# Air product news



## Mid year 2017

This newsletter is a sum up of what's new in this first half of 2017 for Alfa Laval air heat exchangers. News are organized by topic and product.

## 1 Refrigeration

#### 1.1 Arctigo range extension

Extended Arctigo range			
IS	8	single discharge general purpose	
ID	00	dual discharge gen- eral purpose	
LSV		low speed ven- tilation data center cooling	
ISF		agricultural stor- age	
HRCD	* 0°223	banana ripening	
IST		tunnel coolers	
IC		customized air cooler coils	

We are proud to announce a major platform extension for Arctigo industrial air coolers. We now present a dedicated tunnel cooler range and customized cooler coils.

The 'backbone' of Arctigo was formed by an extremely wide range of single (Arctigo IS) and dual discharge (Arctigo ID) general purpose coolers. Thor-D and Tyr-D are now no longer be available for Europe due to the full release of the Arctigo ID range.

Thor-D and Tyr-D will continue to be available for Asian market from Sarole factory.

These models were soon followed by dedicated ranges for banana ripening (Arctigo HRCD), Low Speed Ventilation datacenter cooling (Arctigo LSV), and most recently a product line for agricultural storage (Arctigo ISF). On top of that we have launched specialized tunnel coolers for **blast freezing** & cooling systems (Arctigo IST) and highly customized **industrial air cooler coils** (Arctigo IC).

Some Arctigo products/specific options require additional calculation tools and/or are not selectable in Alfa Select. This applies to the following models/options:

- Re-heating coils
- Hot glycol defrost
- Arctigo IC industrial cooler coils
- Arctigo IST tunnel coolers

Contact your Alfa Laval sales support for selection.

# 1.2 Improved performances for CO<sub>2</sub> air coolers in DX execution and gas coolers

This update is the result of a wide testing campaing in our laboratory, both on air coolers and on on gas coolers. Tests allowed our technicians to analyze and optimize the behaviour of our heat exchangers through the various operating conditions. Calculation formulas for Alfa Select Air have also been improved.

Below a brief summary of performance changes:

Gas cooler line	Capacity variation
Alfa-V VXD	+8÷10 %
AlfaBlue BX	+8÷10 %
AlfaBlue Junior XG	+8÷10 %



Air cooler line	Capacity variation SC2	
Optigo CSX	+2 %	+3 %
Optigo CDX	+0÷6 %	+7÷16 %
Optigo CCX	+10÷14 %	+14÷23 %

#### 1.3 Upgrade AlfaBlue Junior

We are pleased to announce a major upgrade for the commercial AlfaBlue Junior platform. This upgrade relates to all condenser, dry cooler and gas cooler models.

Platform changes:

- Fan motors 630 models wired in external beam.
- Frame & fastening materials for the Russian market in galvanized steel (SS for ROW)
- Default positioning switchboard fan speed control for vertical air flow installation. Protective cover included.
- EC single phase motors
- Adjusted sound levels for 500 & 630 models.
- Phase-out 400 models. Replaced with 350 models.

Condensers AlfaBlue Junior AG(H):

- Average +2% performance
- Reduced number of circuits + resized distributor tubes
- Overall price decrease for AGH models
- All new AlfaBlue AG(H) models will be marked with .2 in the code description and provided with new item numbers.

Dry coolers AlfaBlue Junior DG

• Design pressure raised from 6 to 10 bar





# 1.4 Protective film for stainless steel casing Arctigo

The plastic protective film for stainless steel casing material is no longer be removed in our factory. This applies to all Arctigo industrial air cooler models with stainless steel casing to prevent:

- Transport damages.
- Scratches, fingerprints etc. during installation on site.



The protective film should be removed by the customer after installation. Benefit for customers is the fact that the unit is protected against scratches and fingerprints during mounting and installation activities. So no cleaning & polishing required after installation!

#### 1.5 Improved mounting feet Arctigo IS

We are pleased to report a major improvement in the mounting feet design (option MF) for Arctigo IS industrial air coolers. The old design did not allow forklift handling of the unit without using a crane or the wooden support pallet. The new design shows vertically adjustable mounting feet in combination with heavy duty horizontal support profiles on all sides.



As a result Arctigo coolers can now be directly lifted and positioned with a forklift or manual lifting equipment. A huge benefit for our customers!

In addition, the new mounting feet shows much more stability during handling and transportation.

#### 1.6 Improved transport feet for Arctigo IS

As from week 7 improved transport feet will be supplied on all new orders for Arctigo IS industrial air coolers. The new transport feet design results in improved lateral stability, thus preventing transport damages even for long transports on rough roads.



#### 1.7 Arctigo IS improved electrical defrost

We have increased the specific defrost power (W/m<sup>2</sup>) on some air cooler models. Specific power has been increased and heaters configuration has been reviewed for all defrosting options (E1, E2, E4).

With the new design is now not anymore required nor suggested to connect the neutral wire for 400 V/3 ph/50 Hz units. The new design works in such a way that even when there is an unbalancement due to not-working elements there is no need for the neutral line to be connected, as indicated in the electrical drawing. Removing the need for the neutral line is a nice improvement for our customers: the cost for electrical installation is reduced due to one less wire and to the switch from 4-poles to 3-poles electrical line protections.

To avoid air cooler defrosting problems the following guidelines are to be respected:

- When there has been a build-up of excessive frost or ice for some reason, always make sure that each defrost cycle ends with a completely clean coil and driptray.
- Under heavy defrost conditions, always select the Heavy Defrost E2 option in CAS. Heavy Defrost E2 includes additional heater elements in the coil and in the driptray.
- The use of a shutup sock to enhance defrost efficiency is strongly advised under heavy conditions.



#### 1.8 Fan ring heater option (FRH) for Arctigo IS

Fan ring heater option (FRH) for Arctigo IS will now always be supplied connected, in line with what happens for Arctigo ID. When FRH option is selected all the heaters will be connected to a single connection box, with a quick disconnection device (see picture) on each of them. We always suggest to select also the fan connection box when fan ring heaters are selected: this makes it much easier for the contractor to install and wire the unit, for a limited extra cost.



#### 1.9 Optigo CC electrical defrost

We have revised the positioning of the heater elements (including fan ring heaters FRH) on Optigo CC units in order to improve the defrost efficiency and allow for shorter defrost cycles.

Under heavy defrost conditions, always select the Heavy Defrost E2 option. Heavy Defrost E2 includes:

- Additional heater elements in the coil.
- Double amount of heaters in driptray.

#### 1.10 Extension of Eurovent Certification

Alfa Laval Air Heat Exchangers have secured Eurovent certification for 2018. After accurate tests in third party laboratories Eurovent has confirmed once again that dry coolers, condensers and air coolers manufactured by Alfa Laval perform as specified on our software.

Alfa Laval can be considered a pioneer in Eurovent certification. Alfa Laval has taken part to Eurovent certification program since the early 2000s, with first diploma in 2001.

16 years of Certified Performance in a row make Alfa Laval a partner our customers can trust.

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Heat Exchangers for Refrigeration Condensers/DX Air Coolers/Dry Coolers from					
	ALF	A LAVAL CORPORATE AB			
	Located at Rudeboksvagen 1 SE 221 00 Lund, Sweden				
		Trade name			
		ALFA LAVAL			
	have been assessed according the requirements of following standard OM-2-2017				
	All products inside this defi	ned scope are certified according to "Certify-all" principle			
	The lis	t of certified products is displayed at :	-		
	http:	//www.eurovent-certification.com			
	A	LFA LAVAL CORPORATE AB			
	is authorised to use the EUROVENT CERTIFIED PERFORMANCE mark in accordance with the rules specified in the Operational Manual OM-2-2017				
	Erick MELQUIOND	Approval date : 2001/09/01			
	President	Re-checked on : 2017/06/15			
	Just	Valid until : 2018/07/31			
		Class service. Bool 6.3 - 2005			



# 2 Industrial cooling

#### 2.1 ASME Design

A new generation of Alfa Laval lube oil coolers, designed according ASME BPVC VIII and featuring the optional use of 'oil turbulators' are now available. Alfa Laval can now provide air heat exchanger equipment designed according ASME BPVC VIII and in conformity with PED 2014/68/EU, for customers interested in ASME design solutions without actual ASME certification (no UM/U stamp).

Two new product series for direct and indirect **turbine lube oil cooling** (models FBLMY & VDDMY) have been developed for the Power Market inside and outside Europe. The new lube oil coolers can be fitted with different header solutions to provide customers some alternatives in term of construction (tubular or box type) design pressure (available solutions ranging from 5.4 up to 10 barg) and inspection (dismountable header boxes).



All pressure bearing parts have been designed according ASME BPVC VIII (Div.1 or Div.2, based on the validation method applied to the solution) and with materials according to ASME II. In order to comply with PED 2014/68/EU Annex I, § 4.2.b, Particular Material Appraisals (PMA) of ASME materials have been done for each developed solution. Material certificates according EN 10204 type 3.1 are available for the main pressure bearing parts of the heat exchangers.

#### 2.2 Oil turbulators

Due to the high viscosity of the lube oil a laminar oil flow is likely to occur inside the cooler tubes for direct cooling applications. When this happens, a thin, relatively slow moving oil film occurs close to the tube surface. The remaining major part of the oil flows through the central section of the tube, too far away from the tube wall where the exchange of thermal energy should take place. Needless to say this phenomenon negatively affects the performance of the heat exchanger.

To boost the performance, twisted aluminum strips are inserted over the full length of the cooler tubes. These strips are referred to as 'oil turbulators' since the effect is to increase the turbulence of the oil flow, and hence the cooling capacity of the heat exchanger. Lab tests of tube-in-tube samples have been carried out with and without turbulators to measure the capacity improvement and develop a reliable calculation method. As a result, turbulator strips are now available.



**2.3 Upgrade AlfaBlue BO Transformer Oil Cooler** AlfaBlue BO air cooled oil cooler has been renewed and improved.

- New coil dimensions (BO\_S) has been added to make units more compact.
- IEC fan motors option has been added.
- C5M painting option has been added .
- Extended list of fan motors for different power supplies.
- DN 100 and DN 150 flanges are now available, to best suit oil pumps sizes available on the market.
- New design for mounting brackets facilitate installation on site.





#### 2.4 Extended fan motor solutions for FBL

Our heavy duty industrial radiators FBL are now available with  $\emptyset$  1.8 m fan package. This bigger fan diameter can be quoted as "standard solution".

#### 2.5 AlfaSolar SE update

Industrial dry coolers in reversed setup, designed for heavy industrial cooling applications in potentially explosive atmospheres for cooling of various process liquids. Now available with Atex certification for complete unit and ASME Design (as per FBL and Alfa-V at paragraph 2.1).

#### 2.6 Air streamer

The performance of heat exchangers can be influenced by external factors such as wind, layout, mounting height, piping, surrounding obstacles etc.

The outlet air profile can be easily improved by using Alfa Laval Air Streamer. The outlet air stream profile becomes narrower and the air velocity can be doubled compared to the standard solution. Thanks to our innovative solution the outlet air stream is having less turbulence and is guided away from the heat exchanger.

Features of Air Streamer:

- Quick and Simple installation
- Available for different fan diameters
- Suitable for retrofit installation
- Heavy duty industrial construction

Benefits of Air Streamer:

- Prevents hot air recirculation
- Leads noise from the fans higher
- Reduces turbulence of the fans
- Stabilizes the cooler performance



# 3 Electrical options & controls

#### 3.1 ECCB option released

ECCB is a basic switchboard for EC fans, equipped with circuit breakers and terminals for input signal (analog or Modbus) and fan alarm. Available for AlfaBlue BD, AlfaBlue BC, AlfaBlue BX, Alfa-V VDD, Alfa-V ACV, Alfa-V ANV and Alfa-V VXD. ECCB+ Master Control is the coupling of ECCB with PTec Master Controller. PTec is a probe signal converter. The temperature (dry coolers), pressure (condensers) or external 4-20 mA (all applications) signal is converted to 0-10 V and drives the EC fans.

#### 3.2 New spray water system for Alfa-V

The new Alfa Laval SWS is a full spray water system, including pump and electrical cabinet, for air cooled condensers and liquid coolers. Air heat exchangers are normally selected to accomplish performance requirements in the hot season peaks. As a consequence, units are often oversized and thus more expensive. In such cases a spray water system can help in selecting correctly sized units. Benefits of increased global energy efficiency, sound reduction etc are now combined in a simple Alfa Laval solution.





## 4 Tools

#### 4.1 Spart parts finder

To facilitate spare parts selection, a new tool called "AHE Spare Parts Finder" has been published on Anytime. This tool will help you in finding items codes, prices and relevant specs for AHE spare parts products as well as stock location and delivery



details. The tool lists spare parts and kits for all current and phased-out products from all AHE sites. Alfa Laval guarantees spare part availability for a 10 year period (and much more in some cases).

#### 4.2 Cold room calculator App

Our popular Cold Room Calculator mobile app (over 10,000 active downloads!) has been updated to the latest iOS & Android versions.



For making cold room calculations refrigeration installers can rely on experience based and widely used 'rules of thumb' : 15-20 watt/m3 for a large frozen storage room, 60-70 watt/m3 for a fresh fruit cooling room, etc. Convenient, quick, but not very accurate. A more accurate method is a detailed cold room calculation using refined calculation formulas in combination with product data tables. This can be done manually or using commercial cold room calculation software. This is relatively time consuming, a computer is required and in addition the software is not for free. And if for instance the room door remains open a little longer than planned, so much for calculation accuracy...

Quick & easy: to offer a convenient intermediate solution, Alfa Laval offers a quick & easy cold room calculation module in the selection software for Alfa Laval heat exchangers. This non-academic software enabled customers to make quick and reliable 'stand alone' calculations for a cold/freezing rooms.

With mobile technology rapidly developing, Alfa Laval decided to translate the existing cold room calculation software into a mobile App for smartphones and tablets. This App is available for free in both Apple & Google app stores. The Alfa Laval Cold Room Calculator turned out to be a very easy-to-use tool with many thousands of satisfied users all over the world. The functionality is fully based on the Alfa Laval heat exchanger selection software. The App quickly calculates a reliable cooling capacity for any cold or freezing room.

App name	Alfa Laval Cold Room Calculator
Platform	iOS & Android
Languages	Arabic, Bulgarian, Chinese, Danish, Dutch, English, Finnish, French, German, Italian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbian, Slovenian, Spanish, Swedish, Turkish

#### 4.3 Air cooled gas coolers in Alice

We are happy to report that CO<sub>2</sub> gas coolers have been released in Alice, the online product configurator which is part of our Anytime ebusiness platform. Alice offers both thermal and mechanical configuration for the following gas cooler product lines:

- AlfaBlue Junior XG (commercial range)
- AlfaBlue BX (industrial range)
- AlfaBlue VXM (commercial V-type)
- AlfaBlue VXD (industrial V-type)

With this extension, Anytime now offers the full portfolio of commercial air heat exchangers for HVAC & REF applications.

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