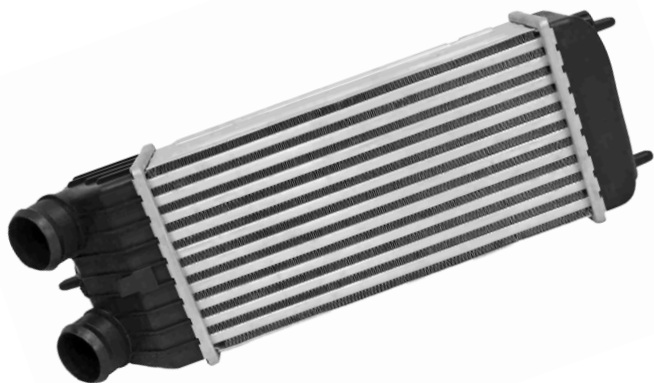




FOCUS

Charge Air Coolers



Our Premium Quality

A superior quality range, guaranteed by direct control of the entire process.

Design and production are supervised by the Group's engineers, in compliance with the original equipment specifications. Subsequently, each component undergoes end-of-line validation testing by the Quality team, with the aim of offering a product that always stands out for its quality, reliability, and durability.



Design



Fleet Coverage



Testing



After-Sales Support

What is it?

The charge air cooler is a **heat exchanger** used in forced-induction engines (turbocharged or supercharged).

Its function is **to cool the compressed air** coming from the turbocharger before it enters the intake manifold.





By cooling the air:

Air density increases

Cylinder filling improves

Power and efficiency increase

The risk of detonation is reduced

Oxygen content increases



Result: **more power, better efficiency, and less stress on the engine.**

How does it work?

- 1 The turbocharger compresses the air.
- 2 Compression causes an increase in temperature.
- 3 The hot air enters the intercooler.
- 4 The heat exchanger dissipates heat to:
 - **Outside air** (air-to-air air change cooler)
 - **Coolant** (air-to-water air change cooler)
- 5 Cooler, denser air enters the engine.

Main types

Air-to-air

(most common, simpler)

- Cooled by outside air
- Simpler and more reliable
- Widely used in production vehicles

Air-to-water

(more efficient and complex)

- Uses a water circuit
- More compact and efficient
- More expensive and complex

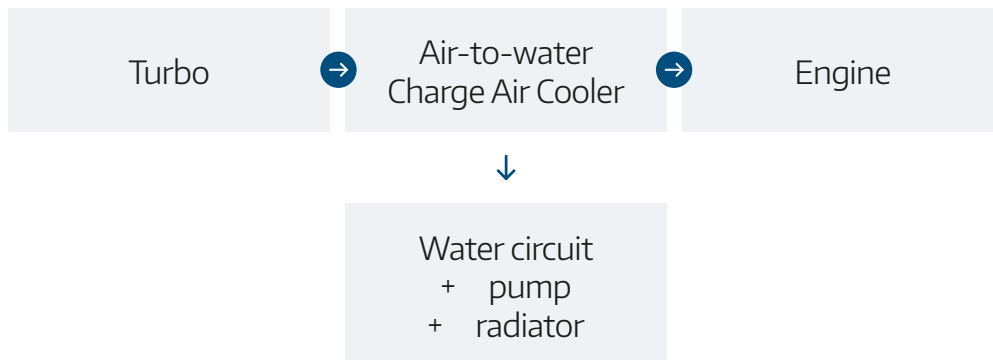
In the vehicle (simplified system)

Air-to-air Charge Air Coolers



External cooling air

Air-to-water Charge Air Coolers



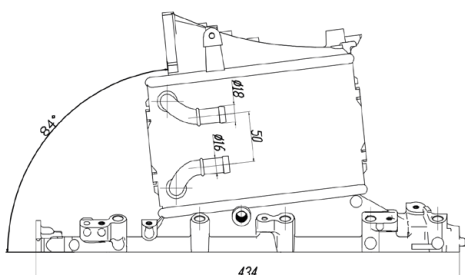
Main components

Finned core

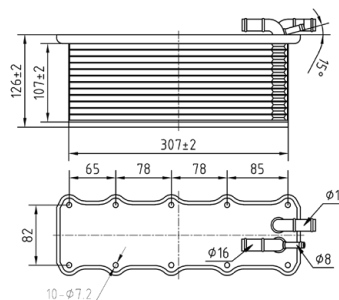
Inlet/outlet ducts

Hoses

Temperature/pressure sensors



Meat&Doria **995082**
Hoffer Products **995082**



Meat&Doria **995084**
Hoffer Products **995084**

Maintenance and recommended checks

The air change cooler does not require scheduled maintenance, but periodic checks are recommended, such as:

Checking for **air leaks** from hoses

Check for **oil** inside

Visual inspection for **cracks**, **dents**, or **fins** clogged by mud or insects

Cleaning can be **external** - using compressed air or specific detergents; or **internal** (if the charge air cooler is heavily contaminated) - by removing the component and washing it with dedicated products.



Error codes (most common OBD)

Codes vary by manufacturer, but the most frequent are:

Code	Description
P0299	Insufficient turbo pressure
P0234	Turbo overboost
P0101/P0102	Abnormal air flow (MAF)
P0110/P0113	Intake air temperature sensor
P2263	Turbo system performance

Related products

Turbocharger



Meat&Doria **65001**
Hoffer Products **6900001**

Air hoses and pipes



Meat&Doria **96007**
Hoffer Products **96007**

Wastegate valve



Meat&Doria **64052**
Hoffer Products **6700052**

Pop-off / bypass valve



Meat&Doria **9287**
Hoffer Products **8029287**

MAP sensor



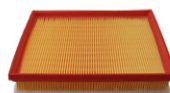
Meat&Doria **82394**
Hoffer Products **7472394**

IAT sensor



Meat&Doria **82458**
Hoffer Products **7472458**

Air filter



Meat&Doria **18675**
Hoffer Products **18675**

EGR (direct influence)



Meat&Doria **88416**
Hoffer Products **7518416**

Heat exchangers



Meat&Doria **88301**
Hoffer Products **7518301**

Auxiliary water pumps



Meat&Doria **20280**
Hoffer Products **7500280**

Applications

- Turbo diesel and gasoline engines
- Motorsport
- Industrial vehicles
- Tuning and performance builds

