TRANSAIRVAC INTERNATIONAL LTD

Hydraulic Coolers, Pressure Line Filters, Air & Gas Compressors / Vacuum Pumps / Blowers / Booster Packages and Rotary Lobe Pumps for Transport and Industry.

"AAC15.E.12/24 After air cooler"

Pressure line cooler matrix for use with pneumatic conveying of bulk product from silo tankers , containers with rotary valves and other specialist application where low temperature conveying air required.

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Part number

(AAC15E/12 or 24)

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Contents

1 HEALTH AND SAFETY (GENERAL)

This product is for use in pressurised systems so which are potentially dangerous if items of equipment are not properly operated and maintained. It is imperative that all users of such equipment fully educate themselves as to the potential dangers and satisfy themselves that the personnel responsible for installing, testing, commissioning, operating and maintaining the machinery are competent to do so.
The main directive for this is the Pressure safety system regulation 2000 PSSR .
Instruction manuals are provided for guidance but must assume some basic level of competence by user staff. In these operating instructions safety measures are advised before each step. It is imperative that these safety precautions are observed. If there are any doubts concerning correct procedures, ask Transairvac International Ltd, who will be pleased to advise,
DO NOT TAKE RISKS.

2 Technical Data for AAC15 pressure line after air cooler matrix

AAC 15 (electric fan)
Aluminium Intercooler 24v suction

Dimensions & Features

Height Element:	**490**	mm
Width element:	**486**	mm
Thickness:	**113**	mm
Passage number:	**1**	
Tube number:	**27**	
Tubes pitch:	**18**	mm
Frontal area:	**0.24**	m2
content:	**16.63**	litre
Maximum working pressure:	**10**	bar
Test Pressure:	**13**	bar
Maximum working temperature:	**200**	Centigrade

Technical Data(process air)

Cooling Power:	**14.4**	kw
Flow:	**15**	m3/min
Inlet temperature:	**100**	Centigrade
Outlet temperature:	**43**	Centigrade
Pressure drop:	**200**	mbarg
Medium viscosity:	**0.02**	cst
Specific heat:	**0.24**	Kcal/kg **C
Specific weight:	**1.2x2.5=3**	Kg/m3
Conducibility:	**0.03**	Kcal/kg *C
Passage surface:	**137.03**	cm2
Velocity:	**18.2**	m/s

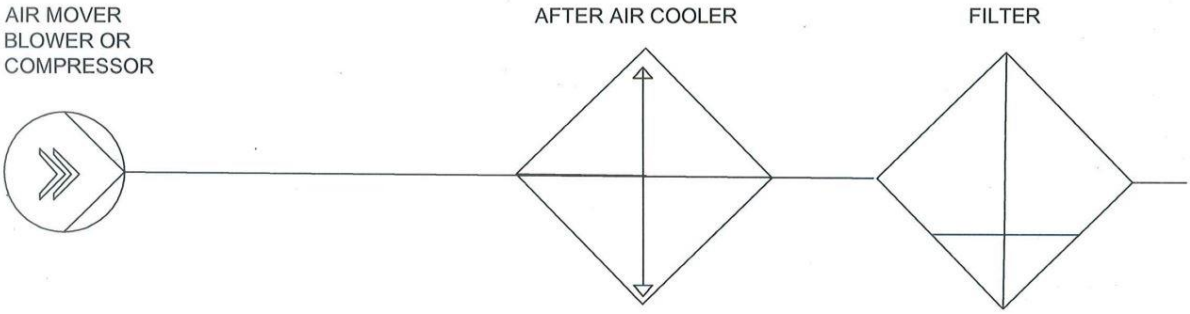
Fan Data (cooling air)

Type:	**D.385mm, 24v, 0.21kw**	
Fan speed:	**2500**	rpm
Total air flow:	**2500**	m3/h
Air flow each side:	**2500**	m3/h
Inlet temperature:	**25**	Centigrade
Outlet temperature:	**42.9**	Centigrade
Static pressure:	**120**	Pa
Viscosity @ 40 C:	**0.02**	cst
Specific heat:	**0.23**	Kcal/kg **C
Specific Weight:	**1.2**	Kg/m3
Conducibility:	**0.02**	Kcal/kg *C
Passage surface:	**0.14**	m2
Velocity:	**5.1**	m/s

3 APPLICATION AND INSTALLATION

The cooler matrix is fitted in the air discharge line from the compressor or blower .
It is to cool down /remove heat from elevated air temp from the pressure /flow generator blower/compressor due to the compressive process .
Some bulk products are very temperature sensitive so the conveying air needs to be below a temp which may affect these products .
Air blast coolers like this can normally achieve a maximum cooling of 15C to 20C above ambient as the lowest temperature .
The air blast cooler is a simple and effective product.(Heat exchanger)
The pipe work should be fully supported and no strain should be placed on the flanges.
Fitting can be in any orientation to suit application.
Flow can be in either direction and the fan is a blowing type fan to ensure the cooler matrix receives ambient air for maximum cooling .

Schematic system of position of pressure line after air cooler .



Tipping Tanker(Silo)

Tipping container with rotary valve for intermodal transportation

4. Maintenance

Before commencing any maintenance, servicing or making other adjustments, the prime mover and other equipment must be isolated to prevent accidental start-up and the system de-pressurised to atmospheric pressure.

Very little maintenance is required only potentially to clean a blocked matrix fins or to replace the fan .

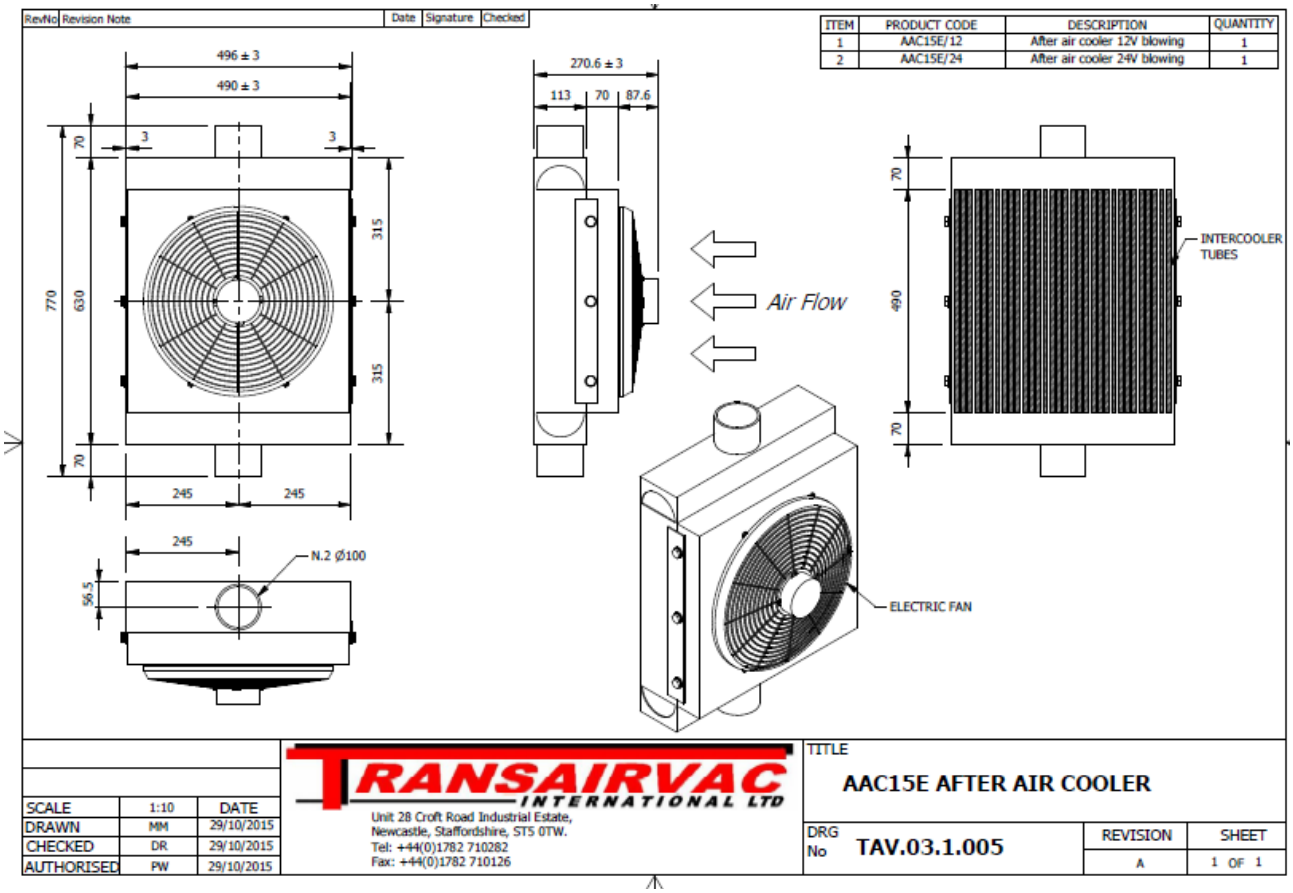
5 CLEANING INSTRUCTIONS

Cleaning of the cooler matrix .(decided by visual inspection)

This can be done with jet wash or compressed air line to remove dirt build up in the core/matrix of the cooler .

It is better to remove the fan to save blowing/pushing all the dirt/debris on the cooling fan and will give better access to clean the back of the matrix.

6. DIMENSIONAL DRAWING



7. UK & EU DECLARATIONS OF INCORPORATION

EU DECLARATION OF INCORPORATION

We, Transairvac International Ltd, located at Unit 28 Croft Road Industrial Estate, Croft Road, Newcastle, Staffordshire, ST5 0TW, United Kingdom declare:

- In exclusive responsibility that the AAC meets the essential health and safety requirements of the directive(s) detailed below.
- This partly completed machinery must not be out into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this directive, where appropriate.
- The relevant technical documentation is compiled in accordance with Annex VII part B and, where appropriate, a sentence declaring the conformity of the partly completed machinery with other relevant Directives.
- We undertake to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery.

Directive	Requirements and / or Standards applied
Machinery Directive 2006/42/EC	EN 60204-1: 2018
Pressure Equipment Directive 2014/68/EU	Group II Gases, Article 4, Para 3 Category SEP, Pipeline accessories
Electromagnetic Compatibility Directive 2014/30/EU	ECE UN Regulation 10 E Marking

Product type	After air cooler in compressed air line
Part number	AAC15 / E /12 / 24
Manufacturer's representative	Transairvac International Limited
Flow	1000 m3/hr of air
Pressure	10 bar
Temperature	200°C max incoming , working ambient 40°C
Drive method	12 or 24 volt DC electric motor for fan
Specification	Aluminium construction of heat exchanger
Application	To cool compressed air for process
Marketplace	Transportation of bulk material

TCF reference no: TCF2023/AAC

Name: Mitchell Hill, BEng

Date: 30th September 2024

Title: Technical Director

Signature: M. Hill

UK DECLARATION OF INCORPORATION

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Directive	Requirements and / or Standards applied
Supply of Machinery (Safety) Regulations 2008	BS EN 60204-1: 2018
Pressure Equipment (Safety) Regulations S.I. 2016:1105	Sound Engineering Principles Cat 1, Module
Electromagnetic Compatibility Regulations S.I. 2016 :1091	UN Regulation 10 E marking

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