be connected to a drainage outlet before assembling the siphon. This is also required for the "changeover coil box" accessory.



CX Unit Model	S (mm)	H (mm)
CX3010	20	33
CX3020	25	41
CX3030	25	42
CX3040	29	48
CX3050	34	57
CX3060	35	58

NB

The condensation outlet must be dismounted before the middle panel/door can be opened. For this reason, the pipe layout must allow the drain tube to be disconnected.
Dimensions indicate the minimum required values.

4. Maintenance, hygiene and servicing

4.1 Operating readings via the HMI panel

HMI Panel

Refer to the "EXcon Basic Instructions for the CX3000 Series" for instructions on accessing "Menu 2 Operating Readings" via the technician menu (access code 1111) to check the unit's operating status.

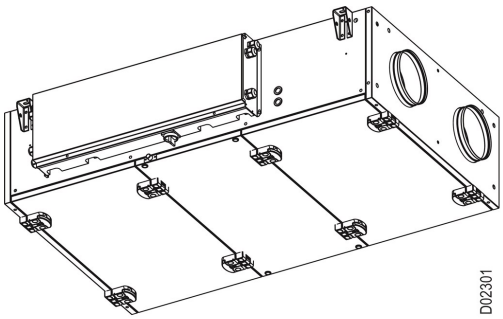
4.2 Maintenance

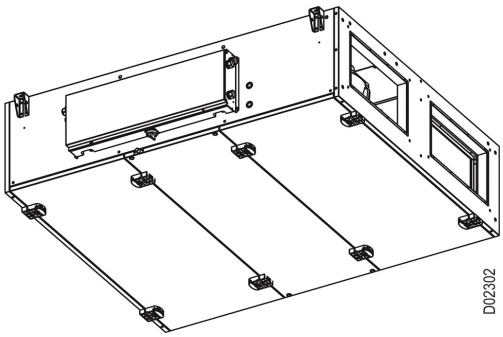
The CX3000 unit doors must be opened to allow servicing and cleaning.

⚠ **Disconnect the power at the isolation switch before opening the doors.**

4.2.1 CX3010-CX3060 with hinged doors

How to open CX3000 with hinged doors (standard)





CX3010-CX3050 units

If	Then
To change filters To clean the motors To make inspections & tests	• Open the two door handles (left or right). • Open the door. • Carry out servicing and close the door. • Close door handles. • Repeat with the other door.
To remove the heat exchanger	• Open the four door handles on the middle panel. • Open doors to outside. • Remove the siphon. • Unscrew the bolts on middle panel corners. • Remove the middle panel away from the unit. • Carry out the servicing.

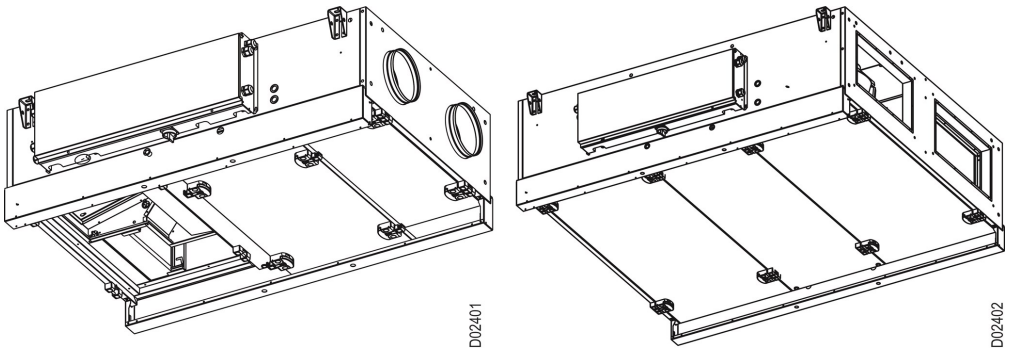
CX3060 unit

If	Then
To change filters To clean the motors To make inspections & tests	• Open the two door handles (left or right). • Open the door. • Carry out servicing and close the door. • Close door handles. • Repeat with the other outer side door.
To remove the heat exchanger	• Remove the siphon. • Unscrew the two bolts on middle door edges. • Open the two middle door handles (left or right). • Open the middle door. • Carry out the servicing.

Space requirements See also section "Location requirements" for information on how much space is needed to open the doors.

4.2.2 CX3000 with sliding rails

How to open CX 3000 series, with sliding rails (accessories)



CX3010-CX3050 units

If	Then
To change filters To clean the motors To make inspections & tests	• First dismount one door. • Place it on the sliding rail and slide it under the other door. • Carry out servicing and remount the door. • Repeat with the other door.
To remove the heat exchanger	• Remove the siphon. • Remove the condensation drainage coupling. • Unscrew the bolts on middle panel corners. • Place the middle panel on sliding rails while two doors attached. • Open the door handles connecting doors to the unit. • Place doors on sliding rails. • Open door handles connecting doors to the middle panel. • Place the middle panel on one door. • Carry out the servicing.

CX3060 unit

If	Then
To change filters To clean the motors To make inspections & tests	• First dismount one door. • Place it on the sliding rail and slide it under the other door. • Carry out servicing and remount the door. • Repeat with the other door.
To remove the heat exchanger	• Remove the siphon. • Remove the condensation drainage coupling. • Unscrew the two bolts on middle door edges. • Open the middle door handles. • Place the middle door on sliding rails. • Slide the middle door under one door. • Carry out the servicing.

4.2.3 Overview of maintenance intervals

The following chart details the recommended maintenance intervals, based on normal operation. EXHAUSTO recommends maintenance is adjusted to suit the actual operating requirements.

Component	Procedure	Twice a year	Once a year
Filters*	**Change filters when HMI displays filter alarm.** We recommend that both filters are changed at the same time. **NB:** The control system may give an 'early warning' when a filter is becoming soiled, so that a new filter can be obtained or a service fitter called Filters should be changed at least:	X	
Filter guide	Check that all the seals are tight		X
Seals and sealing strips	Check that all the seals are tight		X
Fan	Check the fan units. Remove the fan unit. See section "Internal transport with reduced weight" Cleaning. See next section		X
Counter flow heat exchanger	Cleaning. See next section		X
Safety features	Checks on fire thermostats/smoke gas detectors		X
Closing damper	Function inspection		X
Condensation outlet	Check that the outlet works by pouring water in the condensation tray		X

***Filters**

Only use original filters

- The provided filter data and pressure loss graphs (section 5.1) are based on the use of original filters.
- Use of non-original filters may cause leakage in CX3000 units and impair filter function.
- EXHAUSTO recommends that you register the filter replacement date to ensure filters are replaced at the correct intervals.

4.3 Hygiene

VDI6022 air hygiene standard

CX3000 RANGE has been designed to comply with air hygiene standard VDI6022. This means that:

- bacterial growth and dirt accumulation is minimal,
- conditions for cleaning are optimal.

ePM_1 >50% Filter

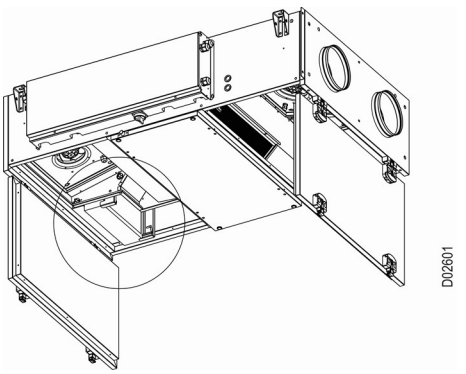
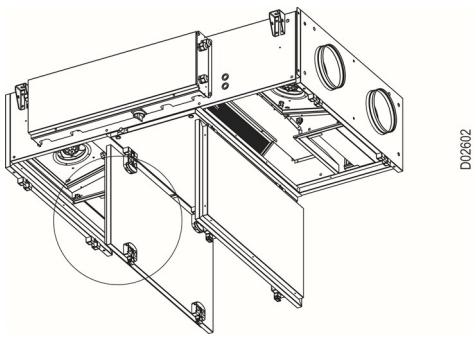
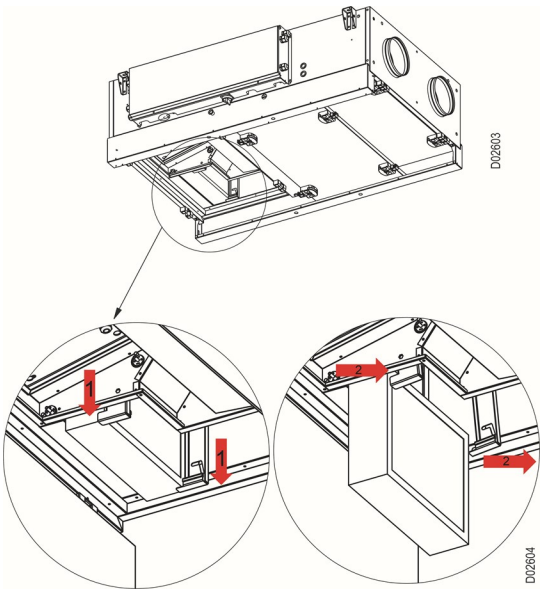
According to VDI6022 the filter on the outdoor air side must be an ePM_1 >50% filter.

4.4 Servicing and cleaning

4.4.1 Filter change

⚠ **Disconnect power at the isolation switch before opening the door.**

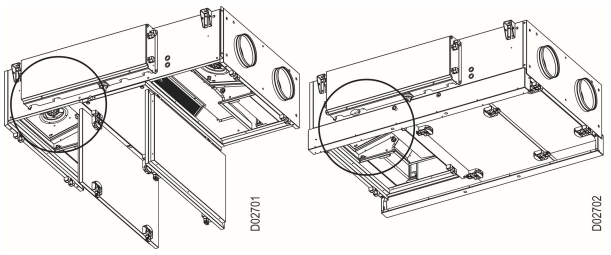
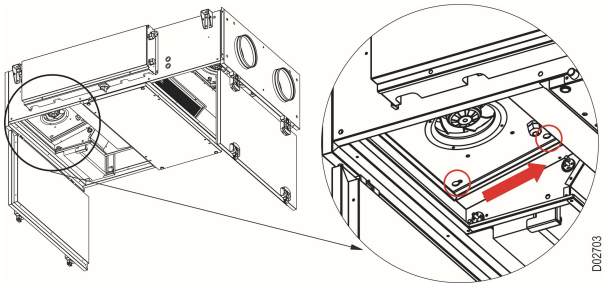
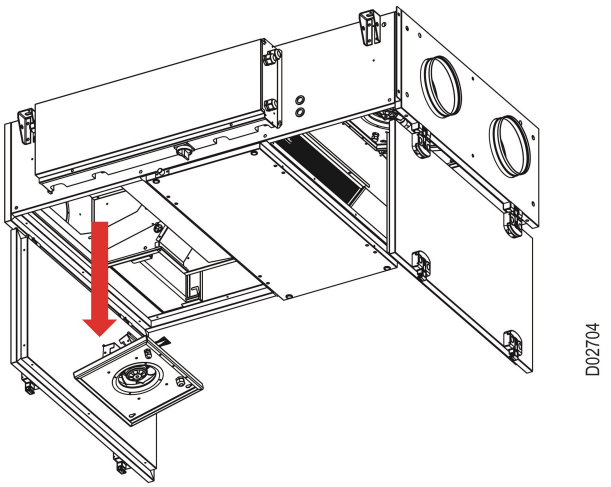
How to change filters

Step	Action	Figure
1	Disconnect power to the unit.	
2	Open the unit doors. **NB:** In Section 4.2, detailed instructions on how to open the unit doors with hinged doors (to outside and inside) and with sliding rails can be found.	 
3	Pull filter clamps in downward (Arrow 1) direction. Then, push filter clamps in sideway (Arrow 2) direction. Filter is now free and can be removed in downwards (Arrow 1) direction.	
4	Put the filter in a plastic bag and seal it tightly. Arrange for disposal according to local waste disposal regulations.	

NB: For all CX3000 units, filter service instructions given in the table are identical.

4.4.2 Servicing and cleaning the motor

How to service the motor

Step	Action	Figure
1	Disconnect power to the unit.	
2	Open the unit doors.	
3	Detach sockets and the pressure hose from the pressure transmitter.	
4	Loosen the four screws on the corners as shown with circles in the drawing. Then, slide the fan in the arrow's direction to remove the fan.	 
5	The motor section can now be removed.	
6	Pull the motor downwards.	
7	Clean the impeller: - by vacuum cleaning. - by wiping with a cloth dipped in soap and water and well wrung out. **NB:** Clean all blades on the fan impeller carefully to avoid disrupting the balance.	
8	After cleaning, check CX3000 unit whether it operates without vibration.	

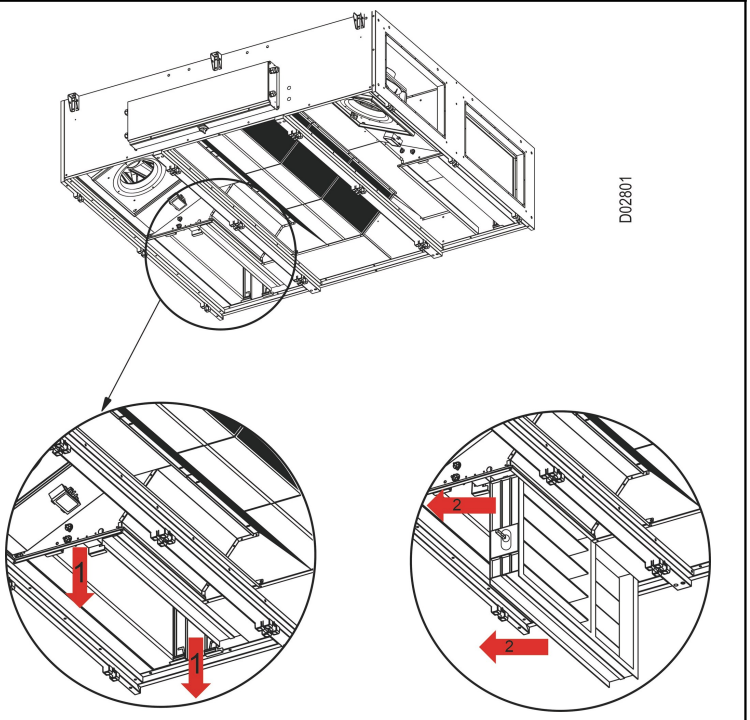
NB: For all CX3000 units, motor service instructions listed in the table are identical.

4.4.3 Removing and cleaning the bypass damper

Warnings

Disconnect power at the isolation switch before opening the doors.

How to service the bypass damper

Step	Action	Figure
1	Disconnect power to the unit.	
2	Open the unit doors.	
3	Detach the bypass damper motor socket.	
4	Pull damper clamps in downward (Arrow 1) direction. Then, push damper clamps in sideway (Arrow 2) direction. Damper is now free and can be removed in downwards (Arrow 1) direction.	
5	The bypass damper section can now be removed.	

NB: Instructions given in the table are not valid for CX3010/3020/3030 models. For all CX3040/CX3050/CX3060 units, bypass damper service instructions given in the table are identical.

4.4.4 Removing and cleaning the counterflow heat exchangers

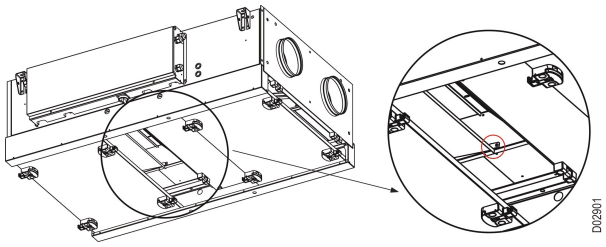
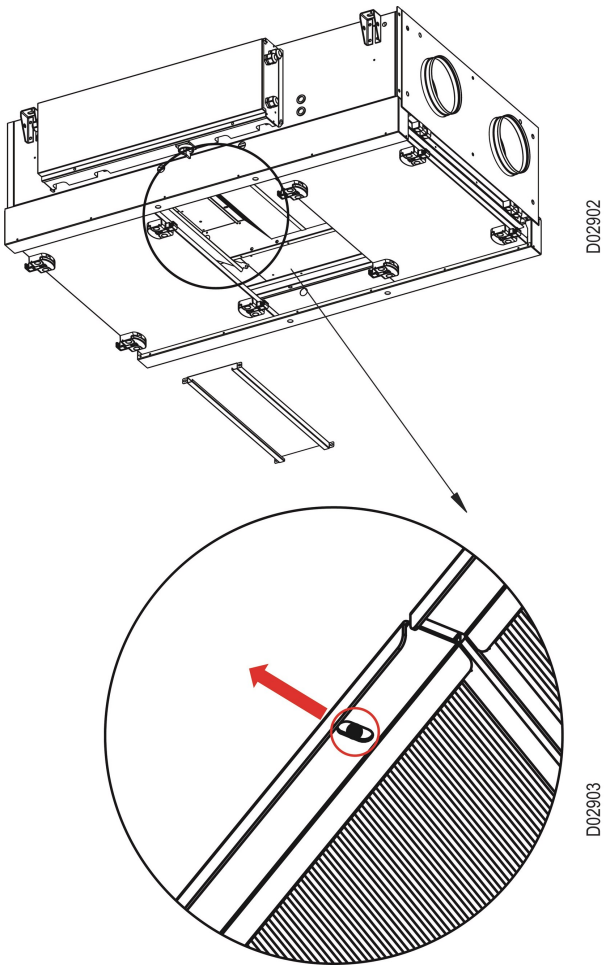
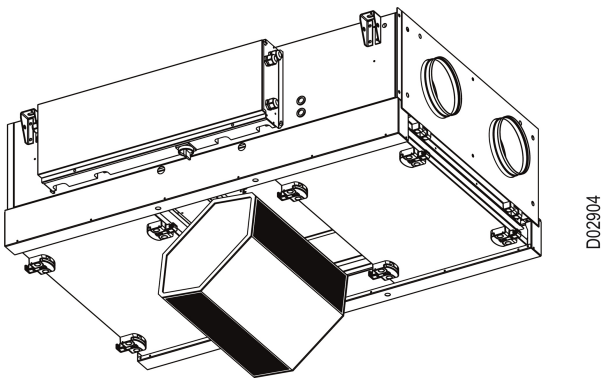
Warnings

Disconnect power at the isolation switch before opening the doors.

Take care, as the counterflow heat exchangers are heavy-weighted. Heat exchanger weights are provided in the table given in “Section 6.1”.

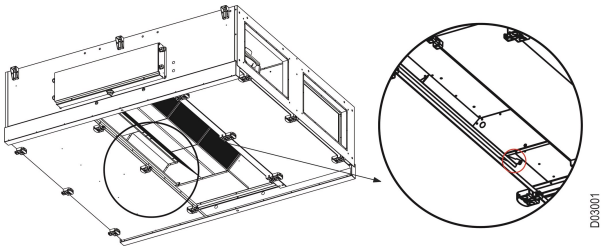
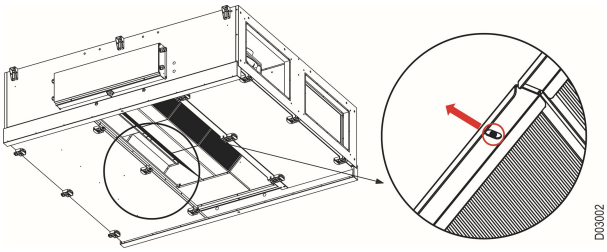
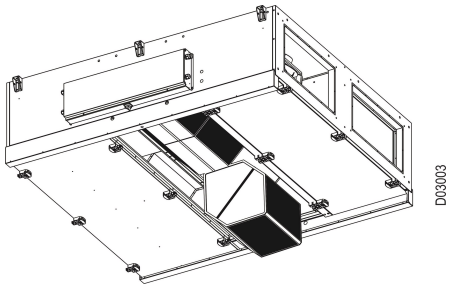
The counterflow heat exchanger fins can easily be damaged - avoid contact with the fins.

How to remove the counterflow heat exchangers, CX3010-CX3050

Step	Action	Figure
1	Disconnect power to the unit.	
2	Open the unit doors.	
3	Unscrew 2 screws which holds the additional condensation tray and move the tray downwards.	 D02901
4	Unscrew 4 screws which holds the additional sheet metal part and remove it.	 D02902 D02903
5	Loosen the rail screws shown with a circle and slide the rails sideways as shown with an arrow to remove the heat exchanger. **Remember to hold the heat exchanger from the bottom.**	
6	The heat exchanger is now free and can be removed. Remove the heat exchanger by rotating to fit it through the opening between doors as shown in the drawing.	 D02904

How to remove the counterflow heat exchangers, CX3060

The counterflow heat exchanger fins can easily be damaged - avoid contact with the fins.

Step	Action	Figure
1	Open the unit doors.	
2	Unscrew 2 screws which holds the additional condensation tray and move the tray downwards.	 D03001
3	Loosen the rail screws shown with a circle and slide the rails sideways as shown with an arrow to remove the heat exchanger. Remember to hold the heat exchanger from the bottom.	 D03002
4	The heat exchanger is now free and can be removed. Remove the heat exchanger by rotating to fit it through the opening between doors as shown in the drawing. Handle the heat exchanger one by one while servicing.	 D03003

Cleaning the counterflow heat exchangers

Step	Action
1	Clean the exchanger by flushing with warm water (a high-pressure cleaner can be used). Max. water temperature: 90 °C.
2	Check seal and replace if it is worn or deformed.
3	Be careful to avoid damages to heat exchanger fins.

5. Technical data

5.1 Weight, corrosion class, temperature ranges, etc

Weight

Model	Fan, 2 items	Counterflow Heat Exchanger, 1/2/3 items	Fan service doors, 2 items Middle door, 1 item	Total Unit Weight
CX3010RC / CX3010LC	4.0 kg x 2 = 8.0 kg	10 kg x 1 = 10 kg	10 kg x 2 = 20 kg 9 kg x 1 = 9 kg	125 kg
CX3010RM / CX3010LM	4.7 kg x 2 = 9.4 kg	10 kg x 1 = 10 kg	10 kg x 2 = 20 kg 9 kg x 1 = 9 kg	127 kg
CX3020RC / CX3020LC	5.5 kg x 2 = 11.0 kg	15 kg x 1 = 15 kg	13 kg x 2 = 26 kg 13 kg x 1 = 13 kg	164 kg
CX3020RM / CX3020LM	6.8 kg x 2 = 13.6 kg	15 kg x 1 = 15 kg	13 kg x 2 = 26 kg 13 kg x 1 = 13 kg	167 kg
CX3030RC / CX3030LC	9.9 kg x 2 = 19.8 kg	12.5 kg x 2 = 25 kg	18 kg x 2 = 36 kg 17 kg x 1 = 17 kg	230 kg
CX3030RM / CX3030LM	9.5 kg x 2 = 19.0 kg	12.5 kg x 2 = 25 kg	18 kg x 2 = 36 kg 17 kg x 1 = 17 kg	229 kg
CX3040RC / CX3040LC	11.6 kg x 2 = 23.2 kg	17.5 kg x 2 = 35 kg	22 kg x 2 = 44 kg 21 kg x 1 = 21 kg	286 kg
CX3040RM / CX3040LM	11.6 kg x 2 = 23.2 kg	17.5 kg x 2 = 35 kg	22 kg x 2 = 44 kg 21 kg x 1 = 21 kg	286 kg
CX3050RC / CX3050LC	11.8 kg x 2 = 23.6 kg	17.5 kg x 2 = 35 kg	24 kg x 2 = 48 kg 21 kg x 1 = 21 kg	320 kg
CX3050RM / CX3050LM	14.1 kg x 2 = 28.2 kg	17.5 kg x 2 = 35 kg	24 kg x 2 = 48 kg 21 kg x 1 = 21 kg	325 kg
CX3060RC / CX3060LC	11.8 kg x 2 = 23.6 kg	19 kg x 3 = 57 kg	25 kg x 2 = 50 kg 33 kg x 1 = 33 kg	370 kg
CX3060RM / CX3060LM	14.1 kg x 2 = 28.2 kg	19 kg x 3 = 57 kg	25 kg x 2 = 50 kg 33 kg x 1 = 33 kg	375 kg

Temperature ranges

Ambient temperature (operating)	-25ºC - +50ºC
Ambient temperature when not in operation (storage, transport)	-40ºC - +60ºC

The temperature ranges given are dependent on the type of installation, humidity, airflow, the balance between airflows, ducts and insulation and room temperature. If using pre-heating coils, the ambient temperature can be reduced.
At temperatures below -25˚C, use of a thermostatically controlled heater in automated control box is recommended.

HMI-panel

HMI Panel	
Ingress protection	IP20
Ambient temperature	-10ºC to +40ºC

At temperatures below 0˚C the display may react more slowly than usual.

Motor damper

Motor Damper	
Type	Modulating
Rotation time	150s
Ingress protection	IP54
Ambient temperature	-32ºC to +55ºC
Damper depth	60 mm

5.2 Compact filters

Filter data, CX3000 Range

Data	CX3010		CX3020	
Filter Class	ISO ePM_1 >50%	ISO ePM_{10} >50%	ISO ePM_1 >50%	ISO ePM_{10} >50%
Dimensions, h x w (mm)	268x345	268x345	298x470	298x470
Thickness (mm)	95	95	95	95
Filter Face Area (m2)	0.0925	0.0925	0.1401	0.1401
Initial Pressure Drop (Pa)	65	52	84	67
Recommended final pressure drop at normal volume flow rate (Pa)	164	151	184	166

Data	CX3030		CX3040	
Filter Class	ISO ePM_1 >50%	ISO ePM_{10} >50%	ISO ePM_1 >50%	ISO ePM_10 >50%
Dimensions, h x w (mm)	378x645	378x645	463x720	463x720
Thickness (mm)	95	95	95	95
Filter Face Area (m2)	0.2438	0.2438	0.3334	0.3334
Initial Pressure Drop (Pa)	71	57	76	60
Recommended final pressure drop at normal volume flow rate (Pa)	170	156	175	160

Data	CX3050		CX3060	
Filter Class	ISO ePM_1 >50%	ISO ePM_{10} >50%	ISO ePM_1 >50%	ISO ePM_{10} >50%
Dimensions, h x w (mm)	478x720	478x720	478x950	478x950
Thickness (mm)	95	95	95	95
Filter Face Area (m2)	0.3442	0.3442	0.4541	0.4541
Initial Pressure Drop (Pa)	102	80	102	80
Recommended final pressure drop at normal volume flow rate (Pa)	202	180	202	180

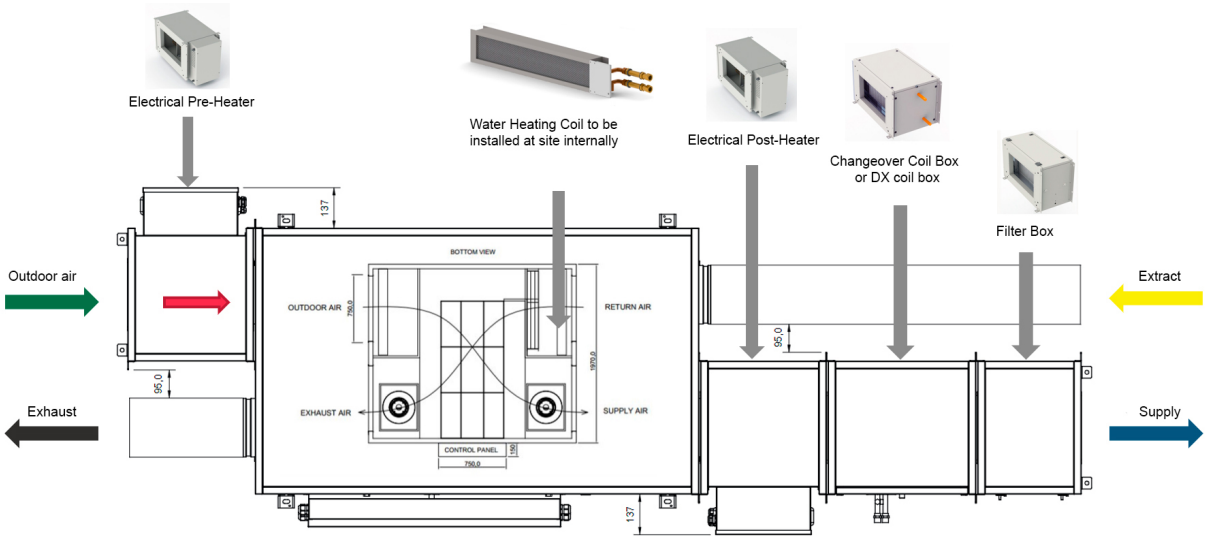
5.3 Capacity diagram

5.3.1 Capacity diagram, CX3000 series

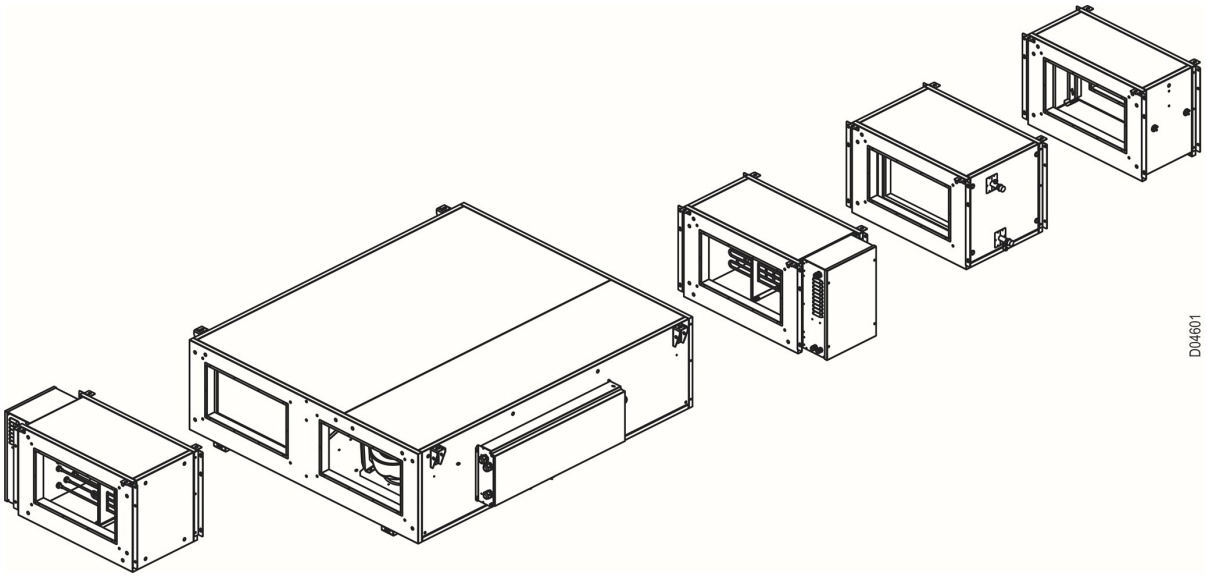
All calculations are done in EXselectPRO.

6. Unit Accessories

6.1 Overview



Assembly



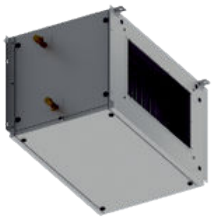
For all the ventilation units in CX3000 Range, assembly instructions are identical to the given instructions in this section. For Left/Right unit differences, assemblies must be done on the opposite sides of the given figures.

6.2 Packaging

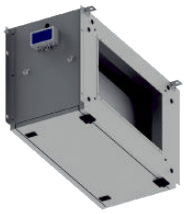
6.2.1 Packaging components

Electrical Pre-Heater	
Component	**Quantity**
Electrical Pre-Heater	1
Temperature Sensor	1
Communication Cable	1
Gasket	1
Suspension Clamps	4
Suspension Chocks	4

Electrical Post-Heater	
Component	**Quantity**
Electrical Post-Heater	1
Communication Cable	1
Gasket	1
Suspension Clamps	4
Suspension Chocks	4

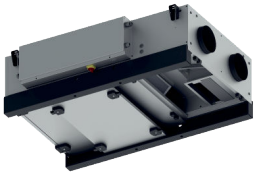


Changeover Coil Box	
Component	**Quantity**
Changeover Coil Box	1
Freezing Temperature Sensor	1
Communication Cable	1
Gasket	1
Suspension Clamps	4
Suspension Chocks	4



Filter Box	
Component	**Quantity**
Filter Box	1
Communication Cable	1
Gasket	1
Suspension Clamps	4
Suspension Chocks	4

Heating Coil	
Component	**Quantity**
Heating Coil	1
Coil Connection Pipe	2
Connection Nut	4
Rubber Circular Gasket (30 mm X 21 mm X 2 mm)	4
Rubber Circular Gasket (18.4 mm X 10.4 mm X 2 mm)	2
Freezing Temperature Sensor	1
Communication Cable	1



Sliding Rails	
Component	**Quantity**
Sliding Rail	2

External/Duct Damper with Motor1	
Component	**Quantity**
External/Duct Damper with Motor	1

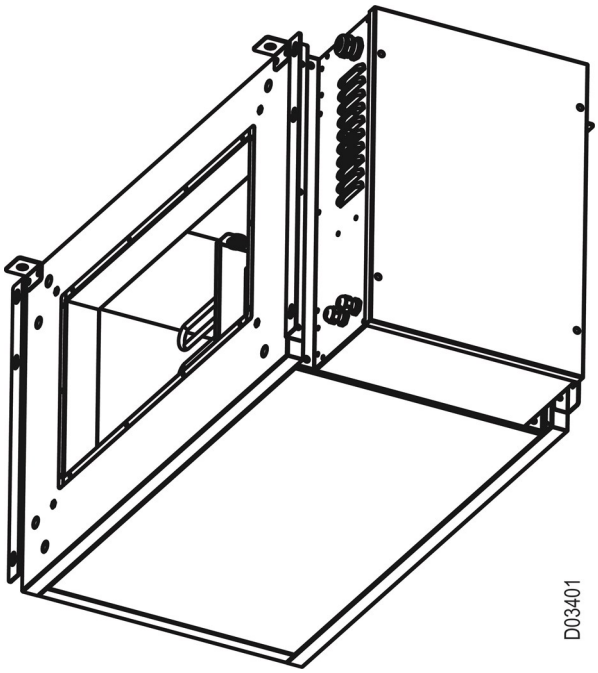
HMI Cable (25 m)	
Component	**Quantity**
HMI Cable (25m)	1

Extension E-Box	
Component	**Quantity**
Extension E-Box	1

Packaging
Electrical Pre-Heater, Electrical Post-Heater, Changeover Coil Box, Filter Box, Heating Coil, and Sliding Rails accessories are transferred inside carton boxes, tighly sealed for protection.
External/Duct Damper With Motor, HMI Cable 25M, and Extension E-Box accessories are transferred tighly covered with plastic for protection.
Packaged accessories are placed on disposable palet and packed in clear plastic.

6.3 Electrical Pre-Heater & Post-Heater

6.3.1 Electrical Pre-Heater, description



Pos.	Part	Function
1	Resistance	Heats up the outdoor air.
2 *	Thermostat 60	Measures air temperature and cuts off electrical pre-heater power temporarily at 60 °C. Supplies power to electrical heater after temperature drops below 45 °C.
3	Thermostat 70	Measures air temperature and cuts off electrical pre-heater power temporarily at 70 °C. Supplies power to electrical heater after temperature drops below 70 °C.
4	Thermostat 120	Measures air temperature and cuts off electrical pre-heater power permanently at 120 °C. Unless the reset button is used manually.
5	Air Temperature Sensor	Measures air temperature.
6	Reset Button	Resets electrical pre-heater and provides power manually

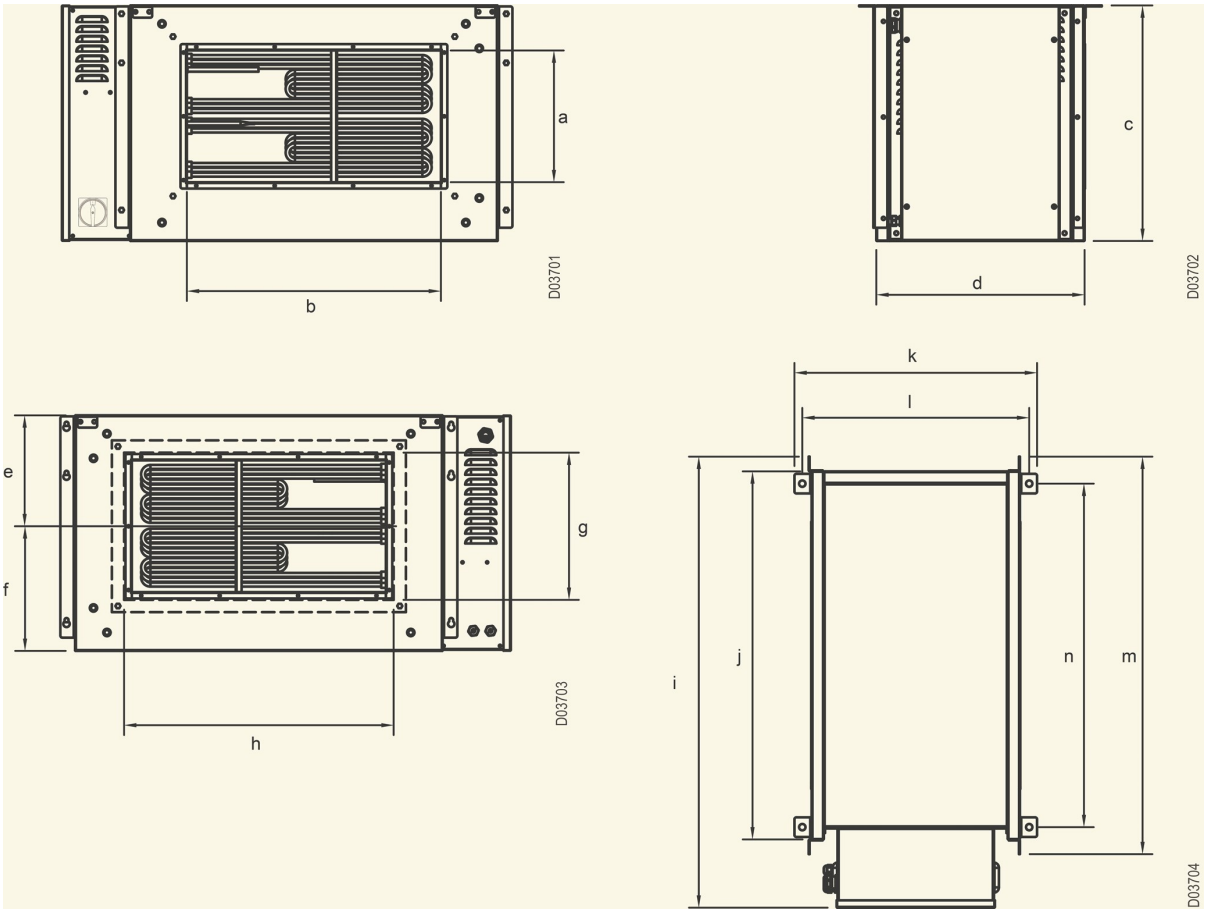
* Only for CX3010/CX3020 models

6.3.2 Electrical Post-Heater, description

Pos.	Part	Function
1	Resistance	Heats up the supply air.
2	Thermostat 70	Measures air temperature and cuts off electrical pre-heater power temporarily at 70 °C. Supplies power to electrical heater after temperature drops below 70 °C.
3	Thermostat 120	Measures air temperature and cuts off electrical pre-heater power permanently at 120 °C.
4*	Air Temperature Sensor	Measures the supply air temperature.
5	Reset Button	Resets electrical pre-heater and provides power manually.

* For post-heater, supply air temperature sensor is not provided inside the accessory package. Instead, temperature sensor connected to the supply outlet of the ventilation unit is connected to the electrical post-heater.

6.3.3 Electrical Pre-Heater & Post-Heater, dimensions



NB: All dimensions are given in millimeters (mm)

EXHAUSTO

Electrical Heater Model	a	b	c	d	e	f	g	h	i	j	k	l	m	n
CX3010 El. Pre-Heater 3kW CX3010 El. Post-Heater 3kW	220	218	370	425	185	185	220	250	617	450	495	463	510	375
CX3020 El. Pre-Heater 5kW CX3020 El. Post-Heater 5kW	270	318	400	425	200	200	270	350	742	575	495	463	635	500
CX3030 El. Pre-Heater 8kW CX3030 El. Post-Heater 4kW CX3030 El. Post-Heater 8kW	268	518	480	425	254	254	300	550	919	750	495	463	810	700
CX3040 El. Pre-Heater 11kW CX3040 El. Post-Heater 5.5kW CX3040 El. Post-Heater 11kW	368	568	565	425	283	283	400	600	994	825	495	463	885	750
CX3050 El. Pre-Heater 14kW CX3050 El. Post-Heater 7kW CX3050 El. Post-Heater 14kW	368	518	580	425	290	290	400	600	994	825	495	463	885	750
CX3060 El. Pre-Heater 18kW CX3060 El. Post-Heater 9kW CX3060 El. Post-Heater 18kW	368	718	580	425	290	290	400	750	1154	985	495	463	1045	910

NB: For all accessories of CX3000 Range units, dimensions are identical for both left and right versions of accessories.

Electrical Pre-Heater Model	Total Weight
CX3010 El. Pre-Heater 3 kW	27 kg
CX3020 El. Pre-Heater 5 kW	30 kg
CX3030 El. Pre-Heater 8 kW	42 kg
CX3040 El. Pre-Heater 11 kW	46 kg
CX3050 El. Pre-Heater 14 kW	49 kg
CX3060 El. Pre-Heater 18 kW	52 kg

Electrical Low Cap. Post-Heater Model	Total Weight
CX3030 El. Post-Heater 4 kW	39 kg
CX3040 El. Post-Heater 5.5 kW	43 kg
CX3050 El. Post-Heater 7 kW	46 kg
CX3060 El. Post-Heater 9 kW	49 kg

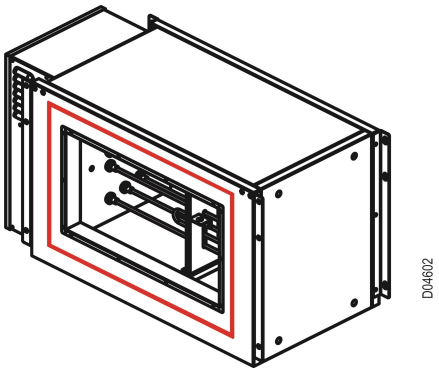
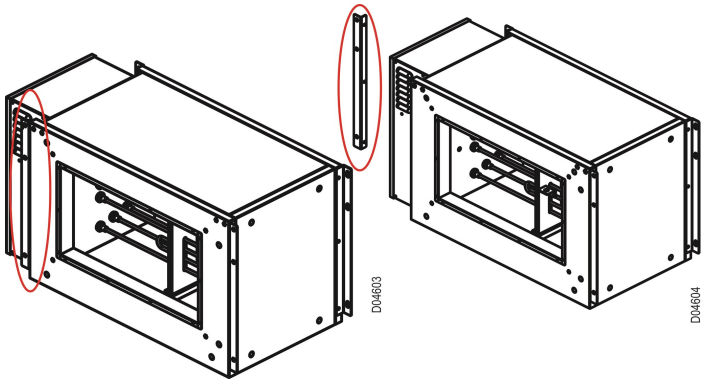
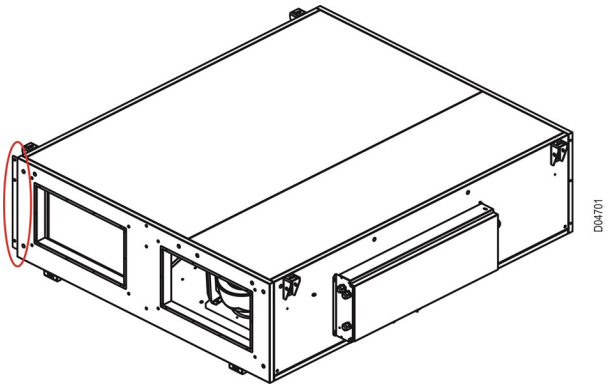
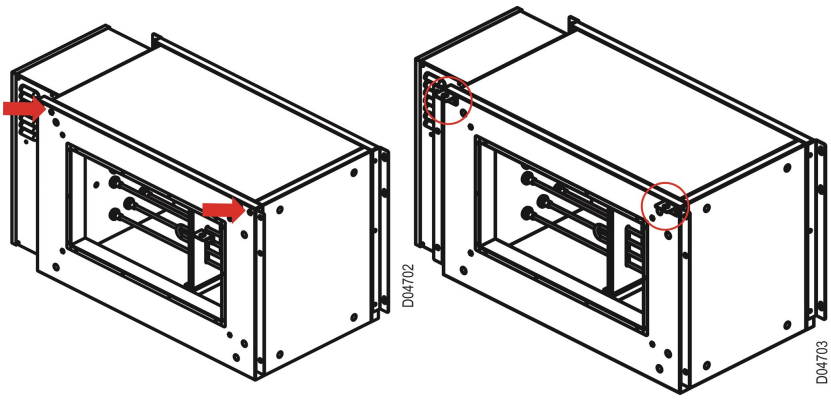
Electrical Post-Heater Model	Total Weight
CX3010 El. Post-Heater 3 kW	28 kg
CX3020 El. Post-Heater 5 kW	31 kg
CX3030 El. Post-Heater 8 kW	43 kg
CX3040 El. Post-Heater 11 kW	47 kg
CX3050 El. Post-Heater 14 kW	50 kg
CX3060 El. Post-Heater 18 kW	53 kg

6.3.4 Electrical heaters, technical data

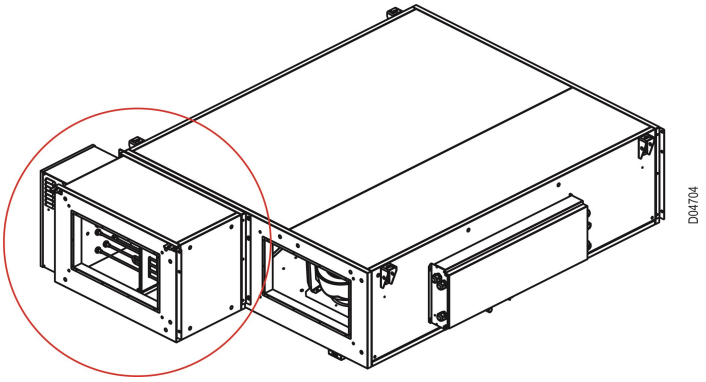
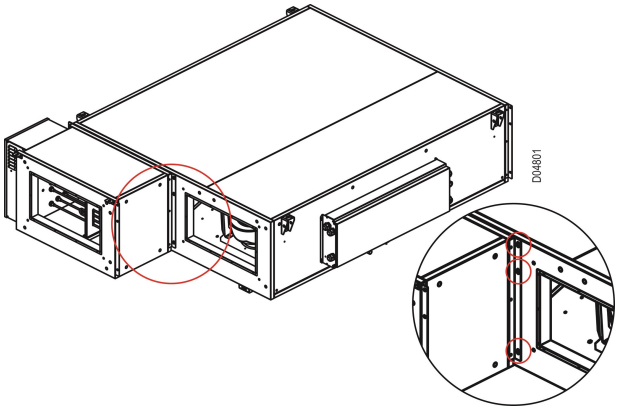
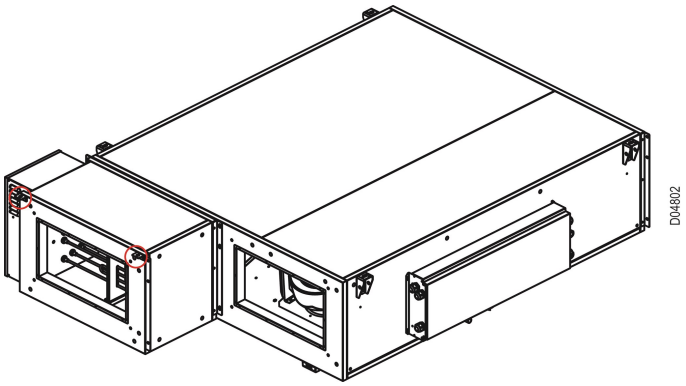
Packaging	Phase	Voltage (V)	Frequency (Hz)	Step	On/Off Control	0-10V Control	Capacity (kW)
CX3010 Electrical Pre-Heater 3 kW	3	400	50	1	Yes	-	3.0
CX3020 Electrical Pre-Heater 5 kW	3	400	50	1	Yes	-	5.0
CX3030 Electrical Pre-Heater 8 kW	3	400	50	2	Yes	-	8.0
CX3040 Electrical Pre-Heater 11 kW	3	400	50	2	Yes	-	11.0
CX3050 Electrical Pre-Heater 14 kW	3	400	50	2	Yes	-	14.0
CX3060 Electrical Pre-Heater 18 kW	3	400	50	2	Yes	-	18.0
CX3010 Electrical Post-Heater 3 kW	3	400	50	-	-	Yes	3.0
CX3020 Electrical Post-Heater 5 kW	3	400	50	-	-	Yes	5.0
CX3030 Electrical Post-Heater 4 kW	3	400	50	-	-	Yes	4.0
CX3030 Electrical Post-Heater 8 kW	3	400	50	-	-	Yes	8.0
CX3040 Electrical Post-Heater 5.5 kW	3	400	50	-	-	Yes	5.5
CX3040 Electrical Post-Heater 11 kW	3	400	50	-	-	Yes	11.0
CX3050 Electrical Post-Heater 7 kW	3	400	50	-	-	Yes	7.0
CX3050 Electrical Post-Heater 14 kW	3	400	50	-	-	Yes	14.0
CX3060 Electrical Post-Heater 9 kW	3	400	50	-	-	Yes	9.0
CX3060 Electrical Post-Heater 18 kW	3	400	50	-	-	Yes	18.0

6.3.5 How to connect the electrical pre-heater to the unit

Table 1

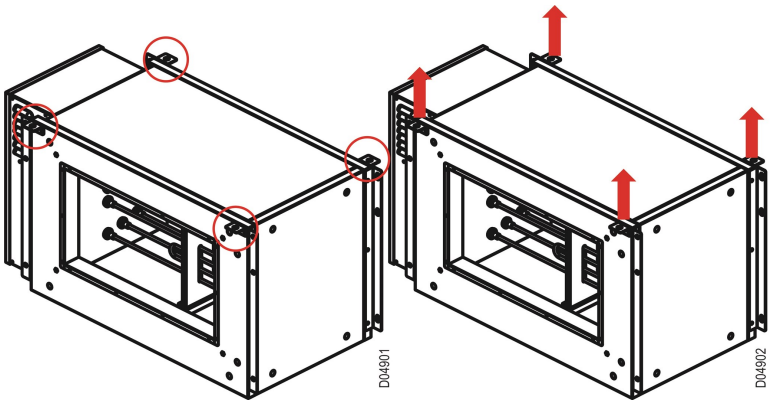
Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the electrical pre-heater package.	
3	Take the gasket roll provided inside the package. Paste it on the pre-heater air outlet surface where the ventilation unit surface will be assembled (Shown with red rectangle in the given figure).	
4	Dismount the additional bracket provided with the electrical pre-heater as assembled on it.	
5	Assemble dismounted bracket to the unit with bolts.	
6	Assemble two suspension clamps onto the electrical pre-heater surface which the air flow will enter the heater. **NB:** Use suspension clamps and bolts provided inside the accessory.	

EXHAUSTO

Step	Action	Figure
7	Loosen the bolts on the assembled bracket and the unit, which the accessory will be assembled with. Place the electrical pre-heater on the outdoor air inlet of the unit.	
8	Align the bolts on the unit with the bracket holes on the heater. Then, tighten bolts on the unit.	
9	Fix the two electrical pre-heater suspension clamps to the ceiling.	
10	Assemble the "rectangular to circular adapter" to the electrical pre-heater air inlet. Then, connect the air duct to the adapter on the electrical pre-heater. **NB:** If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the electrical pre-heater after the heater is assembled to the unit.	
11	Assemble the outdoor air temperature sensor provided with the electrical pre-heater to the air duct before the electrical pre-heater.	
12	Connect the electrical pre-heater e-box to the ventilation unit e-box with the communication cable provided with the electrical pre-heater inside the package.	
13	Reconfigure the ventilation unit for the electrical pre-heater.	

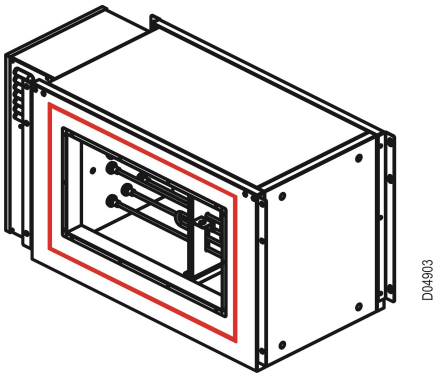
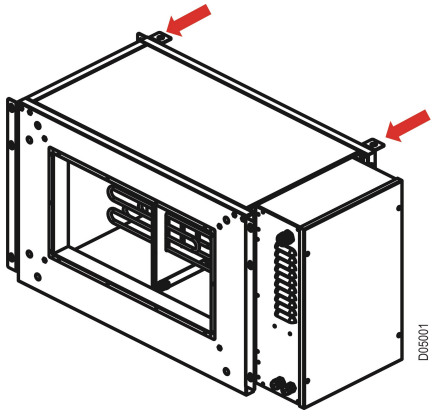
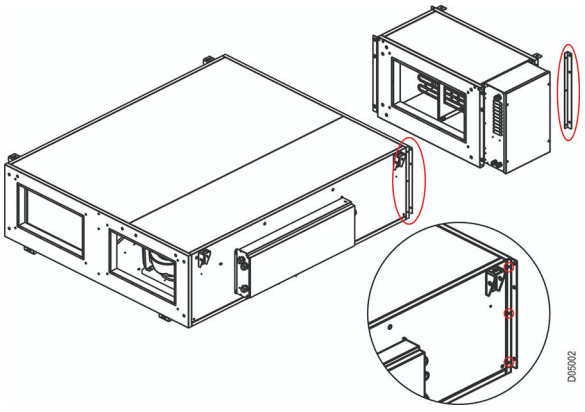
6.3.6 How to connect the electrical pre-heater to the air duct

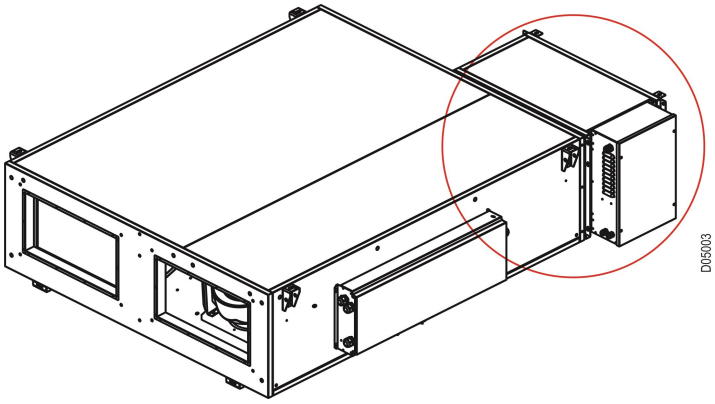
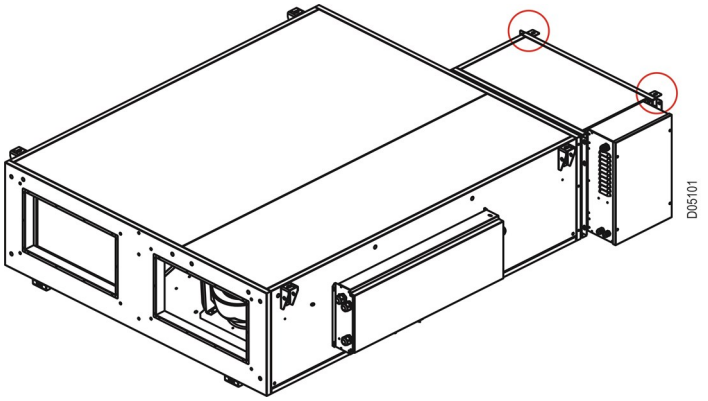
Table 2

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the electrical pre-heater package.	
3	Assemble four suspension clamps provided inside the accessory package to the electrical pre-heater. Then, fix the four electrical pre-heater suspension clamps to the ceiling.	
4	Assemble the "rectangular to circular adapter" to the electrical pre-heater air inlet and outlet. Then, connect air ducts to adapters on the electrical pre-heater. **NB:** If the air ducts are rectangular, no adapter is required for the connection. The air ducts can be connected to the electrical pre-heater after the heater is fixed to the ceiling.	
5	Assemble the outdoor air temperature sensor provided with the electrical pre-heater to the air duct before the electrical pre-heater.	
6	Connect the electrical pre-heater e-box to the ventilation unit e-box with the communication cable provided with the electrical pre-heater inside the package.	
7	Reconfigure the ventilation unit for the electrical pre-heater.	

6.3.7 How to connect the electrical post-heater to the unit

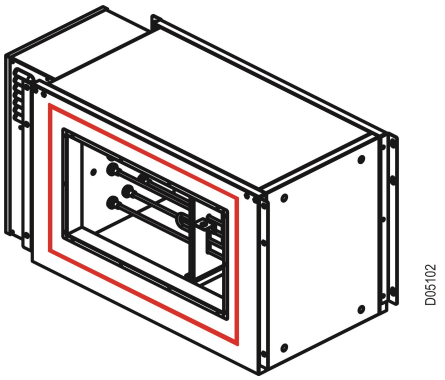
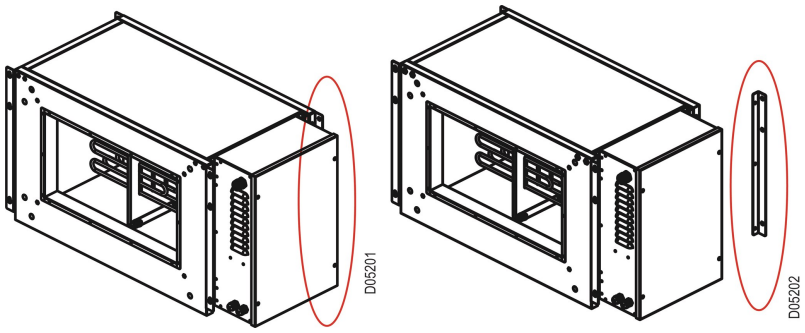
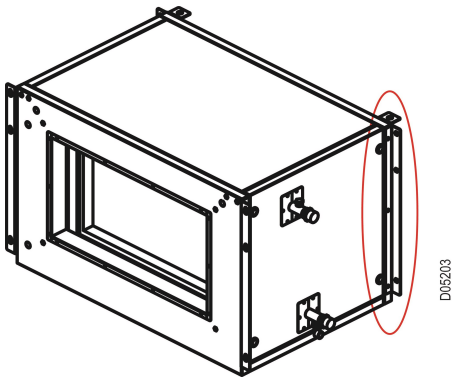
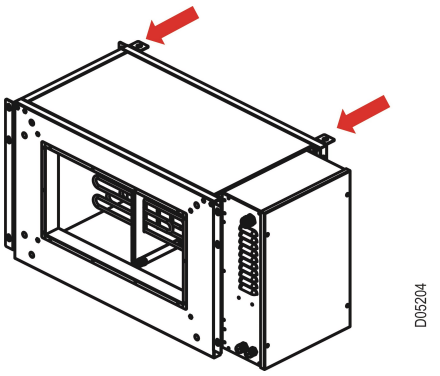
Table 3

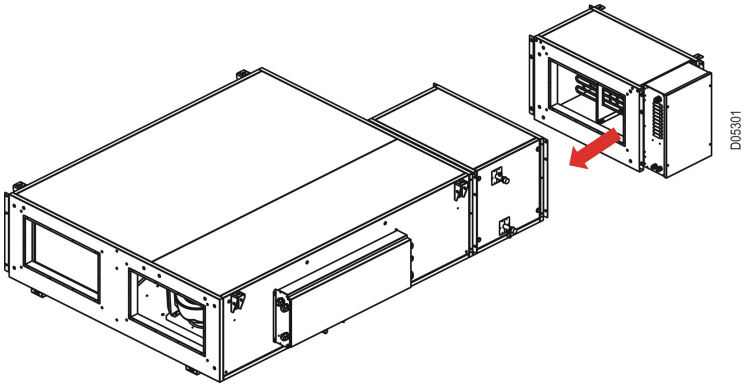
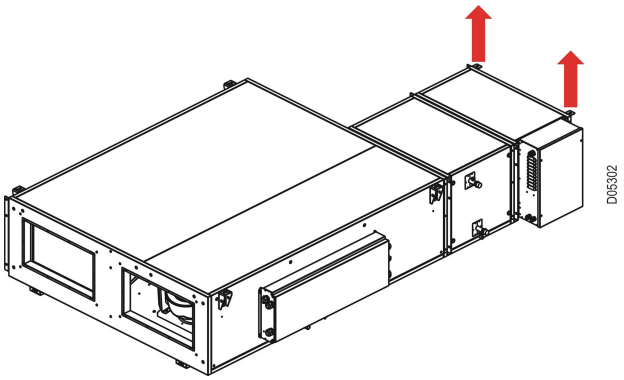
Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the electrical post-heater package.	
3	Take the gasket roll provided inside the package. Paste it on the post-heater air inlet where the heater will be assembled.	
4	Assemble two suspension clamps onto the electrical post-heater surface where the air flow will exit the heater. **NB:** Use suspension clamps and bolts provided inside the accessory package.	
5	Dismount the additional bracket provided with the electrical post-heater as assembled on it. Then, assemble dismounted bracket to the unit with bolts.	

Step	Action	Figure
6	Loosen the bolts on the assembled bracket and the unit, which the accessory will be assembled with. Place the electrical post-heater on the supply air outlet of the unit. Align the bolts on the unit with the bracket holes on the heater. Then, tighten bolts on the unit.	
7	Fix the two electrical post-heater suspension clamps to the ceiling.	
8	"Assemble the "rectangular to circular adapter" to the electrical post-heater air outlet. Then, connect the air duct to the adapter on the electrical post-heater. **NB:** If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the electrical post-heater after the heater is assembled to the unit."	
9	Dismount the supply air temperature sensor provided with the unit and assembled to the supply air side of the ventilation duct.	
10	Reassemble the supply air temperature sensor removed from the air duct to the air duct after the electrical post-heater.	
11	Connect the electrical post-heater e-box to the ventilation unit e-box with the communication cable provided with the electrical post-heater inside the package.	
12	Reconfigure the ventilation unit for the electrical post-heater.	

6.3.8 How to connect the electrical post-heater to another accessory

Table 4

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the electrical post-heater package.	
3	Take the gasket roll provided inside the package. Paste it on the post-heater air inlet where the heater will be assembled.	 D05102
4	Dismount the additional bracket provided with the electrical post-heater as assembled on it. **NB:** If another accessory will be assembled after the electrical post-heater, dismount the bracket on the accessory which will be assembled at the end of the supply channel before the ventilation duct or adapter."	 D05201 D05202
5	Assemble dismounted bracket to the accessory with bolts.	 D05203
6	Assemble two suspension clamps onto the electrical post-heater surface where the air flow will exit the heater. **NB:**Use suspension clamps and bolts provided inside the accessory package.	 D05204
7	Dismount the suspension clamps connections to the ceiling of the accessory which the electrical post-heater will be assembled to.	

Step	Action	Figure
8	Loosen the bolts on the accessory which the electrical post-heater will be assembled to. Place the electrical post-heater on the supply air outlet of the accessory. Then, align the bolts on the accessory with the bracket holes on the heater. Tighten bolts on the accessory.	
9	Fix the other two electrical post-heater suspension clamps to the ceiling.	
10	Assemble the "rectangular to circular adapter" to the electrical post-heater air outlet. Then, connect the air duct to the adapter on the electrical post-heater. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the electrical post-heater after the heater is assembled to the unit.	
11	Dismount the supply air temperature sensor assembled to the ventilation duct after the accessory which the electrical post-heater is connected to.	
12	Reassemble the supply air temperature sensor removed from the air duct to the air duct after the electrical post-heater.	
13	Connect the electrical post-heater e-box to the ventilation unit e-box with the communication cable provided with the electrical post-heater inside the package.	
14	Reconfigure the ventilation unit for the electrical post-heater.	

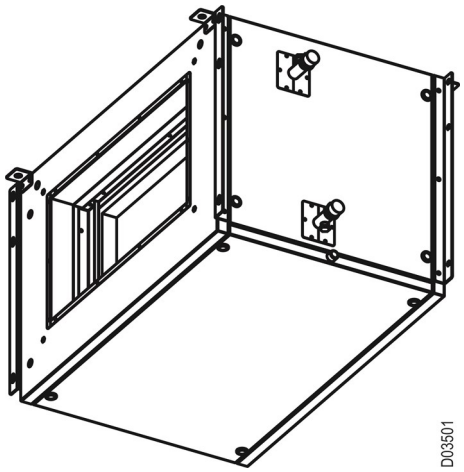
6.3.9 How to connect the electrical post-heater to the air duct

Table 5

Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the electrical pre-heater package.
3	Fix the four electrical post-heater suspension clamps to the ceiling (Reference the given figures in Table 2, Step 3).
4	Assemble the "rectangular to circular adapter" to the electrical post-heater air inlet and outlet. Then, connect air ducts to adapters on the electrical post-heater. **NB:** If the air ducts are rectangular, no adapter is required for the connection. The air ducts can be connected to the electrical post-heater after the heater is fixed to the ceiling.
5	Dismount the supply air temperature sensor assembled to the ventilation duct after the accessory assembled before the electrical post-heater.
6	Reassemble the supply air temperature sensor removed from the air duct to the air duct after the electrical post-heater.
7	Connect the electrical post-heater e-box to the ventilation unit e-box with the communication cable provided with the electrical post-heater inside the package.
8	Reconfigure the ventilation unit for the electrical post-heater.

6.4 Changeover Coil Box

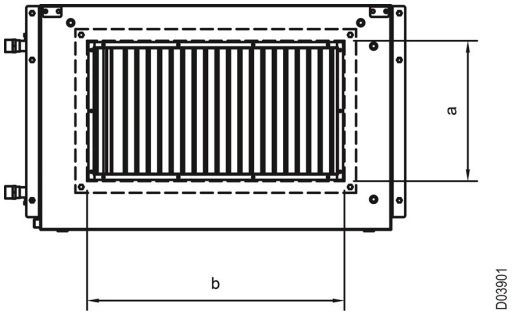
6.4.1 Changeover Coil Box, description

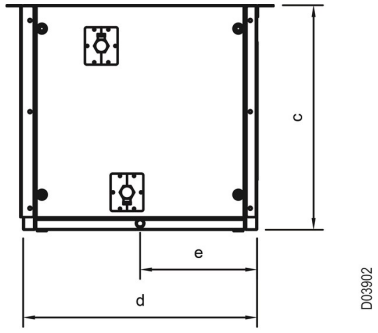


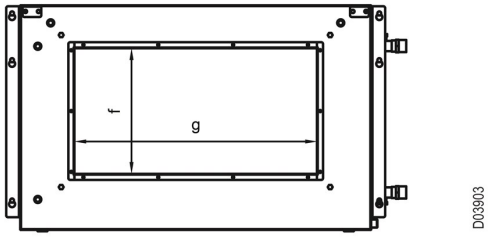
Pos.	Part	Function
1	Changeover Coil	Cools/Heats supply air.
2	Droplet Separator	Seperates moisture from supply air.
3*	Air Temperature Sensor	Measures the supply air temperature.
4	Condensation Outlet Pipe	Transfers condensed water from the condensation tray outside.
5	Drainage Siphon Adaptor	Enables siphon connection to the condensation outlet pipe.
6	Coil Defrost Sensor	Measures coil outlet water temperature.

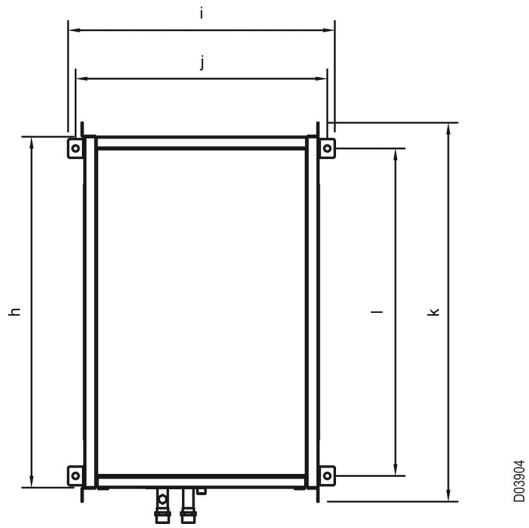
* For the changeover coil box, supply air temperature sensor is not provided inside the accessory package. Instead, the temperature sensor connected to the supply outlet of the ventilation unit is connected to the changeover coil box.

6.4.2 Changeover Coil Box, dimensions









NB: All dimensions are given in millimeters (mm)

Changeover Coil Box Model	a	b	c	d	e	f	g	h	i	j	k	l
CX3010 Changeover Coil Box	220	250	370	500	250	220	218	450	570	538	510	375
CX3020 Changeover Coil Box	270	350	400	500	250	270	318	575	570	538	635	500
CX3030 Changeover Coil Box	300	550	480	500	250	268	518	750	570	538	810	700
CX3040 Changeover Coil Box	400	600	565	500	250	368	568	825	570	538	885	750
CX3050 Changeover Coil Box	400	600	580	500	250	368	568	825	570	538	885	750
CX3060 Changeover Coil Box	400	750	580	500	250	368	718	985	570	538	1045	910

NB: For all accessories of CX3000 Range units, dimensions are identical for both left and right versions of accessories.

Changeover Coil Box Model	Coil Weight	Total Weight
CX3010 Changeover Coil Box	6 kg	30 kg
CX3020 Changeover Coil Box	7 kg	36 kg
CX3030 Changeover Coil Box	9 kg	48 kg
CX3040 Changeover Coil Box	13 kg	57 kg
CX3050 Changeover Coil Box	14 kg	60 kg
CX3060 Changeover Coil Box	15 kg	64 kg

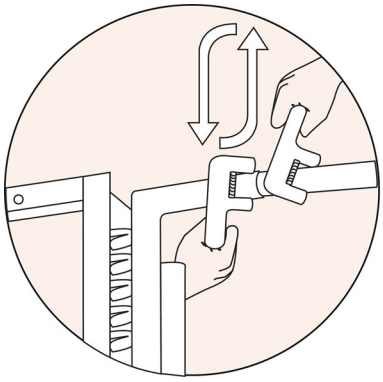
6.4.3 Changeover coils, technical data

	Cooling operation		Heating Operation	
Changeover Coil Box Model	**Nominal Volume Flow Rate (m3/h)**	**Cooling Capacity (kW)**	**Nominal Volume Flow Rate (m3/h)**	**Heating Capacity (kW)**
CX3010 Changeover Coil Box	500	1.48	500	4.06
CX3020 Changeover Coil Box	900	2.32	900	6.77
CX3030 Changeover Coil Box	1400	3.94	1400	10.95
CX3040 Changeover Coil Box	2000	5.03	2000	15.58
CX3050 Changeover Coil Box	2500	7.04	2500	19.08
CX3060 Changeover Coil Box	3300	10.67	3300	27.69

NB: For coil heating capacities. water coil inlet temperature & outlet temperature are taken as 60°C & 40°C. respectively.
For coil cooling capacities. water coil inlet temperature & outlet temperature are taken as 7°C & 12°C. respectively.

6.4.4 How to connect the changeover coil box to the unit

Table 6

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the changeover coil box package.	
3	Apply the instructions given in steps 3-7, Table 3.	
4	Assemble the "rectangular to circular adapter" to the changeover coil box air outlet. Then, connect the air duct to the adapter on the changeover coil box. **NB:** If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the changeover coil box after the coil box is assembled to the unit.	
5	Dismount the supply air temperature sensor provided with the unit and assembled to the supply air side of the ventilation duct.	
6	Reassemble the supply air temperature sensor removed from the air duct to the air duct after the changeover coil box.	
7	Connect the piping to the changeover coil box pipes. Use a double wrench while connecting piping to the changeover coil box to prevent any damage to the pipes.**NB:** Remember to put anti-freeze inside the coil.	 D05501
10	Connect the 3-way valve actuator to the ventilation unit e-box with the communication cable provided inside the changeover coil box package.	
11	Attach the freezing temperature sensor provided inside the coil box package to the water outlet pipe of the changeover coil box. Use plastic clamps to attach the sensor to the pipe.	
12	Connect the temperature sensor to the ventilation unit e-box.	
13	Reconfigure the ventilation unit for the electrical post-heater.	

6.4.5 How to connect the changeover coil box to another accessory

Table 7

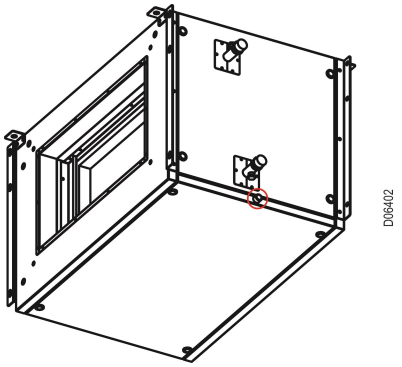
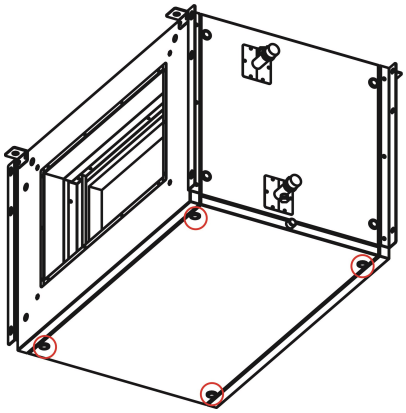
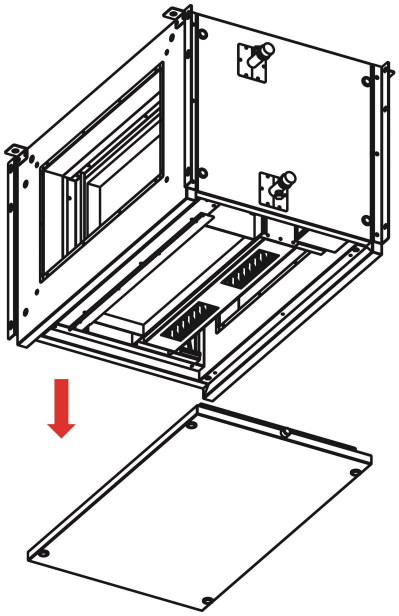
Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the changeover coil box package.
3	Apply the instructions given in Step 3-9, Table 4.
4	Assemble the “rectangular to circular adapter” to the changeover coil box air outlet. Then, connect the air duct to the adapter on the changeover coil box. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the changeover coil box after the coil box is assembled to the unit.
5	Dismount the supply air temperature sensor assembled to the ventilation duct after the accessory which the changeover coil box is connected to.
6	Apply the instructions given in Step 6-13, Table 6.

6.4.6 How to connect the changeover coil box to the air duct

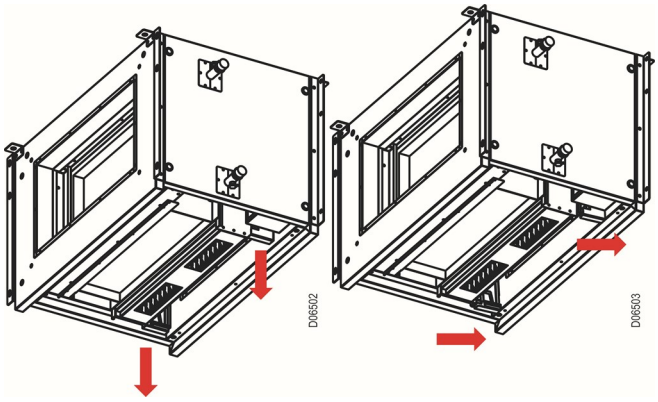
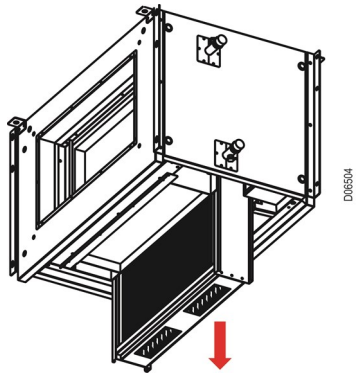
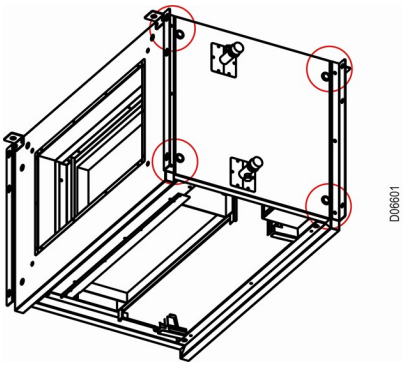
Table 8

Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the changeover coil box package.
3	Fix the four changeover coil box suspension clamps to the ceiling (Reference the given figures in Table 2, Step 3).
4	Assemble the “rectangular to circular adapter” to the changeover coil box air inlet and outlet. Then, connect air ducts to adapters on the changeover coil box. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air ducts can be connected to the changeover coil box after the coil box is fixed to the ceiling.
5	Dismount the supply air temperature sensor assembled to the ventilation duct after the accessory which the changeover coil box is connected to.
6	Apply the instructions given in Step 6-13, Table 6.

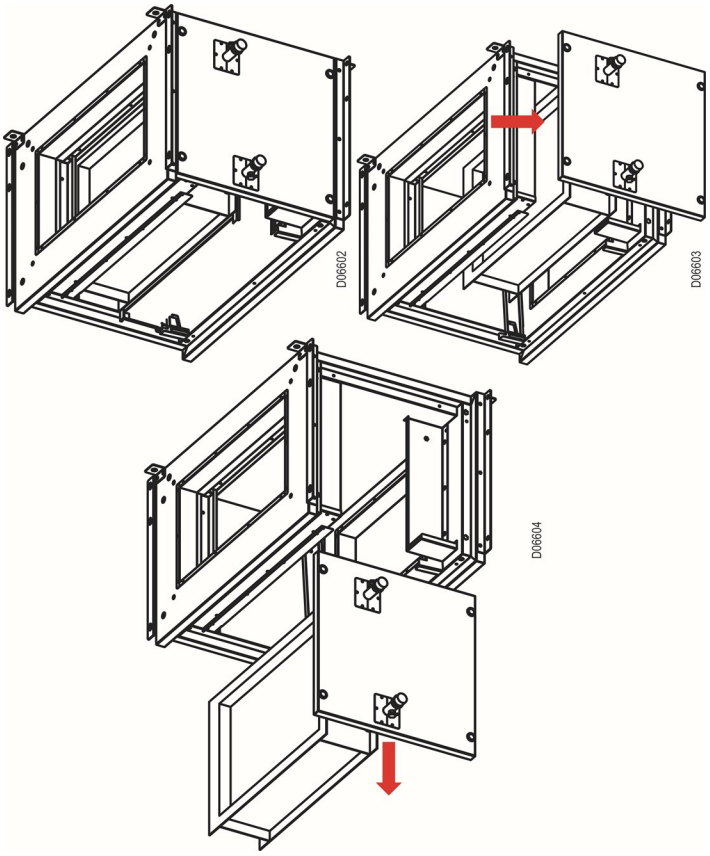
6.4.7 How to service the coil box

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Cut off the water flows coming to the changeover coil box pipes.	
3	Disconnect the condensation drainage (shown with a red circle). Then, disconnect the pipe connections. Use a double wrench while connecting piping to the changeover coil box to prevent any damage to the pipes.	 D06402
4	Unscrew 4 bolts on corners of the panel below the coil box (shown with red circles). **NB:** While unscrewing the bolts, place your hand on the panel to support the weight of the panel.	 D06403
5	Remove the coil box panel downwards (arrow direction).	 D06501

EXHAUSTO

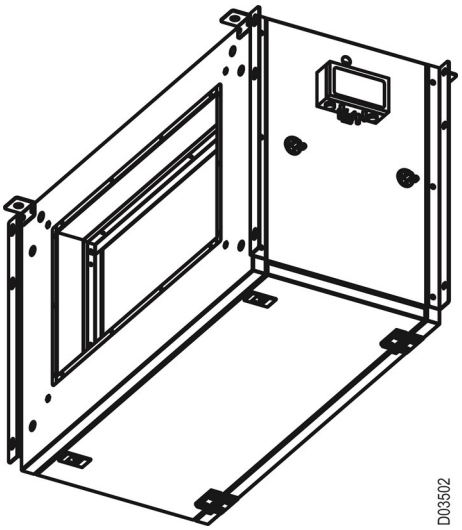
Step	Action	Figure
6	Loosen the bottom bolts on the separator clamps slightly. Pull separator clamps downwards (Arrow 1 direction). Then, push separator clamps sideways (Arrow 2 direction).	
7	Droplet separator is now free and can be removed downwards (Arrow 1 direction).	
8	Clean the droplet separator.	
9	Unscrew 4 bolts on corners of the coil box side panel (shown with red circles).	

EXHAUSTO

Step	Action	Figure
10	First, pull the coil slightly towards yourself. Then, slide the changeover coil aside (Arrow 1 direction). Then, take it outside the coil box module (Arrow 2 direction).	
11	Brush and vacuum clean the changeover coil. If necessary, clean with soap and water (Then, take the changeover coil outside the unit before the cleaning process).	

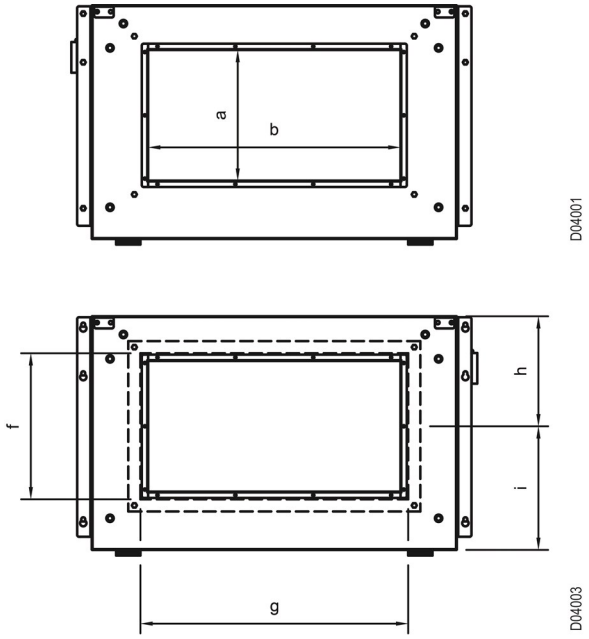
6.5 Filter Box

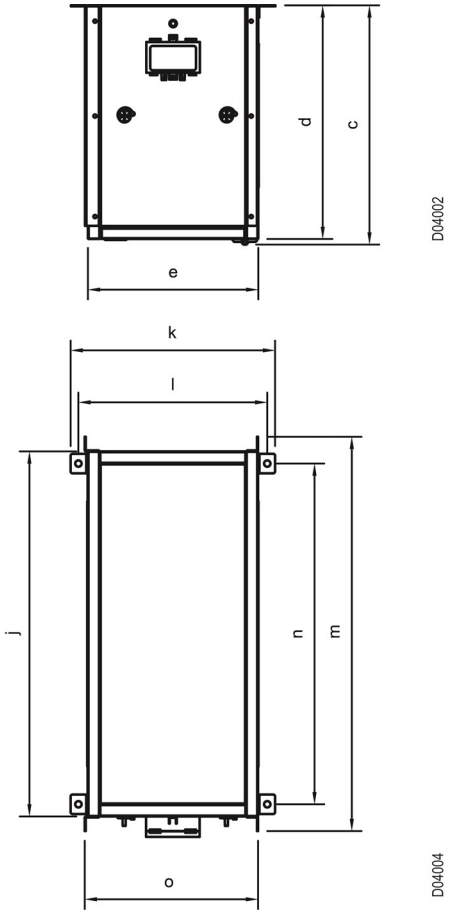
6.5.1 Filter Box, description



Pos.	Part	Function
1	Air Filter	Filters supply air.
2	Pressure Transmitter	Measures air pressure drop due to filter.

6.5.2 Filter Box, dimensions





Filter Box Model	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
CX3010 Filter Box	220	218	382	370	350	220	250	185	185	450	420	388	510	375	356
CX3020 Filter Box	270	318	412	400	350	270	350	200	200	575	420	388	635	500	356
CX3030 Filter Box	268	518	492	480	350	300	550	226	254	750	420	388	810	700	356
CX3040 Filter Box	368	568	572	565	350	400	600	283	283	825	420	388	885	750	356
CX3050 Filter Box	368	568	592	580	350	400	600	290	290	825	420	388	885	750	356
CX3060 Filter Box	368	718	592	580	350	400	750	290	290	985	420	388	1045	910	356

NB: For all accessories of CX3000 Range units, dimensions are identical for both left and right versions of accessories.

Filter Box Model	Total Weight
CX3010 Filter Box	21 kg
CX3020 Filter Box	23 kg
CX3030 Filter Box	33 kg
CX3040 Filter Box	36 kg
CX3050 Filter Box	39 kg
CX3060 Filter Box	42 kg

6.5.3 How to connect the filter box to the unit

Table 9

Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the filter box package.
3	Follow the instructions given in Table 3, Steps 3-7.
4	Assemble the “rectangular to circular adapter” to the filter box air outlet. Then, connect the air duct to the adapter on the filter box. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the filter box after the filter box is assembled to the unit.
5	Dismount the supply air temperature sensor provided with the unit and assembled to the supply air side of the ventilation duct.
6	Reassemble the supply air temperature sensor removed from the air duct to the air duct after the filter box.
7	Connect the filter box to the ventilation unit e-box with the communication cable provided inside the filter box package.
8	Reconfigure the ventilation unit for the filter box.
9	**NB:** For the filter box accessory, production is not done for different service directions (left/right). All filter boxes can be used for both left and right units. In the factory, pressure transmitter and pressure hoses are positioned for right service direction. If the filter box is to be used for left service direction, pressure transmitter and hoses need to be removed and reassembled to the opposite filter box panel. Make sure that the hose coming from the pressure probe on the air filter inlet goes to positive (+) probe of the transmitter. The hose coming from the pressure probe on the air filter outlet goes to negative (-) probe of the transmitter.

6.5.4 How to connect the filter box to another accessory

Table 10

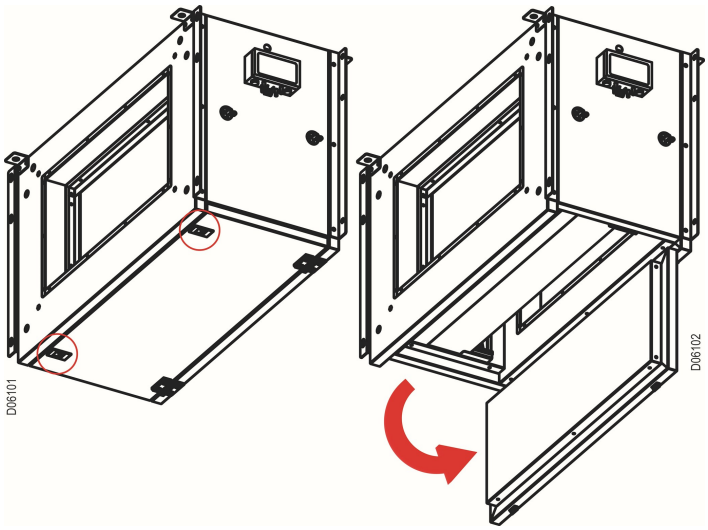
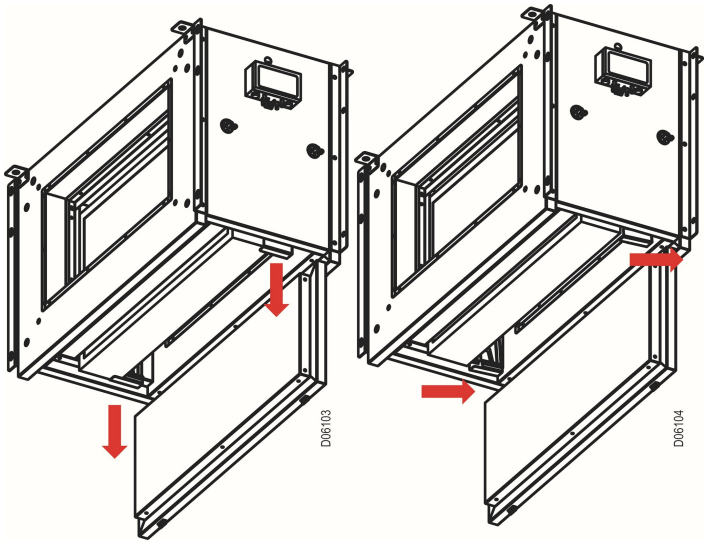
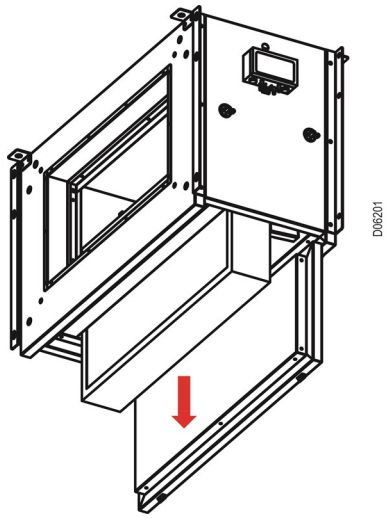
Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the filter box package.
3	Follow the instructions given in Table 4, Steps 3-9.
4	Assemble the “rectangular to circular adapter” to the filter box air outlet. Then, connect the air duct to the adapter on the filter box. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air duct can be connected to the filter box after the filter box is assembled to the unit.
5	Dismount the supply air temperature sensor assembled to the ventilation duct after the accessory which the filter box is connected.
6	Follow the instructions given in Table 9, Steps 6-9.

6.5.5 How to connect the filter box to the air duct

Table 11

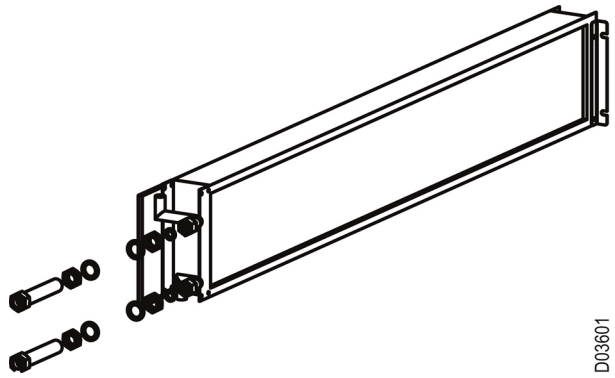
Step	Action
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.
2	Open the filter box package.
3	Fix the four filter box suspension clamps to the ceiling (Reference the given figures in Table 2, Step 3).
4	Assemble the “rectangular to circular adapter” to the filter box air inlet and outlet. Then, connect air ducts to adapters on the filter box. **NB:**If the air ducts are rectangular, no adapter is required for the connection. The air ducts can be connected to the filter box after the filter box is fixed to the ceiling.
5	Dismount supply air temperature sensor assembled to the ventilation duct after the accessory which the filter box is connected.
6	Follow the instructions given in Table 9, Steps 6-9.

6.5.6 How to service the filter box

Step	Action	Figure
1	Open the 2 locks on the filter box door (Showed with circles). Then, open the door.	
2	Loosen the bottom bolts on the separator clamps slightly. Pull filter clamps downwards (Arrow 1 direction). Then, push filter clamps sideways (Arrow 2 direction).	
3	Filter is now free and can be removed downwards (Arrow direction).	

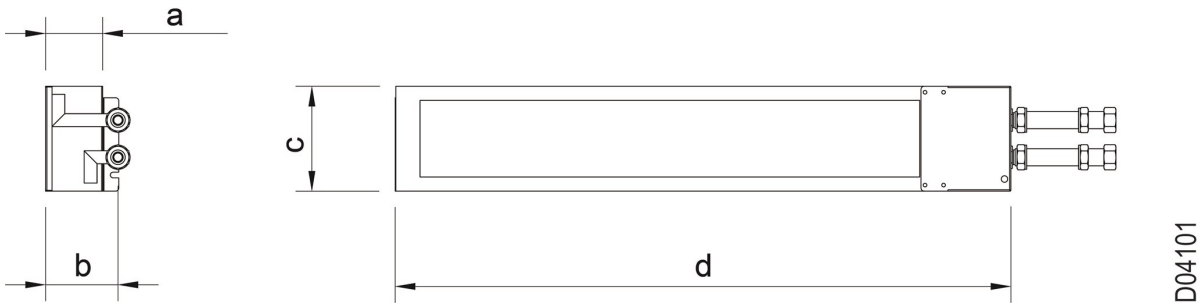
6.6 Water Heating Coil (HCW)

6.6.1 Water Heating Coil (HCW), description



Pos.	Part	Function
1	Water Heating Coil	Heats up the supply air.
2	Coil Defrost Sensor	Measures coil outlet water temperature.

6.6.2 Water Heating Coil (HCW), dimensions



Heating Coil Model	a	b	c	d
CX3010 Heating Coil	70	89	130	764
CX3020 Heating Coil	70	89	151	1014
CX3030 Heating Coil	70	89	187	1364
CX3040 Heating Coil	70	89	228	1514
CX3050 Heating Coil	70	89	228	1514
CX3060 Heating Coil	70	89	227	1834

Heating Coil Model	Total Weight
CX3010 Heating Coil	5 kg
CX3020 Heating Coil	6 kg
CX3030 Heating Coil	8 kg
CX3040-50 Heating Coil	11 kg
CX3060 Heating Coil	13 kg

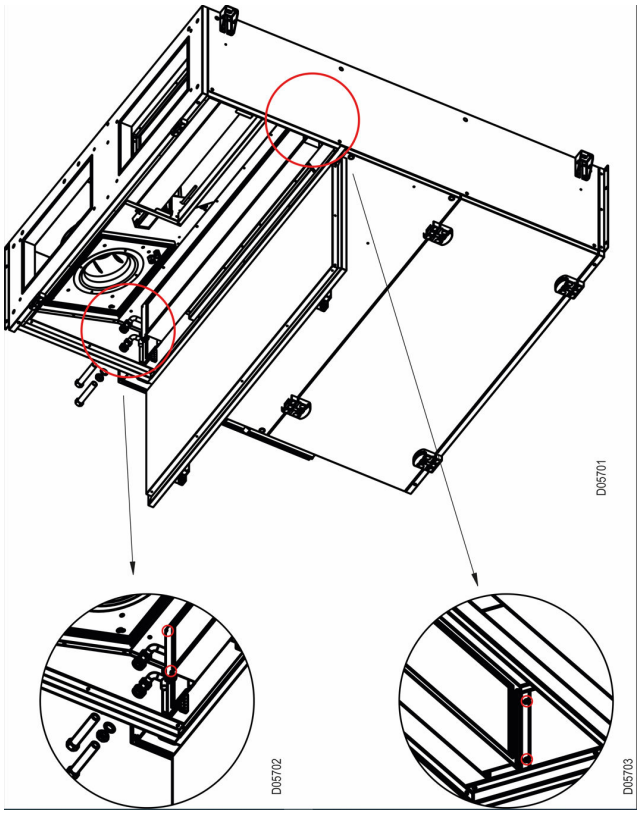
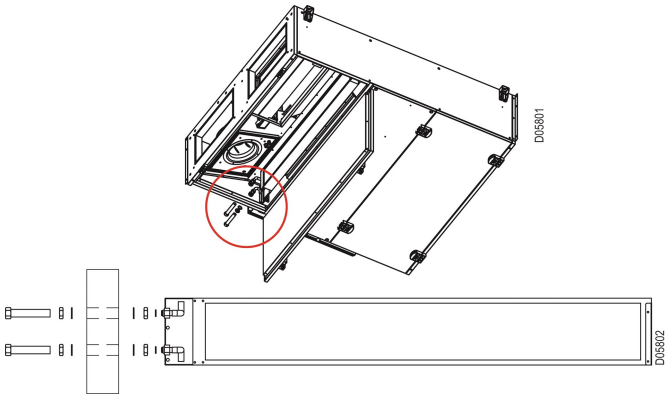
6.6.3 Water Heating coils (HCW), technical data

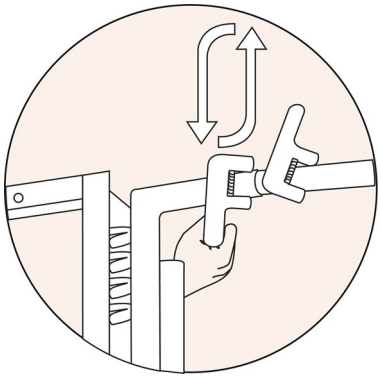
Heating Coil Model	Nominal Volume Flow Rate (m3/h)	Heating Capacity (kW)
CX3010 Water Heating Coil	500	2.89
CX3020 Water Heating Coil	900	5.38
CX3030 Water Heating Coil	1400	7.81
CX3040 Water Heating Coil	2000	12.84
CX3050 Water Heating Coil	2500	14.67
CX3060 Water Heating Coil	3300	19.11

NB: For coil heating capacities. water coil inlet temperature & outlet temperature are taken as 60°C & 40°C. respectively.

6.6.4 How to connect the water heating coil to the unit

Table 12

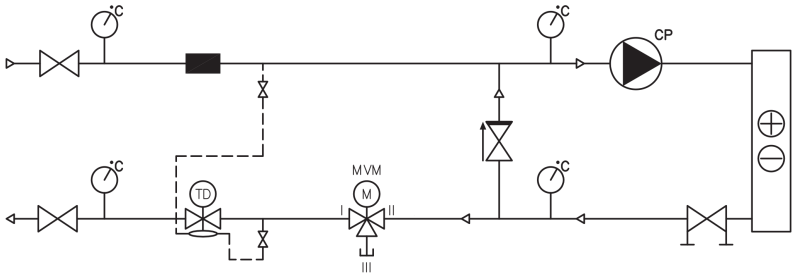
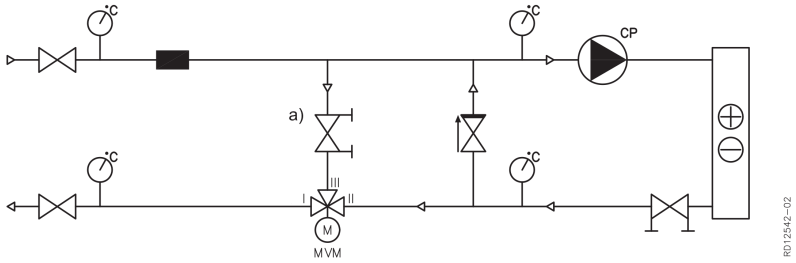
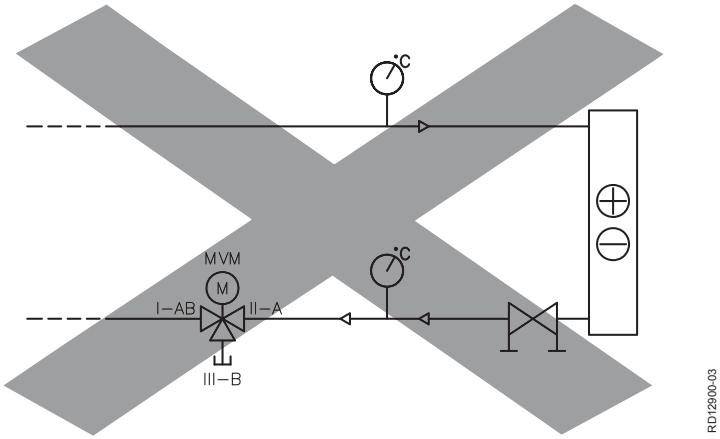
Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Open the heating coil package.	
3	Loosen the connection bolts on the unit to assemble the heating coil inside. Place the heating coil inside ventilation unit.	
4	Tighten bolts on the unit to assemble the heating coil. For the holes given in the second figure, use screws to assemble the heating coil.	
5	Connect the pipes provided inside the heating coil package to the heating coil pipes. Use the rubber gaskets provided inside the package.	

Step	Action	Figure
6	Connect the piping to the heating coil pipes. Use a double wrench while connecting piping to the changeover coil box to prevent any damage to the pipes. **NB:** Remember to put anti-freeze inside the coil.	 D05803
7	Attach the freezing temperature sensor provided inside the coil box package to the water outlet pipe of the changeover coil box. Use plastic clamps to attach the sensor to the pipe.	
8	Connect the temperature sensor to the ventilation unit e-box.	

6.6.5 Principles for connecting the water heating coil

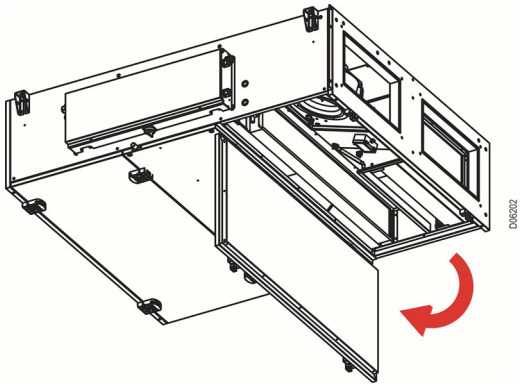
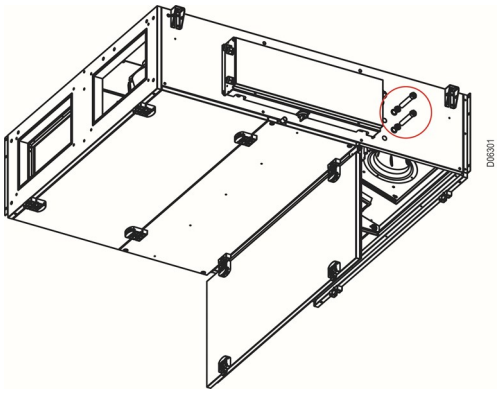
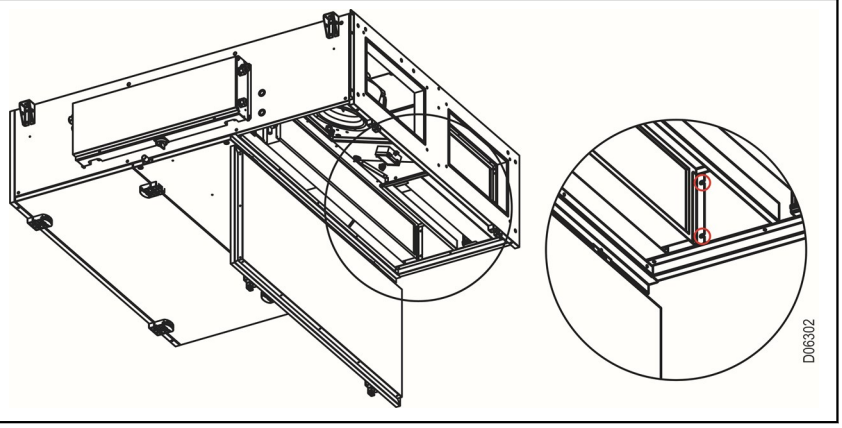
Mixing loop

The diagrams below are simplified. The dimensioning of valves, pipes, etc. and heating coil connection must always be carried out by authorised fitters in accordance with applicable regulations and legislation.

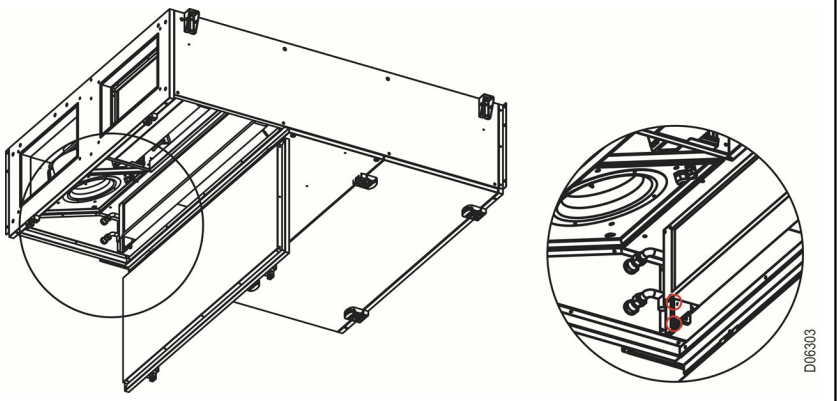
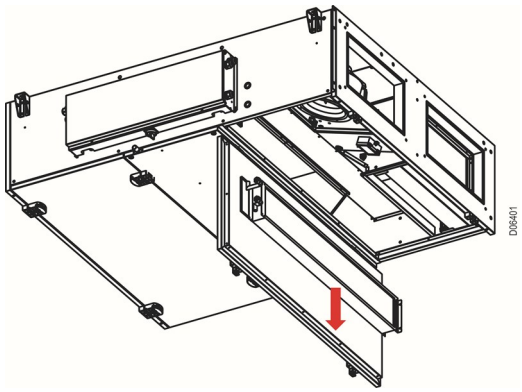
Type	Principle	Simplified diagram
Mixing loop 1	Variable flow in the primary circuit (supply) and constant flow in secondary circuit (CX unit)	
Mixing loop 2	Constant flow in the primary circuit (supply) and the secondary circuit (CX unit) a) When there is no heating or cooling requirement, valve adjustment must be based on the required primary circuit water flow	
⚠	Do not connect the water coil like this! Connection without circulation pump risks frost damage!	

EXHAUSTO

6.6.6 How to service the heating coil

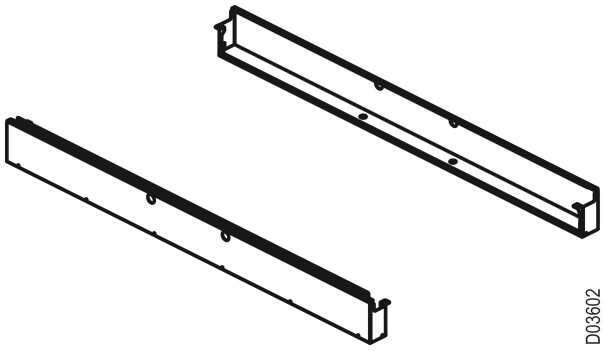
Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. NB: If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Cut off the water flows coming to the heating coil pipes.	
3	Open the CX unit supply side service door.	
4	Dismount the heating coil swivel coupling connections from the connection pipes. Use a double wrench while connecting piping to the changeover coil box to prevent any damage to the pipes.	
5	Loosen bolts which hold the heating coil connection parts attached to the unit. **NB:** For CX3060 ventilation unit heating coils, bolts shown are to be unscrewed completely. For other units, bolts are to be loosened.	

EXHAUSTO

Step	Action	Figure
6	Unscrew the screws which hold the heating coil connection parts attached to the unit.	
7	Remove the heating coil outside the unit. **NB:** Coil fins can easily be damaged. Do not touch the fins while servicing the coil.	
8	Brush and vacuum clean the heating coil. If necessary, clean with soap and water (Then, take the heating coil out of the unit before the cleaning process).	

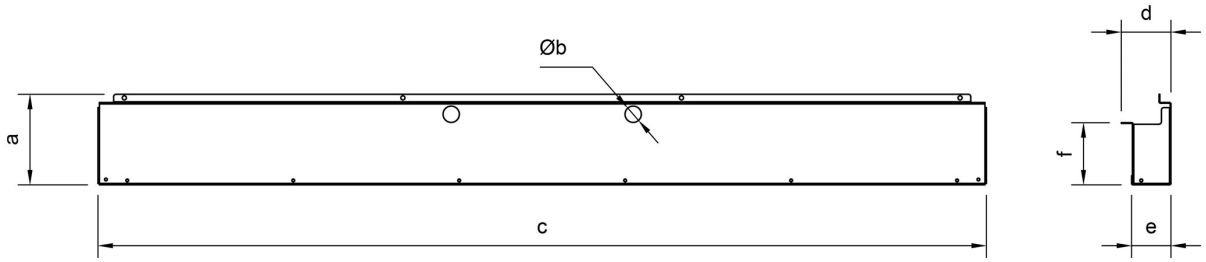
6.7 Sliding Rails

6.7.1 Sliding Rail, description



Pos.	Part	Function
1	Sliding Rail	Enables servicing without fully opening or removing doors/ panels.

6.7.2 Sliding Rail, dimensions

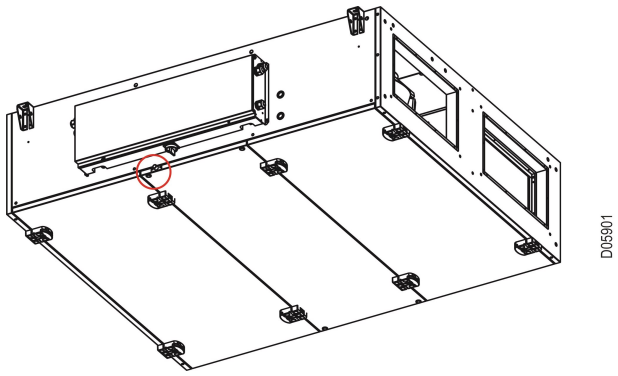
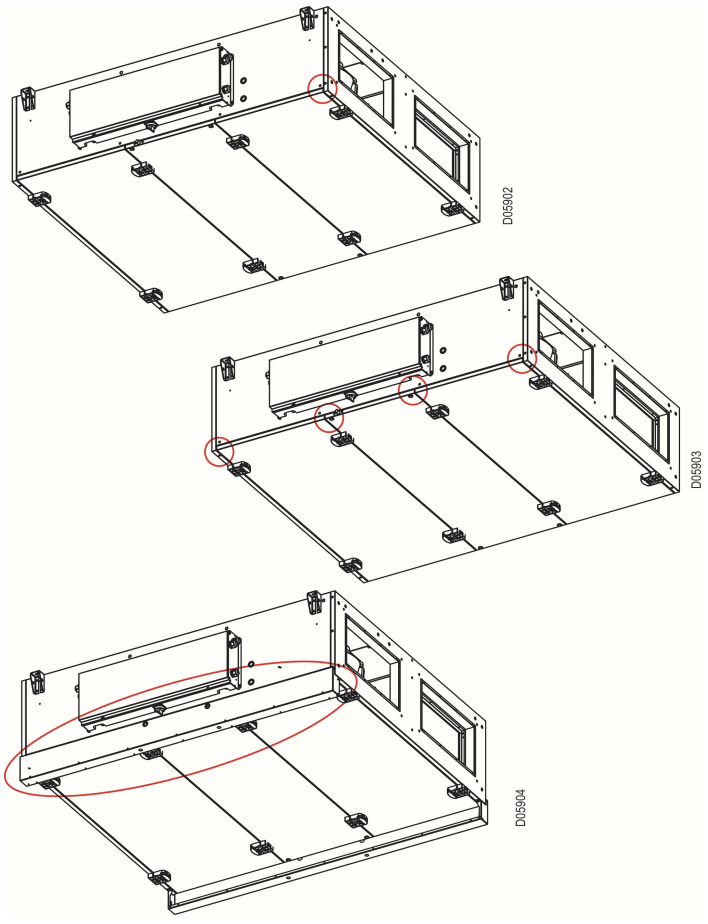


Sliding Rail Model	a	b	c	d	e	f
CX3010 Sliding Rail	152	27,5	1499	84	66	104.6
CX3020 Sliding Rail	152	27,5	1599	84	66	104.6
CX3030 Sliding Rail	152	27,5	1799	84	66	104.6
CX3040 Sliding Rail	152	27,5	1999	84	66	104.6
CX3050 Sliding Rail	152	27,5	2099	84	66	104.6
CX3060 Sliding Rail	152	27,5	2249	84	66	104.6

Sliding Rail Model	Total Weight
CX3010 Sliding Rail	10 kg
CX3020 Sliding Rail	11 kg
CX3030 Sliding Rail	12 kg
CX3040 Sliding Rail	13 kg
CX3050 Sliding Rail	19 kg
CX3060 Sliding Rail	20 kg

6.7.3 How to connect the sliding rails to the unit

Table 13

Step	Action	Figure
1	Switch off the power supplies to the unit & the electrical heater with the isolation switches. **NB:** Remember that there are two isolation switches to be switched off. One switch is present below the ventilation unit e-box & the other switch is on the electrical heater e-box.	
2	Open the sliding rails package.	
3	Remove the siphon connected to the condensation drainage pipe of the unit if it is assembled before the sliding rails are assembled to the unit.	 D05901
4	Dismount the bolts on the ventilation units. Place one sliding rail from the pair below the unit. Then, use the dismounted bolts to assemble the sliding rails to the unit.	 D05902 D05903 D05904
5	Reconnect the siphon to the unit through the coupling.	
6	Repeat the same steps with the other sliding rail pair for the opposite side of the ventilation unit. **NB:** There is only one coupling and one siphon used for the unit. Therefore, the steps are to be repeated for the opposite side of the ventilation unit except the assembly of the coupling & the siphon.	

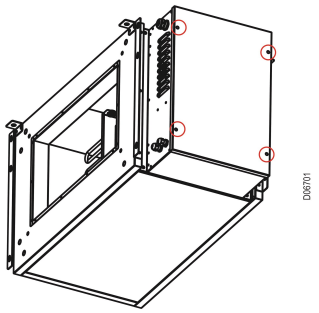
6.8 Extension E-Box

6.8.1 Extension E-Box, description

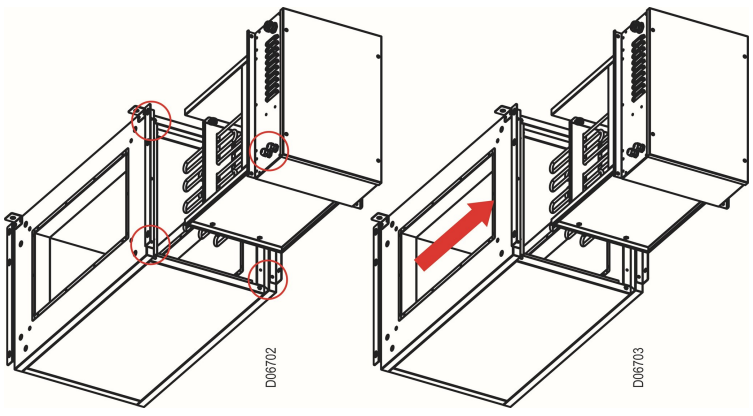
Pos.	Part	Function
1	Extension E-Box	Enables to connect the additional accessories to the unit e-box.

NB: For details, please check the configuration instructions.

6.8.2 How to service the electrical heater e-box

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch.	
2	Unscrew the 4 bolts on the e-box cover. Then, remove the cover to service.	

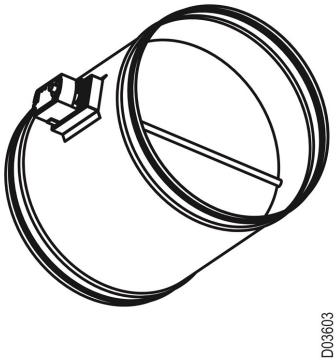
6.8.3 How to service the electrical heater resistances

Step	Action	Figure
1	Switch off the power supply to the unit by using the isolation switch. **NB:** If there is any electrical heater connected to the unit, switch off power to the electrical heater with the isolation switch on the heater.	
2	Unscrew the 4 bolts on the e-box cover. Then, remove the cover to service.	
3	Service the electrical heater resistances. **NB:** Cleaning can be done inside the electrical heater after the instructed part is removed.	

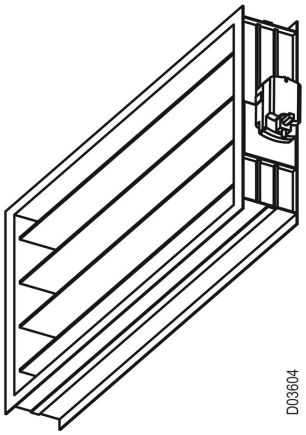
6.9 External/Duct Damper With Motor

6.9.1 External/Duct Damper With Motor

CX3010/CX3020



CX3030/CX3040/CX3050/CX3060



Pos.	Part	Function
1	Damper	Increases/Decreases the air flow inside the air duct.
2	Damper Actuator	Actuates the damper.

6.10 HMI cable

6.10.1 HMI Cable

Pos.	Part	Function
1	CX HMI Cable 25 m	Enables long distance usage of Control Panel.

7. EC Declaration of Conformity

7.1 EC Declaration of Conformity

See document no. 3006577, Declaration of Conformity. The document is supplied together with the other product documentation. It is also available on the EXHAUSTO website (search using document no.)

8. Ordering spare parts

8.1 Ordering spare parts

Find serial number

To be able to supply the correct spare part for the specific CX3000 unit, the serial number must be given when ordering the spare part. Always have the serial number ready when contacting EXHAUSTO A/S. The serial number can be found on the CX3000 information plate.

Contact:

Contact your local sales office to order a spare part. Contact information can be obtained by scanning the QR code on the back cover of these instructions. See also chapter 1 section "The CX3000 unit's design" for an overview of the position and designation of parts in the CX3000 unit.

Scan code and go to addresses at
www.exhausto.com

EXHAUSTO A/S
Odensevej 76 · DK-5550 Langeskov
Tel.: +45 65661234 · exhausto@exhausto.dk
www.exhausto.dk

a member of
Soler&Palau Ventilation Group

EXHAUSTO