Industrial Air Cooling

a sector of Decometa nv

- Engineering
- Construction
- Service and spares
Decometa was founded in 1953, having as its main activity the maintenance of the coal mines. In the early sixties the company became a well known subcontractor for the automobile and steel industry.

In 1980, Deco-Invest was created as a financial support group for the development of new products and expansion into new markets. New impetus and ideas were brought up within the Decometa Group. Certainly the influx of new management brought renewed vigour to Decometa.

In 1992 Deco-Invest took over Butemo, a company specialised in the production of finned tubes. Decometa expanded within its field of expertise as subcontractor for the petrochemical, chemical and food industries. Decometa has 70 people on its pay-roll.

In 2000 Decometa established a unique total concept to increase the performance of air cooled heat exchangers (also called fin-fans). Decometa offers for air cooled heat exchangers and condensers an integral service package and is one of the leading companies within this field. Decometa’s Assessment program on the condition of Air-Cooled Heat Exchangers will lead to the most beneficial choice for improvement of the existing installation within the clients’ budgetary restrictions.

In the spirit of our founder Mr. F. Janssens’ favourite topics, “low tech becomes high tech when there is an improvement of quality and an increase of production”, our main goals to improve the productivity through faster job turn arounds meanwhile complying with ISO 9001 standards.

Quality plays indeed an important role within our organisation. Decometa was the first company of its kind to be certified in accordance to PED 97/23. Our air coolers, heat exchangers and pressure vessel equipment meet with all national and international standard codes.
As a result of many years of field work and the efforts of an enthusiastic team of well trained and highly educated engineers, Decometa has gained an extensive wealth of experience in the design of pressure equipment and air cooled heat exchangers. Decometa offers global solutions for thermal and mechanical design, detailed engineering to fabrication, testing and on-site assistance.

We have shared thoughts and experience with all our customers to find the right exchanger for each particular situation, no matter how difficult it might seem.

Decometa is in the position to evaluate and compare a variety of exchanger options from the preliminary design stage in order to select the best option for the customer.

With over more than 50 years of experience in a wide range of applications, Decometa has developed a comprehensive range of designs to cut plant processing costs by increasing the performance of heat exchangers in world's major oil, petrochemical and chemical process industries.

Decometa designs, manufactures and implements tailor made constructions to solve heat exchanger and air cooled heat exchangers problems, and to improve process plant efficiency.

The bulk of our projects include design improvements on air cooled heat exchangers and shell and tube heat exchangers, efficiency improvements, revamping & debottlenecking existing exchangers, air chilling and cleaning procedures of air cooled heat exchangers.

Decometa is committed to an ongoing research and development to continually improve product performance.

Our mechanical engineering group performs efficiently in house large scientific and technical calculations, 2D-3D drafting works, Finite Elements Analysis.

Earth quake (seismic) calculations and wind calculations are made following Eurocode or American standards.

Decometa is specialized in process engineering for Air Cooled heat Exchangers (also called air fin coolers, or fin-fans) and shell and tube heat exchangers and pressure vessels.

The process department makes use of in house developed programs, our own library of scientific databases and project control tasks, commercial available packages as Aspen+ , and Computational Flow Modelling –C.F.M.

Within the field of process development and improvement we supply the process design, the upgrades, the maintenance services and all the components for Air-Cooled Heat Exchangers including the delivery of the new installations if applicable.
Decometa’s factory (covered area of 7000 m² on a total surface of 28000 m²) is located in Genk-Belgium. We fabricate new equipment as well as we repair and recondition existing installations as shell and tube heat exchangers, finned tube air-cooled heat exchangers, pressure vessels and distillation columns for the chemical and petrochemical industries.

The workshops are equipped with the most modern facilities for **proper manufacturing and control** such as:

- Cutting machines (plasma cutting machines)
- Electronically controlled tube ends expanding machines
- Fully automatic orbital GTAW tube ends welding machines
- Finning machines (for CS fins)
- Mobile cranes (capacity up to 35 tons) for field work
- Preparation & forming equipment
- Hydraulically controlled drilling/milling
- Numerically controlled drilling/milling

Decometa produces a wide range of pressure equipment to 50 tonnes per unit. We work in a wide range of metals from carbon steel to high alloy steels. The selection of materials can be normal steel, stainless, CuNi, CuZn or high quality material like duplex, super duplex or Titanium.

**Our in house design**

- Pressure vessels
- Shell & tube heat exchangers
- Air cooled heat exchangers and condensers
- Air receivers
- Blow down and flash vessels, distilling columns, flairs, stacks
- Pipe work fabrication
- Diverse structural steel

**Spare Parts**

We will deliver all spare parts:

- Headers
- Complete inter exchangeable bundles
- Rotating equipment; fans, shafts, transmission trains, shockswitches
- Plugs, gaskets, nozzles
Besides Decometa’s modern workshop, our project teams are also able to perform a diversity of on-site assemblies within the sector of industrial piping, general maintenance up to turn key projects of upgrades, revamping and debottlenecking projects.

Staff is the primary resource of a professional practise. A dedicated core staff is supplemented by retained contract staff when required. In carrying out projects for clients, a detailed working knowledge of various E.N. and ASME standards are incorporated within our ISO 9001 procedures and applied.

A project leader will follow-up the process, manufacturing and erection on site from the beginning to the end, ensuring the maximum optimisation and assuming all the time the responsibility.

Due to the company’s open organisation structure, the direct management of Decometa guarantees a high quality product and a top-notch service.

All our employees have been educated in accordance to VCA safety rules.

Petrochemical and chemical industry has been for many years the crucial field of decometa’s activities. We have designed, fabricated many facilities in this field for well known leading companies.
Audits, within the sector of Air cooled heat Exchangers, are required to improve the process performance and reliability of our air cooled system. Decometa has the expertise to identify areas in your industrial air cooling process where improvements can be made.

The source of an air cooled heat exchanger failure or poor performance can start on the designer drafting board. The way the installation is manufactured, installed and overhauled can contribute to the performance condition of the machine. The user may not have control over these steps; however understanding of the potential problems can lead to future changes.

Our assessment program will help improving the equipment performance and reliability. The maintenance costs and energy usage can also be reduced.

Our assessment program will help improving the equipment performance and reliability. The maintenance costs and energy usage can also be reduced.

The process condition of the air cooled heat exchanger (ACHE) will be audited with the help of additional techniques for airflow measurements, pressure drop readings, strobe analyses and thermographs. Simulations of the cooling or condensation process will be performed with use of in house developed software programs with our own extended and optimized database for calculating the air side pressure loss.
The main goal is to improve overall performances and efficiency of air cooled heat exchangers. Air cooled heat exchangers can be subject of loss in performance due to many factors as fluid and airside mal-distribution, fouling, mechanical problems and many others...

We deliver you assistance to solve your problems in improving the functioning and the performance of your installation. Upgrading is the right choice without the need of expensive investments in order to reach higher performances comparing to the actual ones of your installation.

Our projects start up with the screening the actual condition of the client’s air cooled heat exchanger with the aim to find a solution for improvement or débottlenecking.

We find the most profitable and advantageous solution for upgrading the clients’ installation.

By implementing our technical solution within the respect of noise levels and vibrations levels, the utilization of the clients’ installation will be maximized, resulting in very short terms of pay back and within crystal clear described operation conditions to prevent future operational problems.

Inventory of the equipment and description of the problems

- Computer aided simulations of the existing process
- Thermal calculations and process flow distribution analyses (CFD)

On site measurements of:

- air flow, process flow and heat transfer
- vibrations heat distribution with thermographs
- noise

Recommendation for improvement

- Heat and energy recovery
- Process flow distribution
- Cleaning and maintenance procedures.

Implementation of the upgrades and debottlenecking.
To minimise the duration and cost of site assembly activities, Decometa designs the bulk of its projects for modular transportation.