



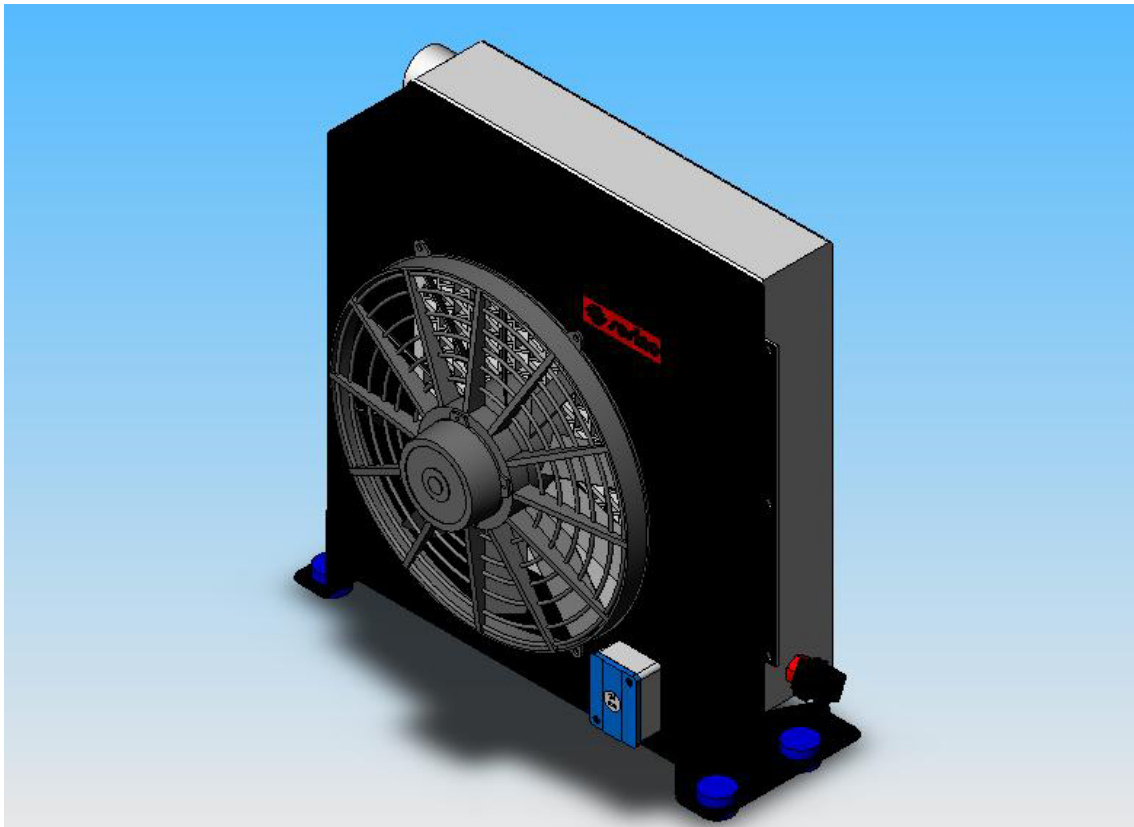
HEAT EXCHANGING EXCELLENCE SINCE 1919

# USE AND MAINTENANCE MANUAL

## Air-oil series APL Heat exchanger

### DC fan motor

*APL 170 – 240 – 263 – 300 – 300/2 – 430 – 430/2 – 494 – 580 –  
2/463 – 2/494 – 2/580*



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## 1. INTRODUCTION

This manual should be considered an integral part of the heat exchanger and should be kept with it.

Keep this manual intact and available for the whole product life.

Carefully read the manual before installation of the heat exchanger.

The manual contains important information about safety.

## 2. WARNINGS



- a) Before carrying out any kind of maintenance or cleaning operation, disconnect the electricity supply of the equipment.



- b) The heat exchanger has to be used only for that which it was designed. Any other use may cause damage to property and people, and therefore the manufacturer declines all responsibility for accidents arising from its misuse.



- c) Before connecting, the electricity supplies please check that:
- the electrical system is in conformity with the current legislation;
  - the voltage and the frequency correspond to what shown over the equipment's label;
  - the circuit has the earthing system.



- d) After having installed the exchanger please run a trial in order to test the proper installation and functioning.

In case of negative results disconnect the heat exchanger from the current and contact the present writer for the appropriate assistance operations.

**DO NOT TRY TO REPAIR THE EQUIPMENT WITHOUT THE PREVIOUS ASSISTANCE OF THE PRODUCER.**



- e) Do not touch the heat exchanger while functioning. During the cooling process, some of the external surfaces could be very warm.



- f) Do not remove the nameplate of the heat exchanger. It reports the product specifications and contractual references that allow the traceability of the same. It is considered an integral part of the heat exchanger and should remain clearly visible on it.

### **3. ASSEMBLY AND INSTALLATION**

Air-oil heat exchangers are generally installed in the return circuit.

It is also possible to realize a separate circuit with an autonomous pump and this is advisable when the oil flows at the drainpipe are very changeable. In this way, it is possible to obtain a better heating performance.

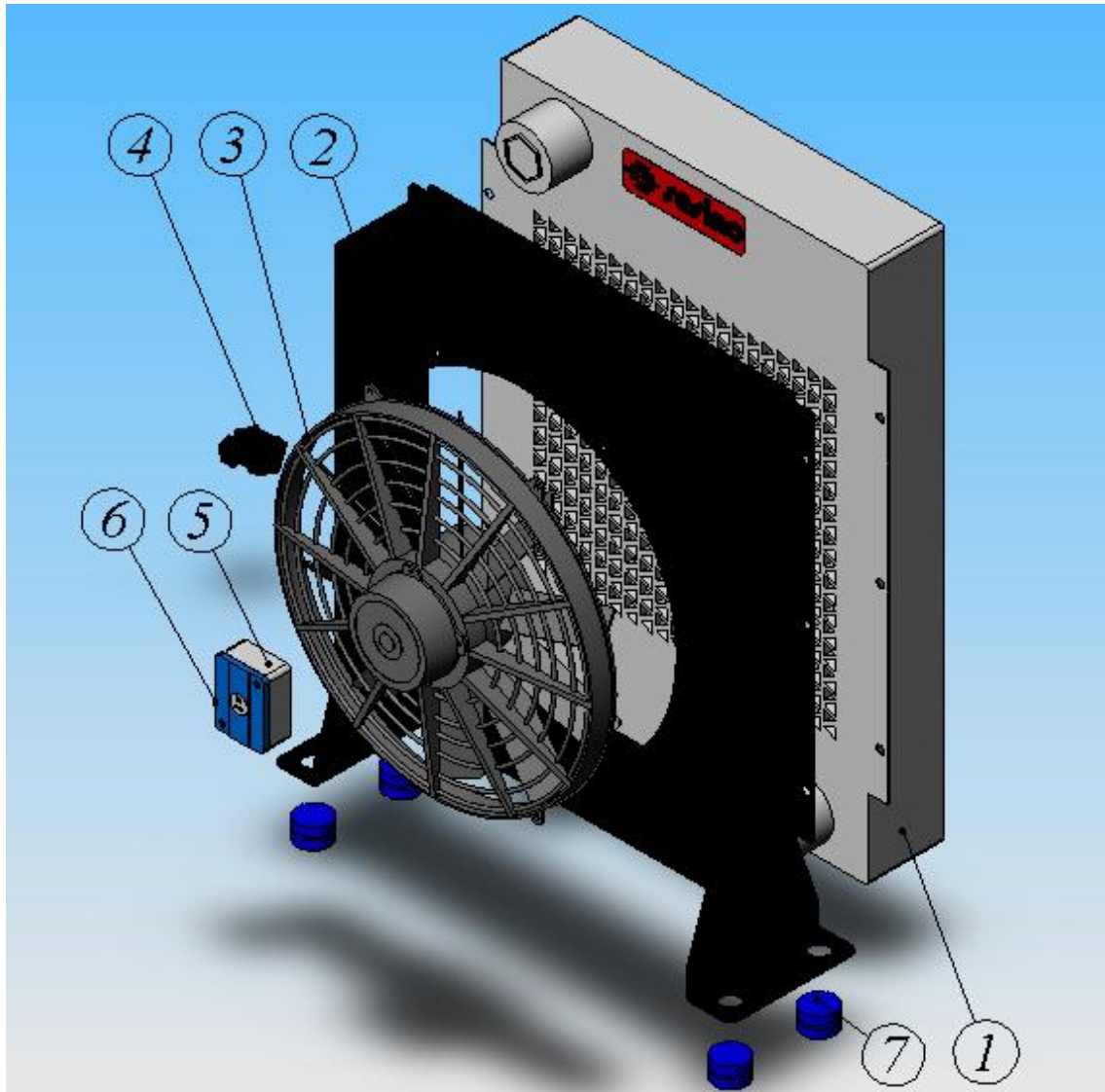
The oil joints must be connected so that the inlet tube is positioned lower than the exit tube. Moreover, the tubes themselves do not have to show reductions compared with the connections of the cooling element.

In order to warrant the right heating performance please pay attention to the positioning of the heat exchanger, observing the minimum distance from obstacles on both the front and backside of the cooling element.

Normally this distance do not have to be less than the half of the electric fan diameter.

Make sure that the heat exchanger is installed on bearings suitable for its weight.

#### 4. AIR-OIL HEAT EXCHANGER SCHEME



- 1) Radiator core
- 2) Frame
- 3) Electric fan 12/24 Vcc
- 4) Thermoswitch
- 5) Box with electric connections
- 6) Relay 12/24 Vcc
- 7) Shock absorbers

## 5. TECHNICAL SPECIFICATIONS OF USE

- Hot fluid inlet max. temperature: 120°C
- Max. ambient temperature: 50°C
- Operating fluids: Mineral oil  
Synthetic oil  
Emulsified water  
Water-ethylene glycol
- Maximum allowable operating pressure: 20 bar

**N.B.:** please contact our Technical Department in case of special applications.

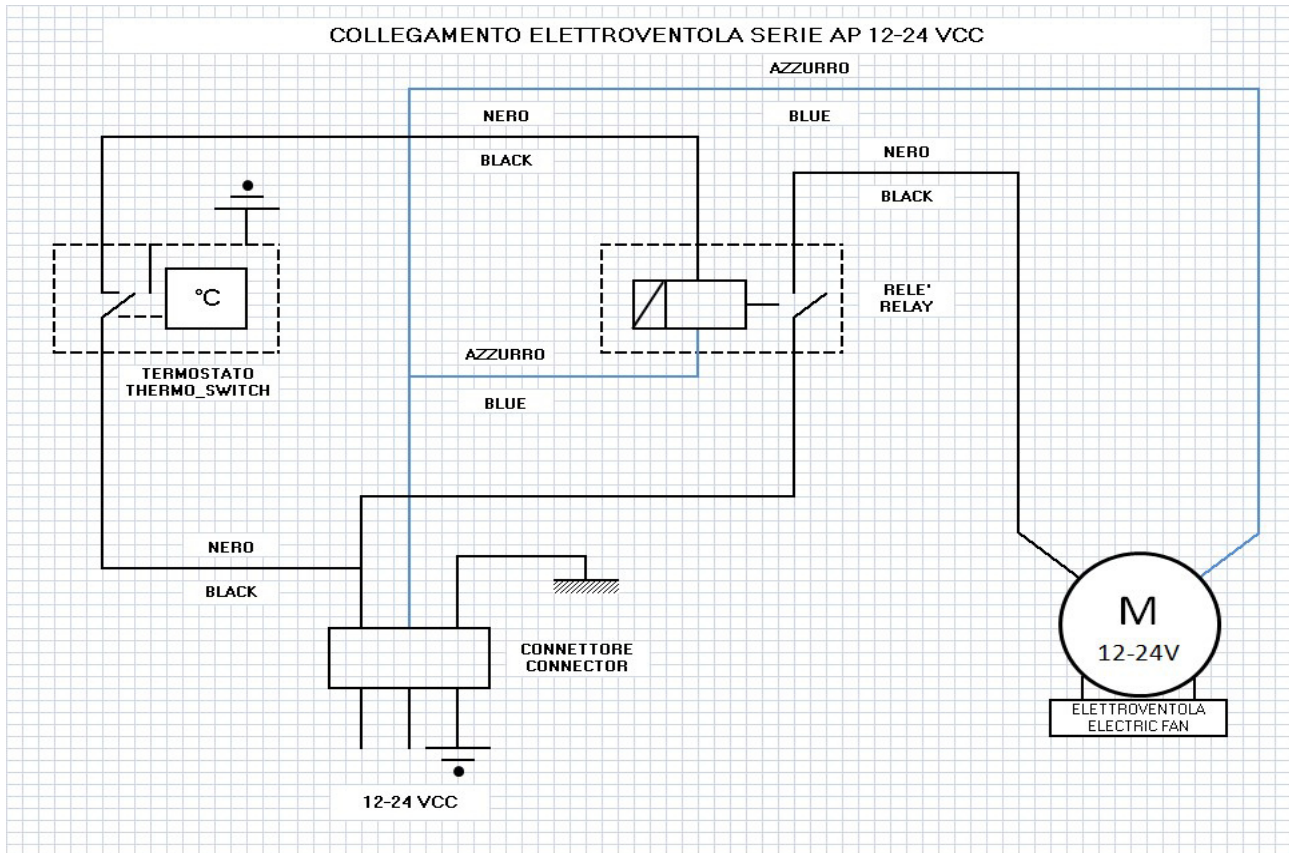
In hydraulic circuits, it can occur some pressure peaks that could near or exceed the maximum admissible heat exchanger's pressure. In any case, the particular conformation of the cooling element allows us to obtain remarkable heating performances and high-pressure resistance.

**Warning:** These pulsations move inside the oil at the sound velocity, therefore they cannot be gauged with standard manometers, but only with a proper electronic instrumentation.

The maximum static pressure allowed by Sesino heat exchangers is 20 bar and the test pressure is 35 bar.

It is always advisable to install parallel to the heat exchanger a by-pass valve in order to avoid extreme backpressures, most of all during the start process of the machine with cool oil.

The electrical system must be in keeping with what shown on the following schemes:



## 6. CHECK AFTER INSTALLATION

Once having installed the heat exchanger it is better to do a general check on it. Therefore, it is advisable to bring the system in pressure to test possible oil leaks from the connectors or from the sealing surfaces. Check also the correct electric fan rotation, observing its rotation direction in relation to the instructions of the heat exchanger's label.

## 7. PERIODIC MAINTENANCE

***Before carrying out any kind of maintenance or cleaning operation, disconnect the electricity supply of the equipment.***

### 7.1. Oil side cleaning

For this kind of cleaning, the heat exchanger must be disconnected from the operating machine on which it is installed.

Once on the floor, in order to remove the dirt from inside the heat exchanger, it is necessary to pass around it a detergent that is compatible with aluminum. Circulate the cleaner from 10 to 30 minutes in the direction opposite to the usual working one.

After this process, the detergent liquid remains inside the exchanger so you have to discharge it through the circulation of warm water.

Before connecting the exchanger to the circuit, make sure that all the dirt and detergent leftovers had been removed.

While carrying this process Costante Sesino S.p.A urges you to respect the anti-pollution regulation and to use the proper services for the exhaust oils disposal.

## **7.2. Air side cleaning**

In order to ensure a long lasting functionality of the thermal efficiency of the equipment, it is necessary the radiator core to be free from hindrances that could limit the active surface of heat exchange.

In order to respect this prescription it is enough to blow with compressed air on the exchanger surface, in parallel with the radiator core.

**Warning:** during this process be careful not to exceed the air pressure over 6-8 bar.

In case of dusty or humid environments or places, it could be necessary to use detergent products before blowing on the surface, in order to remove dirt deposits from the heat exchanger.

**Warning:** the use of detergents that are not compatible with the heat exchanger surface could cause damages to things and people as well as compromise the proper use of the exchanger.

## **8. TAMPERING**

Any operation aimed to modify the heat exchanger, executed without prior authorization from the Costante Sesino S.p.A. will automatically result in the decline of the warranty provisions.

## **9. STORAGE**

The heat exchanger has to be stored in a moisture free environment (<60%) and at a temperature (from 5°C to 30°C) such as to prevent condensation and oxidation to its internal parts.



## **10. DISPOSAL**

The Costante Sesino S.p.A. heat exchangers are manufactured with fully recyclable materials.

Therefore they are disposable without any harm to the environment according to the rules and regulations in the area of use.