



OIL & GAS

POWER

SERVICES

R&D

STATE OF THE ART

AIR-COOLED HEAT EXCHANGERS

ONWARDS & UPWARDS





D'HONDT THERMAL SOLUTIONS started its industrial activities with Pressure Vessels in Europe (Belgium) more than a century ago and gradually developed its Heat Exchange activities from 1950 onwards.

D'HONDT THERMAL SOLUTIONS further developed its presence in the thermal business arena by manufacturing Air Cooled Heat Exchangers in 1960 and subsequently spread its wings geographically from 2007 to become a world leader in this field.

With over 70 years of experience in the field of heat exchange, **D'HONDT THERMAL SOLUTIONS** can address and resolve all clients' needs in this field. **D'HONDT THERMAL SOLUTIONS** is a well-known partner

in many industries and offers its products to Energy, Oil & Gas, Chemical, Heavy Industry and refrigeration technology sectors.

D'HONDT THERMAL SOLUTIONS has developed significant innovative technologies in the design and manufacture of high pressure equipment and in the production of components made with special material.

Thanks to its consolidated design and manufacturing experience combined with the adoption of improved design and fabrication concepts, **D'HONDT THERMAL SOLUTIONS** is able to make a highly technological contribution to the completion of industrial plants and for implementation of energy programs worldwide.

API 661 AIR-COOLED HEAT EXCHANGERS FOR OIL & GAS APPLICATIONS

The air-cooled heat exchangers are mostly used when the plant location and the ambient conditions do not allow an easy and economic use of other cooling systems.

The most evident advantages of air-cooled heat exchangers are:

- No problem arising from thermal and chemical pollution of cooling fluids;
- Flexibility for any plant location and plot plan arrangement (installation over other units);
- Reduction of maintenance costs;
- Easy installation by bolted assembly;
- Lower environmental impact than shell and tube heat exchangers thanks to the elimination of an auxiliary water supply.

D'HONDT THERMAL SOLUTIONS provides complete API 661 air cooler units including tube bundle assembly, motor-fan groups, structure, access ladders and walkways. Typical arrangement can be forced draft, induced draft, or air-recirculation unit.

D'HONDT THERMAL SOLUTIONS also supplies pre-assembled modules.

Since 1960, D'Hondt Thermal Solutions has been designing and manufacturing more than 10.000 aircoolers worldwide for Oil, Gas and Petrochemical projects.

API 661 AIR-COOLED HEAT EXCHANGERS FOR LNG PLANTS

D'HONDT THERMAL SOLUTIONS provides assistance to EPCs by optimizing designs for LNG plants from the FEED stage, considering:

- Reduction of equipment footprint;
- Reduction of electrical power consumption;
- Detailed analysis of critical items (propane condenser, propane sub-cooler, etc.).

Optimization in partnership with EPC for selection of:

- Passes (gain on the piping of LNG plant);
- Sound power for each item;
- Suitable way of lifting of equipment;
- Relevant disposition of items in LNG plant (CFD analysis of hot air recirculation).



Trolley for LNG large bank installation

For multi-bundles installation such as LNG plants, D'HONDT THERMAL SOLUTIONS can design and manufacture a specific trolley consisting of:

- Sliding rails;
- Trolley that can load a bundle at the end of the bank and unload it at his foreseen position.

SET UP

A crane is positioned at the end of the bank to load a bundle on the trolley. The trolley will slide on rails up to the required position and lower the bundle onto the piperack. The trolley will then slide back to fetch the next bundle.



Time & cost saving

- Avoiding moving the crane along the piperack to set up all the bundles will present a significant time saving;
- The installation will be faster (estimation: twice quicker as with a standard installation procedure).



Safety aspects

- Smaller overhaul distance when the crane is in action leading to a smaller crane working perimeter;
- Better precision in positioning the bundles leading to a shorter hauling time.

D'HONDT FRITERM THERMAL SOLUTIONS, our joint venture dedicated to non-API products, can propose a wide range of equipment for numerous applications in Power generation and other industries.

DHTS has a wide range of equipment and services which allows to propose its customer the most optimized and complete air cooling solution in various fields of activity such as Power generation, Waste to Energy, Data Centers... From the highly

competitive standard range of air cooler modules to the optimized customized air cooling solutions completed by a wide possible extended scope, our customers always find the solution that corresponds exactly to their needs.

POWER GENERATION, WASTE TO ENERGY AND OTHER INDUSTRIES PRODUCTS AND APPLICATION

Coils and air coolers modules

Our Coils, «Flat Bed», «V-shape» or vertical air cooler modules are based on a plain finned tubes heat exchange surface manufactured by mechanical expansion with a multiple choice of material:

- **Tube material:** copper, Stainless steel 304 or 316 L, CuNi with diameter from 12 to 15 mm and thickness from 0.35 to 1,5 mm;
- **Fin material:** Copper, Aluminium, Al-Mg 2.5 and 3, Epoxy pre-coated fins, CuSn, with thickness from 0.11 up to 0.25 mm and pitch from 1.8 to 12 mm.

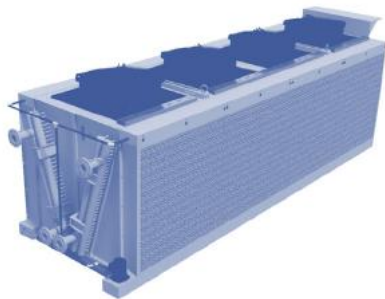


Ventilation can be handled by motor-fan groups or by motor and fan assembly, with direct or indirect transmission. Ventilation casing, frames and supporting legs can be of galvanized steel, liquid or powder painted carbon steel, stainless steel or galvanized steel.

Air cooler modules can be container sized and are delivered fully assembled with a multiple choice of junction box finishing.

This equipment can be used for:

- Diesel or gas engine cooling (HT/LT circuits), Compressors lub oil cooling;
- Turbine and generator water and lubrication oil cooling;
- Transformer's oil cooling and turbine's inlet cooling;
- Pressurized steam condensing and subcooling;
- Cooling application for other industries such as Automotive, Agro-food, metallurgy...



Extended scope of supply including, on demand:

- Circulation pump skids + instrumentation;
- Interconnection piping + accessories and Expansion tanks (pressurized or atmosphere) + instrumentation;
- **Electrical cabinets:** power and instrument junction boxes, fan step control cabinets, frequency inverters management, packaged MCC;
- **Adiabatic systems:** Spraying, fogging or pad.



In addition to the air cooling scope here above mentioned, DHTS can also supply various types of standard and tailormade cooling equipment to be installed in data centers such as Air cooled condensers (CO₂ and ammonium), packaged chillers, dual discharge evaporators, coils for HVAC units, for oil or glycol cooling...

**DATA CENTERS
PRODUCTS**




D'HONDT THERMAL SOLUTIONS FACILITIES

D'Hondt Thermal solutions operates two factories: one in Jubail Industrial area, Saudi Arabia, to serve more specifically the Middle East markets, one in South Korea for the Asian markets and more globally to serve the rest of the world.






SAUDI ARABIA FACTORY




D'Hondt Thermal solutions has a factory in Jubail Industrial Area (Saudi Arabia) with a covered area of 4500 m² on a total surface of 12000 m². The workshops are performing complete air-cooled heat exchangers: Pressure parts manufacturing, tube finning, bundle assembly, air-cooled heat exchanger modularizing, and all relevant tests (hydrotest, helium leak testing, vibrations, noise ...).

KOREA FACTORY



D'Hondt Thermal solutions has its own facilities located in Gunsan, with a covered area of 9900 m² on a 33000 m² total land. The workshops are fully equipped with the latest modern machinery to manufacture and test complete air cooled heat exchangers.

D'Hondt Thermal solutions has also a dedicated team located in Seoul, comprising skilled project managers & engineers, thermal engineers, procurement team and administrative staff.





**D'HONDT
THERMAL
SERVICES
SOLUTIONS.**

EMPOWERING YOUR AIR-COOLER



SPARE PARTS



FINNED TUBES



UPGRADE



SUPERVISION



AUDIT



CLEANING



MISTING



DRONE

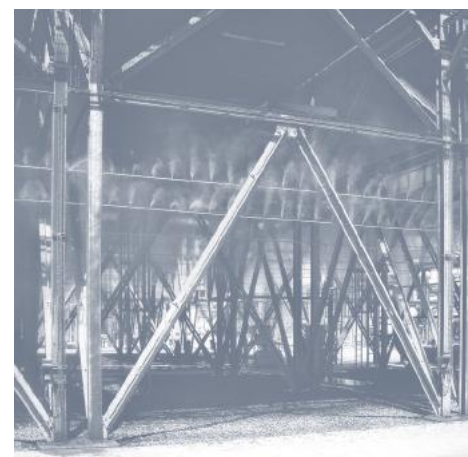
D'HONDT THERMAL SOLUTIONS offers its clients and partners the most reliable customer care services throughout the whole life cycle of their projects as well as extensive expertise and support to ensure that its customers achieve maximum efficiency from their heat exchanger equipment.

Our Customer Service can support you in the following activities:

- OEM Spare parts, Finned tubes, Bundle replacement / upgrade.

Our Field Services, include:

- Audit & site surveys;
- Cleaning (Both Dry on-line cleaning and Robotic water cleaning);
- Misting, special screens;
- Maintenance activities;
- Remote monitoring;
- Drone inspection.



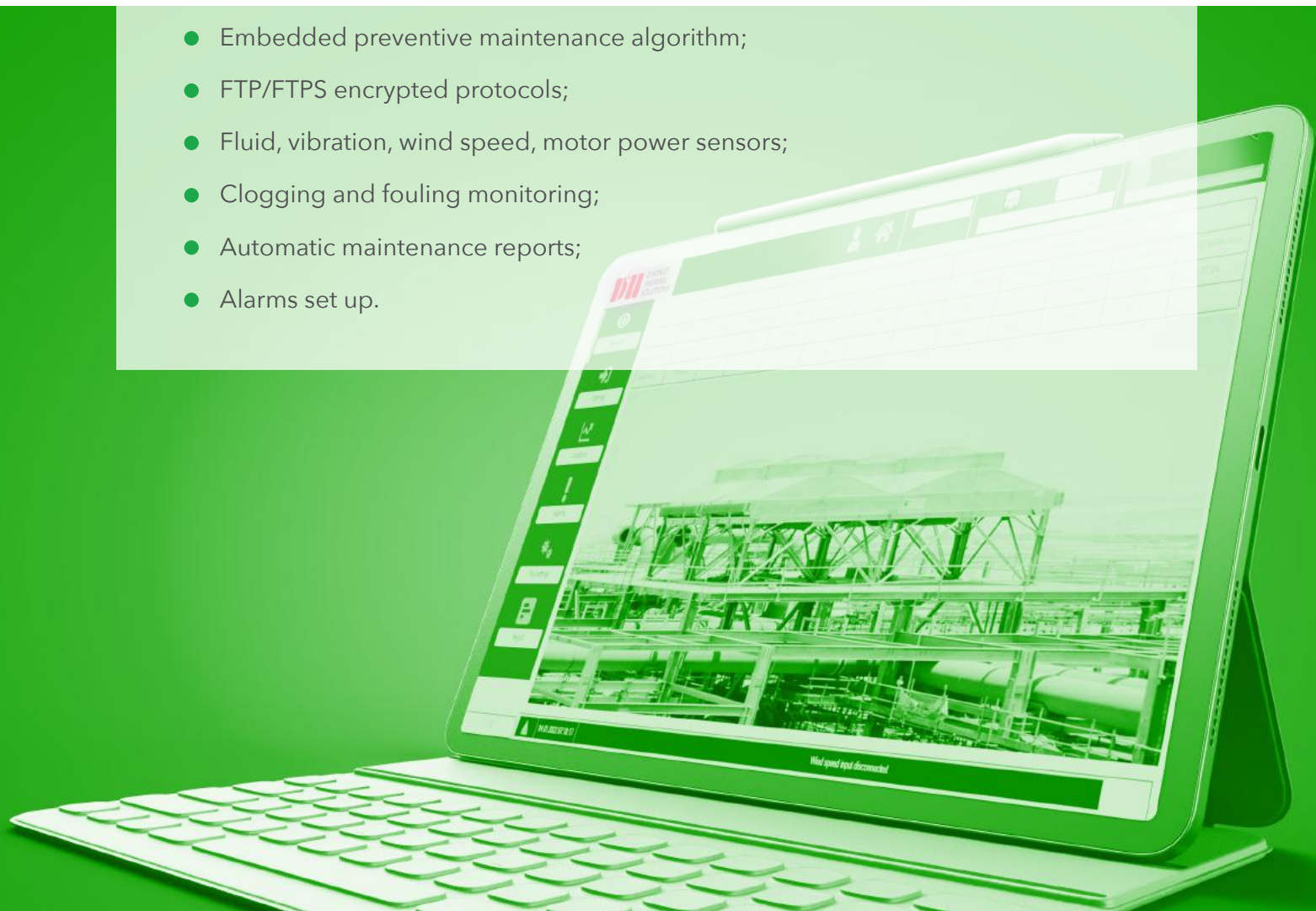
RESEARCH & DEVELOPMENT

Committed to the constant improvement of industrie 5.0, **D'HOND THERMAL SOLUTIONS** has dedicated Research and Development department with direct contact to commercial, design and manufacturing teams.

DHTS Innovation department has developed an **industrial air coolers monitoring system** for audit maintenance (predictive maintenance) and **energy management 5.0** (energy efficiency).

This «solution in a box» (DHTS box) has the following characteristics:

- Embedded preventive maintenance algorithm;
- FTP/FTPS encrypted protocols;
- Fluid, vibration, wind speed, motor power sensors;
- Clogging and fouling monitoring;
- Automatic maintenance reports;
- Alarms set up.



Europe, Americas, North-Africa

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