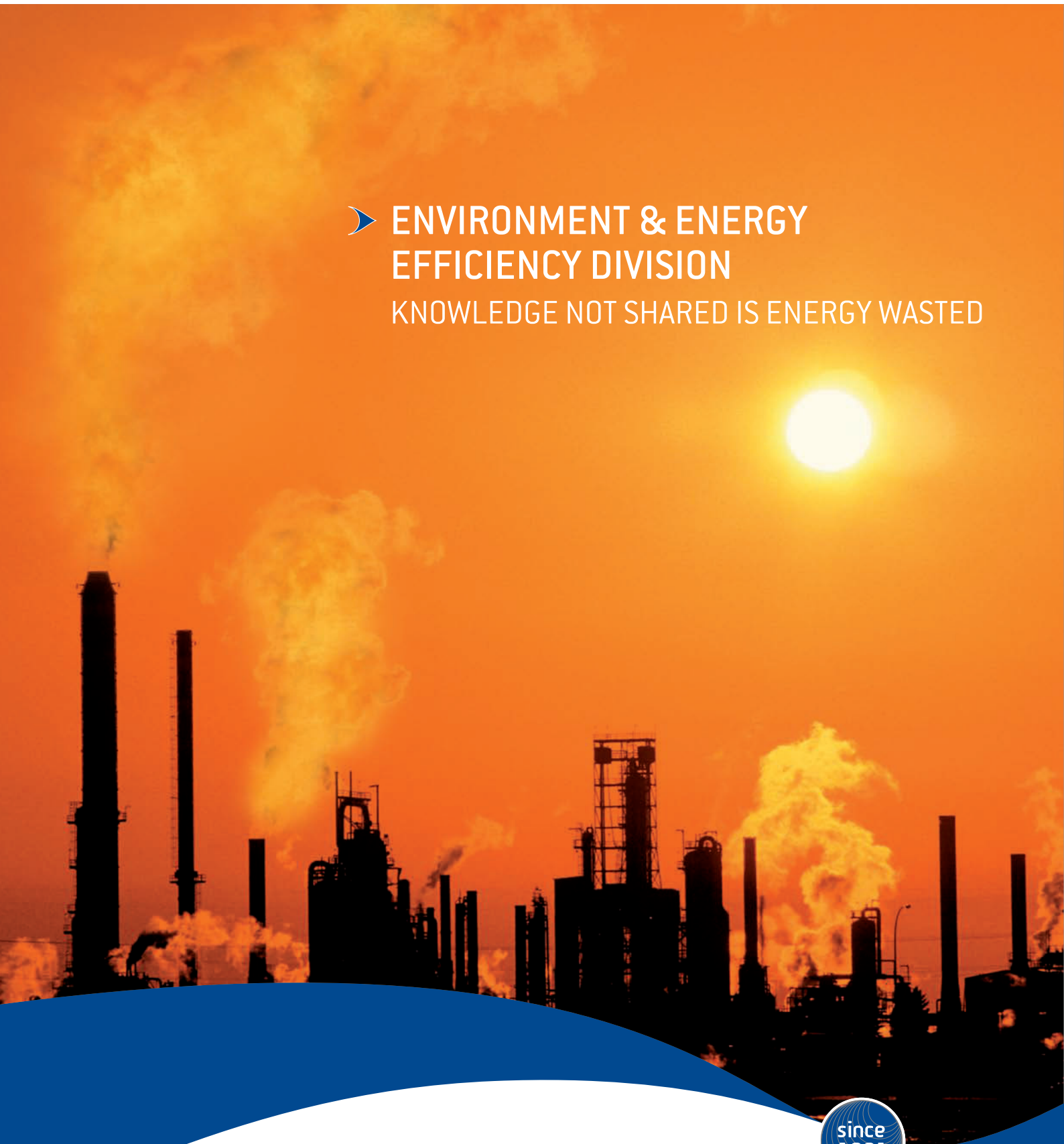


➤ ENVIRONMENT & ENERGY
EFFICIENCY DIVISION
KNOWLEDGE NOT SHARED IS ENERGY WASTED



since
1881



T&C TROUVAY
GULF & CAUVIN
Channelling all energies

ENERGY EFFICIENCY AT ITS BEST

By providing specialized solutions to customers, TROUVAY & CAUVIN has established partnerships with a number of leading companies in specific sectors of the energy industry. One of these partners is Armstrong International, a world leader in steam, air and hot water products and energy management. TROUVAY & CAUVIN Gulf is the sole distributor of Armstrong steam products and services for OPC markets in Bahrain, U.A.E, Oman and Qatar.

ABOUT



TROUVAY & CAUVIN, founded in 1881 in le Havre (France), is a leading Global Piping Solution Provider supplying piping, valves, structural steel, special piping material, instrumentation, equipment and related components used for the transportation of fluid of any nature.

Our solutions are mostly designed for greenfield and brownfield projects in the :

- Oil & Gas and Petrochemical industries
- Construction, Water, Infrastructure and Mining industries
- Power, Renewable Energies, Chemical and Agri-food industries

We service our customers internationally through a network of offices covering Americas, Europe, Africa, CIS Countries, Asia and through 7 logistic platforms. Our main hub is located in Dubai.

At TROUVAY & CAUVIN, Channelling Energy is not just about supplying pipes, fittings or valves. Channelling Energy, to us, means bringing together the specialists and dedicated professionals with the motivation, experience and knowledge to meet your projects needs and exceed your expectations to ensure the success of your project.

A real expertise, full range of value-added services and solutions make TROUVAY & CAUVIN the **Supplier of Choice** for your **Process Piping, Valves and Structural Steel** requirement since 1881.



SERVICE CENTER

We propose a full range of services that puts our exhaustive knowledge to work for your network.

SUSTAINABLE, PROACTIVE STEAM TRAP MANAGEMENT

Our proven trap management program is engineered to maintain low trap failure rates, which can increase safety and efficiency, reduce production stoppages, and lower your energy use and environmental emissions. Our specialists are trained to help you improve the reliability and performance of your utility system with ongoing auditing, repair, replacement, and routine maintenance of your steam assets.

- **Reliable, accurate trap surveys performed by our trained, certified technicians**
- **Tools and training to help you conduct your own surveys more accurately and efficiently**
- **Expert diagnosis of issues encountered at site**
- **Energy audits to detect failed or leaking traps, determine the cause of any failures, and find ways to reduce your energy consumption**
- **Operations and maintenance services to help you manage your utilities more efficiently**
- **Innovative products and technology for accurate system monitoring and effective steam trapping**

OPTIMIZATION STUDIES

Engineering studies dedicated to a specific area of your steam network or for a specific problem.

Issues covered include:

- **Water hammer detection, analysis and elimination**
- **Improved drainage of flooded heat exchangers**
- **Improved steam quality**

STEAM ENERGY PRE-AUDIT & AUDIT

Complete study of the condensate loop:

- **Steam generation, distribution and consumption analysis**
- **Condensate recovery analysis**
- **Steam traps surveys**
- **Flash steam recovery**

Return on investment calculation and savings estimates.





PRODUCT RANGE

STEAM TRAPS

Armstrong manufactures a full line of steam traps for various industrial applications.

- **Inverted bucket steam traps**
- **Float & thermostatic steam traps**
- **Controlled disc (thermodynamic) steam traps**
- **Bimetallic & bellows steam traps**
- **Superheated steam applications**
- **Clean steam applications**

LIQUID DRAINERS

Armstrong float-type liquid drainers are designed for draining heavy liquids from gases or draining water from light liquids (dual gravity drainers). These liquid drainers can operate to 255 barg or specific gravity down to 0.40.

AIR VENTS

Armstrong float and thermostatic air relief traps are designed to remove gases from liquids down to 0.40 specific gravity and for the removal of non-condensable gases from steam system.

STRAINER

Y-type pipe strainers in a wide choice of sizes and materials, to meet the bulk of pipeline-straining requirements.

CONDENSATE RECOVERY EQUIPMENT

Armstrong mechanical pumps offer all the benefits of returning condensate without the expensive maintenance commonly associated with condensate pumps.

- **Condensate pump trap packages**
- **Flash recovery vessels**

STEAM TRACING EQUIPMENT

Tailor-made and completely pre-assembled packages that include steam distribution and condensate collection manifolds, trap valve stations, steam traps, thermostatic start-up and freeze protection valves. Packages enable shorter installation time, easier maintenance, improved safety and higher energy saving.

WIRELESS STEAM SYSTEM MONITORING

Armstrong's superior, ground-breaking solutions provide real-time monitoring of your critical steam trap population. You receive instantaneous notifications of any problems, enabling you to repair or replace failed traps before they create serious steam quality issues.

Both SteamEye® and AIM® can communicate with SAGE®, allowing the user to continuously monitor critical traps and survey the entire trap population, of a site, all in the same database.

AIM^{AE} (Armstrong Intelligent Monitoring) - This wireless monitoring technology is built on the wireless HART and ISA-100 communications protocols, which continuously monitors and evaluates the operating condition of steam traps and other critical equipment in your system. AIM® provides instantaneous notification in the event of steam trap or critical equipment failure.

SAGE UMT™ WIRELESS, HANDHELD TRAP TESTER

Testing steam traps is as simple as pressing a button with SAGE UMT™. Armstrong's state-of-the-art, automatic trap testing device eliminating user error and raising the quality of trap testing to a new level. With SAGE UMT™, any steam trap technician can survey traps quickly, easily and accurately on a regular basis, while information syncs seamlessly to SAGE®.

- **Detects traps in good, cold and blow-through condition**
- **Piezoelectric acoustic sensor, developed and tuned specifically for the unique conditions found in steam traps**
- **Non-contact infrared temperature sensor**
- **RFID technology significantly reduces the time required to locate and identify traps**
- **SAGE UMT™ works seamlessly with SAGE® Mobile and SAGE® Utility System Management platform**
- **SAGE® immediately uploads data to the cloud where it's protected by high-level security and automated backups**
- **Customers own their own data**





TRAINING

TROUVAY & CAUVIN Gulf & Armstrong International presents: TROUVAY & CAUVIN Steam School technical seminars

By sharing our knowledge through seminars we provide you with a better understanding of the properties of steam, its application in the industry and specific equipment.

installations. Installation design, selection and maintenance aspects are addressed from the standpoint of optimization.

ENERGY SEMINARS

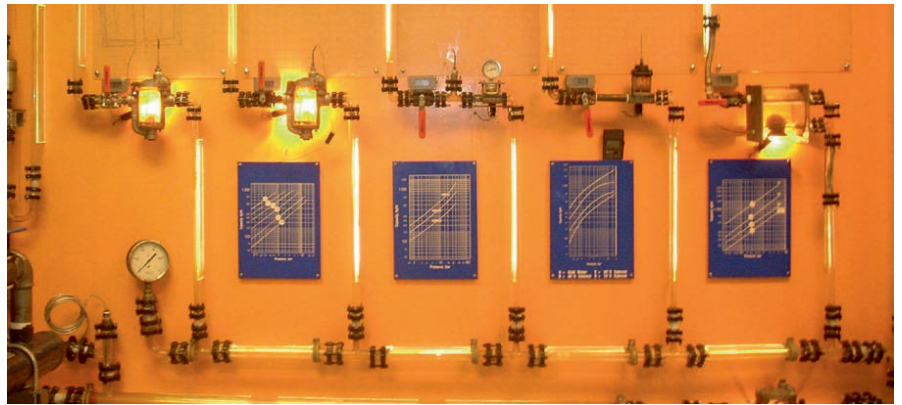
In our seminars you learn how to select the right product for the specific needs of your applications. A review of the basic theory of steam gives you an opportunity to refresh your knowledge in this area. The technical aptitude and field experience of Armstrong trainers provides a practical overview of the different elements of traditional

Our dynamic and interactive sessions are designed to encourage a real exchange of experiences and knowledge. You will have the opportunity to ask questions related to your particular needs. TROUVAY & CAUVIN Gulf energy seminars offer you technical, practical, objective and neutral training generally suited to the different equipment used in industrial processes.



STRENGTH OF A LEADER

Armstrong is a family owned company founded in the United States in 1901. Today it is a world leader in steam, air and hot water management solutions, with more than 1,000 employees in the U.S, Europe and Asia. The European division, founded in 1969, covers Europe, the Middle East and Africa.



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