



# Alfa Laval Arctigo ID

## Instruction manual



- Product description
- Product labels
- Unpacking & lifting
- Installation
- Maintenance
- Spare parts

ORIGINAL INSTRUCTIONS

AHE00054EN 1607



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# 1 Important information



## 1.1 Disclaimer

This Instruction Manual applies to all Alfa Laval Arctigo ID dual discharge industrial air cooler products and is supplied in combination with the Alfa Laval Air Cooler Product Manual AHE00042. Both manuals must be carefully examined and instructions should be followed up at all times. Alfa Laval does not accept liability for any damage resulting from non-compliance to the instructions as given in the manuals and order-related documents.

## 1.2 Intended use

Air coolers are partly completed machinery according to Machine Directive 2006/42/EC and are intended for incorporation in cooling systems. Declarations of Incorporation are available on [www.alfalaval.com](http://www.alfalaval.com). Air cooler units may not be put into operation until the conformity of the complete machine or cooling system has been declared according to the following standards and directives:

- Pressure Equipment Directive 2014/68/EU
- Machine Directive 2006/42/EC
- Low Voltage Directive 2014/35/EU
- Electrical Equipment of Machines IEC 60204-1
- Electro Magnetic Compatibility 2014/30/EU
- Any applicable local or national legislation

## 1.3 Where to find product information

Detailed technical data for individual product models are available in order related documents, on the product sticker and in product data sheets. Comprehensive technical information for all Alfa Laval air heat exchanger products is available on-line on [www.alfalaval.com](http://www.alfalaval.com). This includes:

- Product manuals
- Instruction manuals
- Product leaflets & brochures
- Product data sheets (selection software)
- Dimensional drawings
- Electrical wiring diagrams
- Certificates



Arctigo ID

Alfa Laval offers world-wide service and support in over 55 countries. In case of any questions or uncertainty please contact your local Alfa Laval representative. Contact addresses are available at [www.alfalaval.com](http://www.alfalaval.com).



## 2 Product description Arctigo ID

### 2.1 General information and application

Arctigo ID is a wide and flexible range of dual discharge industrial air coolers for both cooling and freezing applications in medium to large cold rooms. This industrial air cooler line is designed to keep fresh and frozen goods refrigerated from +20 to -35 °C, with either high or low humidity content.

The Alfa Laval Arctigo range offers a wide variety of cooler configurations and a long list of options, always allowing to select the best model to suit all applications in industrial cooling installations. Dedicated Arctigo ID models can be configured for sensitive applications such as agricultural storage.

- Refrigerants: all H(C)FC, ammonia, brine, CO<sub>2</sub>
- Capacities (SC2): 3 up to 110 kW
- Air volume: 4,000 up to 50,000 m<sup>3</sup>/h.

Refrigerant application	Design pressure
HFC	33 bar
Ammonia	27 bar
CO <sub>2</sub>	33-40-50-60 bar
Brine	10 bar

### 2.2 Standard configuration

- Finned coil:
  - 3 coil block modules
  - 3, 4, 6 or 8 tube rows deep
  - Tubing ø 5/8" Cu ripple fin, smooth Cu tubing for brine or smooth stainless steel.
  - Tube pitch 50 mm square.
  - Corrugated Alu-fins
  - Fin spacings 4, 5, 6, 7, 8, 10 and 12 mm.
- 1 to 5 AC or EC fans, ø 450, 500 & 630 mm, blowing through the coil. 2-Speed AC/EC fan motors 400/50-60/3 or EC 230/50-60/1.  
Fan motors with dynamically and statically balanced external rotors, protection grade IP54 or IP55. Integrated thermo contacts (Clickson) provide reliable protection against thermal overload.
- Corrosion resistant materials: coil frame and casing pre-galvanized sheet steel, epoxy coated RAL 9002.
- Hinged side panels and drip tray, drain(s) 1½" BSP external
- Fitted with schröder valve on the suction connection for testing purposes.
- Suitable for dry expansion or pumped system.
- Stickers indicate fan direction and refrigerant in/out.
- Each heat exchanger is leak tested with dry air and finally supplied with a dry air pre-charge.
- Delivery in mounting position. Coolers are mounted on wooden beams. Installation can take place with use of a forklift.



## 2.3 Options

- Defrost systems (incl. connection box for all electric defrost systems)
  - Electric defrost in drip tray (E1)
  - Electric defrost - heavy (E2)
  - Electric defrost - light (E4) Hotgas defrost systems
  - Hotgas defrost, not connected - light (HG1), heavy (HG2)
  - Hotgas defrost, connected - light (HG1C), heavy (HG2C)
  - Hot glycol defrost - light (HW1), heavy (HW2)
- Fan ring heater connected (FRH)
- Hinged fan plate (HF)
- Drip tray insulation 13 mm styropore + cladding (I2)
- Adapter 90° for horizontal drip tray drain connection
- Export packing crate
- Coil protection
  - Pre-coated aluminium (EP)
  - AlMg2.5 sea water resistant aluminium fins (SWR)
- Slip-on flanges aluminium PN16 or stainless steel PN (F)  
Flanges for brine models only
- Stainless steel casing and frame (SSC)
- Reheating coil (RH)  
Two additional tube rows with separated fins and connection tubes.  
Only for 3, 4 and 6 tube rows models.
- Switch on/off (SW)  
Switch for each fan.
- Fan motors wired to connection box (CB)
- Central internal connection box wired to a single external switch (CB1)
- On special request only:
  - Draw-through fans for blast freezing applications.
  - Top mounted fans

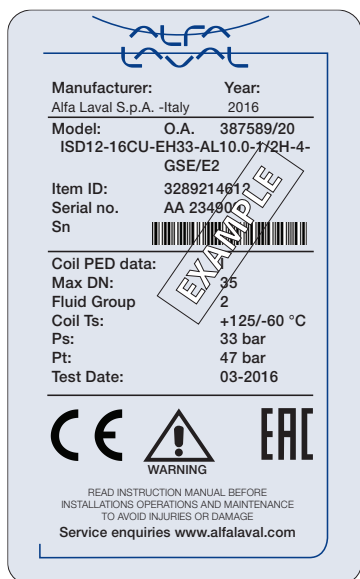
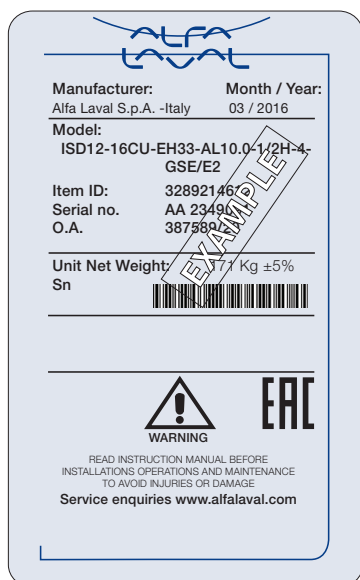
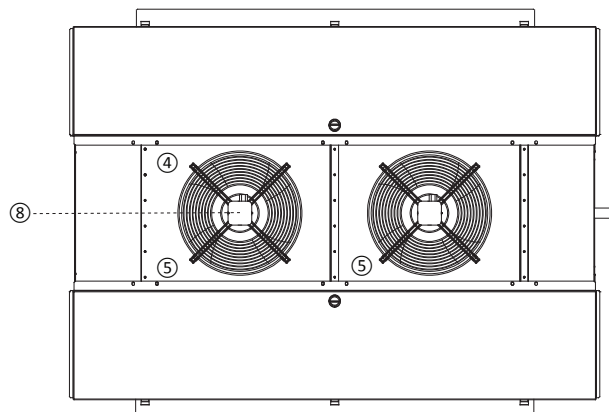
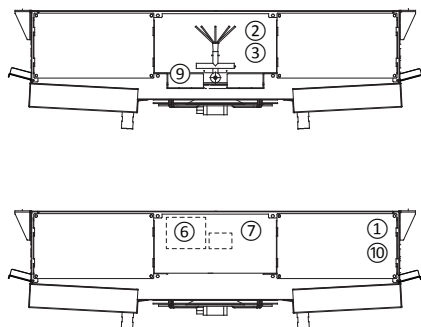
## 2.4 Code description

ID	B	3	5	-	2	8	CU	-	E	-	50	AL	-	7.0	-	2H-5	-	FA04A	-	D	FRH
1	2	3	4		5	6	7		8		9	10		11		12		13		14	15

- 1 Alfa Laval Arctigo industrial air cooler - dual discharge
- 2 Air direction (B=blow through, draw through execution (D) available on special request)
- 3 Cooler module size (1, 2, 3)
- 4 Number of fans (1 to 5)
- 5 Coil pitch (2=square)
- 6 Tube rows in air direction (3, 4, 6 or 8 rows)
- 7 Tube material (CU=copper, SS=stainless steel)
- 8 Refrigerant system (E=DX, W=brine, X=CO<sub>2</sub>, PB=pumped bottom feed, PT=pumped top feed)
- 9 Maximum working pressure
- 10 Fin material (AL=aluminium, EP=precoated aluminium, SWR=sea water resistant aluminium)
- 11 Fin spacing (4, 5, 6, 7, 8, 10 and 12 mm)
- 12 Circuiting code (2H, 1H, 1/2H ... 2D, 1D, 1/2D...)
- 13 Fan motor code
- 14 Fan connection
- 15 Option code



### 3 Product labels

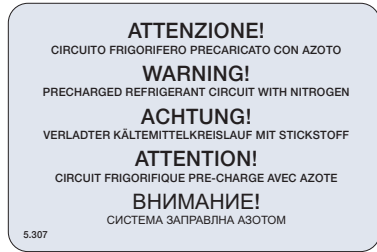


#### 1. Product label

Model	Refer to paragraph "2.4 Code description"
Item ID Serial no.	Communicate these when ordering spare parts as they identify the unit
O. A.	Order Acknowledgement number
Unit Net Weight	Check before any lifting operation to ensure that proper lifting tools are used

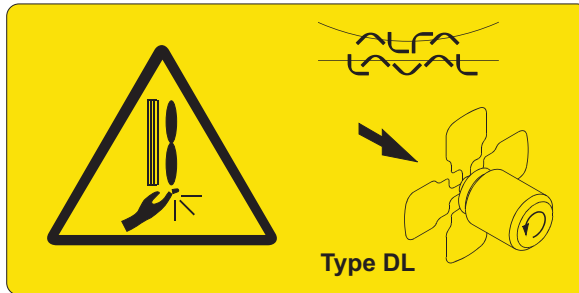
#### 2. Product label - coil

Model	Refer to paragraph "2.4 Code description"
Item ID Serial no.	Communicate these when ordering spare parts as they identify the unit
Max DN	Maximum diameter of the distributor tube
Fluid Group	According to PED
Coil Ts	Range of operating temperatures for the coil
Ps	Design pressure
Pt	Test pressure
Test date	Date on which the coil has been pressure tested in the factory



### 3. Nitrogen precharge warning

Heat exchanger coils are delivered from the manufacturer with an overpressure. Check pressure on the Schrader valve. Unpressurised units are to be reported immediately to manufacturer and noted as such on the bill of delivery.



### 4. Fan warning and fan type code

1st code position: airflow direction

B= blow-through

D= draw-through

2nd code position: rotation direction

L= left

R= right



### 5. Fan direction

Sticker indicates fan rotation direction.



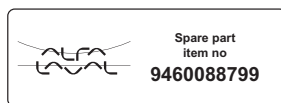
### 6. Electrical warning

Switch off power supply before any maintenance or installation operation.



### 7. Grounding

Mandatory grounding for all electrical components.



### 8. Fan motor

Fan motor item number



### 9. In/Out

Refrigerant connections inlet and outlet



### 10. Eurovent

Sticker is applied when the product is included in the Eurovent Certify All program.

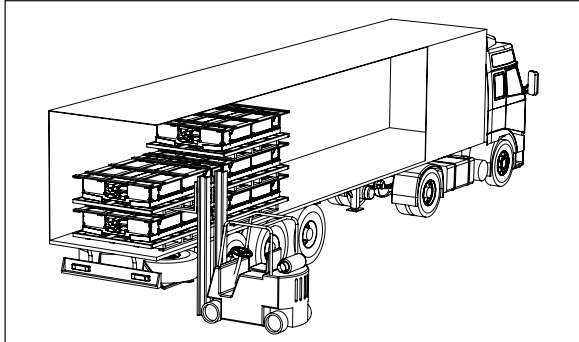
## 4 Unpacking and lifting



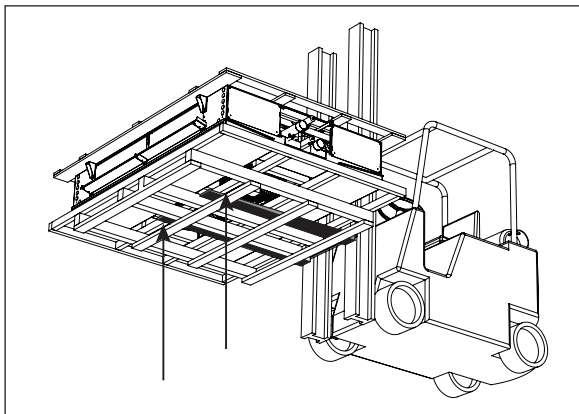
Always follow guidelines and instructions as given in the air cooler product manual AHE00042.



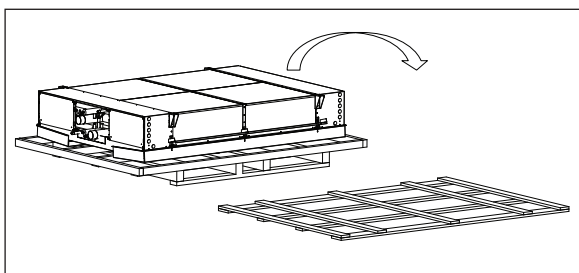
Arctigo ID air coolers are delivered in mounting position, mounted on wooden beams and a wooden pallet on top. Handling and positioning can take place with use of a forklift. When more than one cooler units are delivered in a single shipment, air coolers may be stacked during transportation. Arctigo ID air coolers are to be unloaded one by one and lifted according to the following procedure:



Units must be unloaded and handled only from the long side, one at a time.

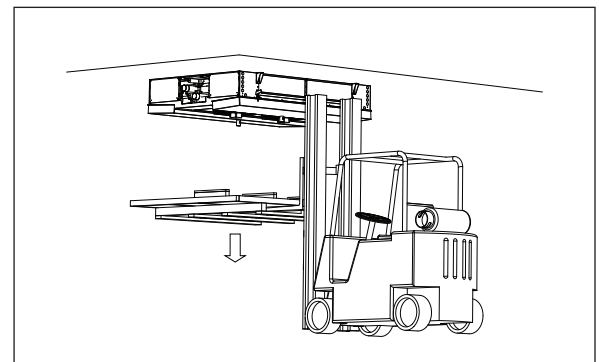
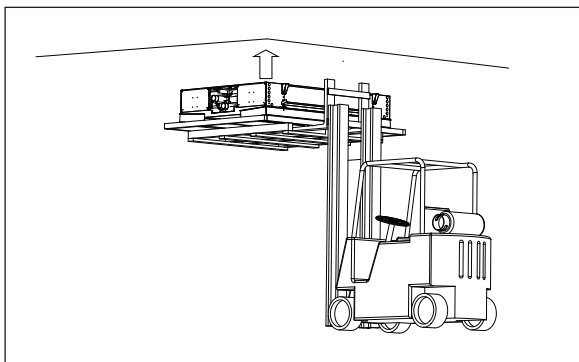


In order to avoid damage to the driptrays or falling of the unit, ensure that the lifting forks cover both inner support beams on the lower pallet.



Place the unit on the ground and loosen the fixing materials from the top pallet. Remove the top pallet. Lift the unit into mounting position and secure following instructions given in chapter "5 Installation".

Once the unit is secured in the installation position, loosen the fixing materials from the lower support pallet and remove pallet.







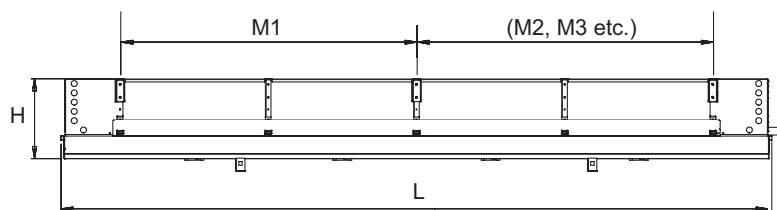
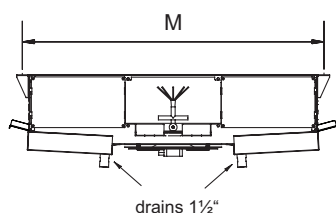
## 5 Installation



Always follow guidelines and instructions as given in the air cooler product manual AHE00042.

### 5.1 Mounting dimensions

cooler model	Dimensions (± 5 mm)							
	L	H	M	M1	M2	M3	M4	M5
ID 11	1438	432	1628	800	-	-	-	-
ID 12	2238	432	1628	1600	-	-	-	-
ID 13	3038	432	1628	2400	-	-	-	-
ID 14	3838	432	1628	1600	1600	-	-	-
ID 15	4638	432	1628	1600	800	1600	-	-
ID 21	1638	532	1628	1000	-	-	-	-
ID 22	2638	532	1628	2000	-	-	-	-
ID 23	3638	532	1628	3000	-	-	-	-
ID 24	4638	532	1628	2000	2000	-	-	-
ID 25	5638	532	1628	2000	1000	2000	-	-
ID 31	1838	532	1875	1200	-	-	-	-
ID 32	3038	532	1875	1200	1200	-	-	-
ID 33	4238	532	1875	1200	1200	1200	-	-
ID 34	5438	532	1875	1200	1200	1200	1200	-
ID 35	6638	532	1875	1200	1200	1200	1200	1200

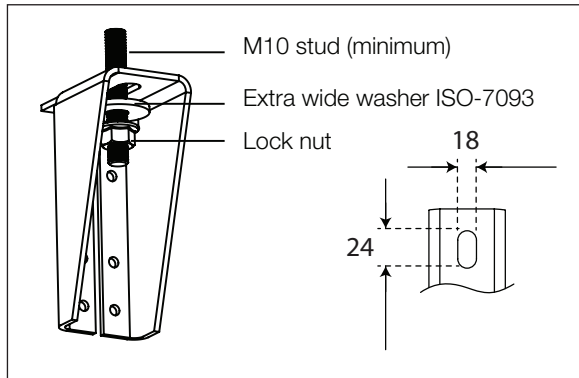


Detailed drawings showing all required mounting and refrigerant connection dimensions are available for download on [www.alfalaval.com](http://www.alfalaval.com).



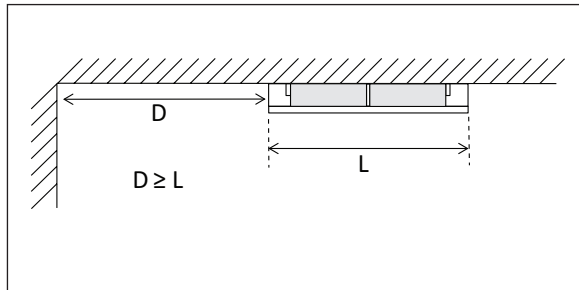
Dimensional drawings

## 5.2 Mounting bracket



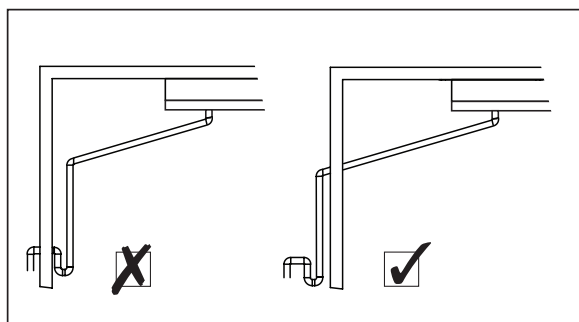
Use extra wide washer (ISO 7093) when mounting the unit to the ceiling. Avoid any lateral torque on the mounting brackets.

## 5.3 Technical spaces



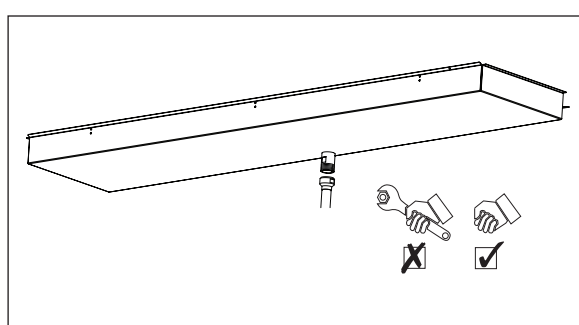
Respect the required minimum space for defrost heater replacement

## 5.4 Drip tray drain



The drain line diameter must be at least the size of the drip tray drain diameter and should be laid with an adequate slope. For room temperatures below 0° C drain line insulation and an internal or external heating element are required to prevent freezing .

A syphon must be installed on the drain line, outside the cold room



Tighten drain connection by hand only.



### 5.5 Electrical connections

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

- Cooler model indication
- Fan motor type
- Electrical options

Detailed Electrical connection diagrams are available for download on [www.alfalaval.com](http://www.alfalaval.com). When in doubt always contact your local supplier or Alfa Laval representative for assistance.



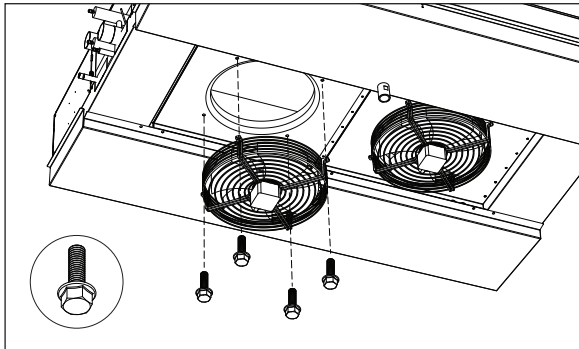
Electrical connections

## 6 Maintenance



Always follow guidelines and instructions as given in the air cooler product manual AHE00042.  
Always disconnect power supply before any maintenance activities take place.

### 6.1 Fan replacement

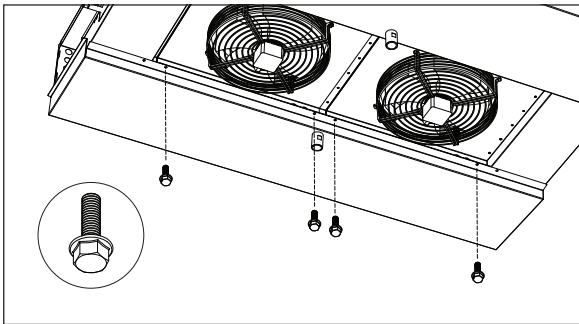


Always disconnect power supply before performing any maintenance activities on fans and fan motors.

Unscrew fixing bolts and remove old fan. Mount new fan in identical position. Use an anti corrosion compound when remounting the fixing bolts.

Restore electric connection when the new fan has been mounted.

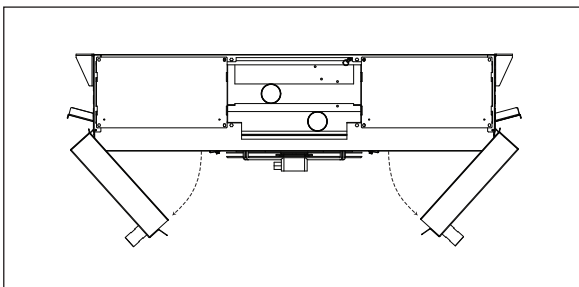
### 6.2 Drip tray



Drip trays can be opened for inspection, cleaning and maintenance purposes. Always disconnect drain line before opening the drip tray.

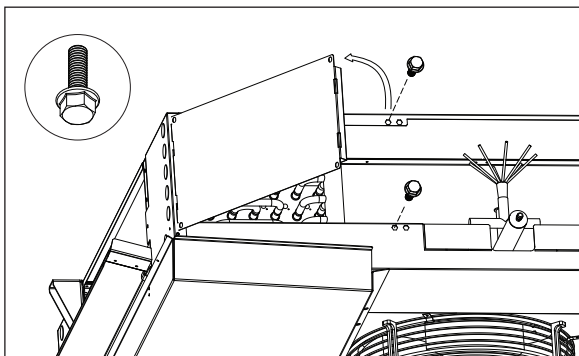
Prior to opening, run a full defrost cycle to remove any ice in the drip tray. Ensure the drip tray is empty before opening. The weight of any leftover water could injure the service operator if the drip tray fell open accidentally.

To open tray, first loosen and remove fixing bolts and then lower the drip tray.



Respect the maximum opening angle to avoid damage to the drip tray hinges.

### 6.3 Side covers

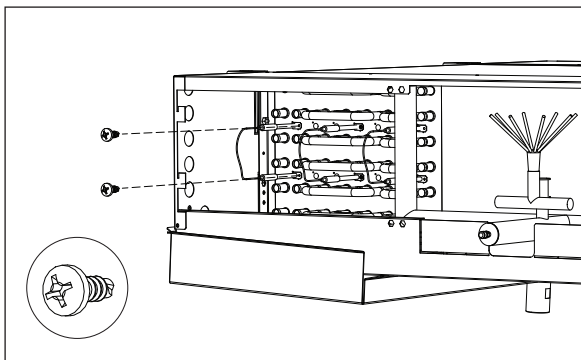


All side covers are hinged and can be opened for inspection, cleaning and maintenance purposes.

To open side covers, loosen fixing bolts.



## 6.4 Coil defrost element replacement

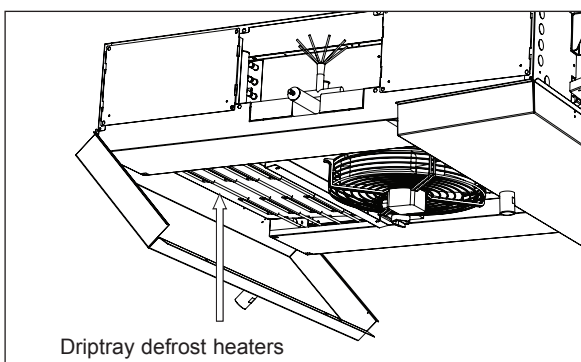


Always disconnect power supply before handling defrost heater elements. Attention: heater elements can be hot!

To remove a pair of coil heater elements, open side covers on both sides. Disconnect heater element, remove fixing screws and extract elements from coil. Mount new elements in reverse order, close side covers and restore electrical connections.

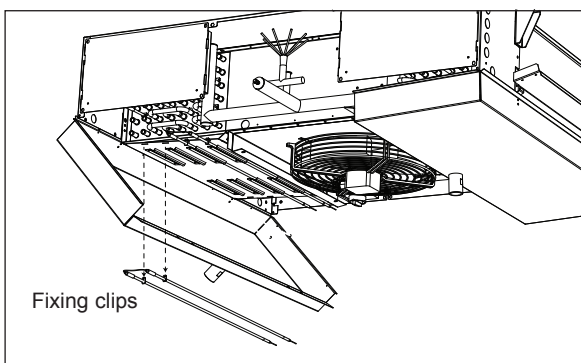


## 6.5 Driptray defrost element replacement



Always disconnect power supply before handling defrost heater elements. Attention: heater elements can be hot!

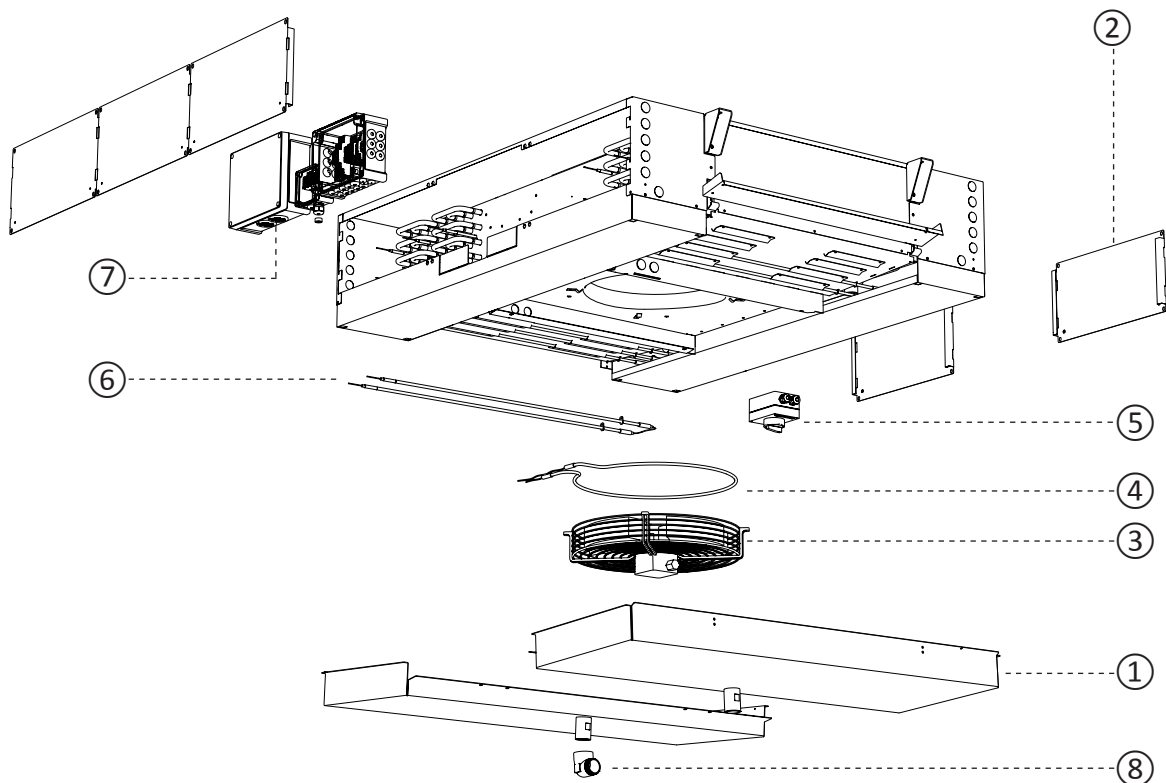
To remove driptray heater elements, open driptray.



Disconnect heater element. Bend slightly to take the fixing clips out of their slots and gently slide the heater element from under the clamps that hold it to the bottom plate.

Mount new element in reverse order, close driptray and restore electrical connections.

## 7 Spare parts



### Spare parts for Alfa Laval Arctigo ID

- |   |   |
|---|---|
| 1 | Drip tray (2 x identical)   |
| 2 | Side panels (5 x identical)   |
| 3 | Fan unit complete   |
| 4 | Fan ring heater   |
| 5 | Switch on/off   |
| 6 | Electrical defrost element (identical for coil and drip tray)         |
| 7 | Connection box  |
| 8 | Stainless steel adapter 90° for horizontal drip tray drain connection |

Spare parts can be selected and ordered in the online eBusiness tool Alfa Laval Anytime. If required please contact your local Alfa Laval representative for assistance.



Alfa Laval Anytime





[www.alfalaval.com](http://www.alfalaval.com)