

STEAMWISE

A publication by IDEKO, THE INDUSTRIAL ENGINEERING COMPANY s.a.r.l.

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FULL STEAM AHEAD!

EDITORIAL

This issue of Steamwise was in preparation in February 2005, just before events started to take place at the unexpected pace we all remember. It was put on hold and here we are now at the start of a new year, hoping it will be peaceful and prosperous for Lebanon and the world.

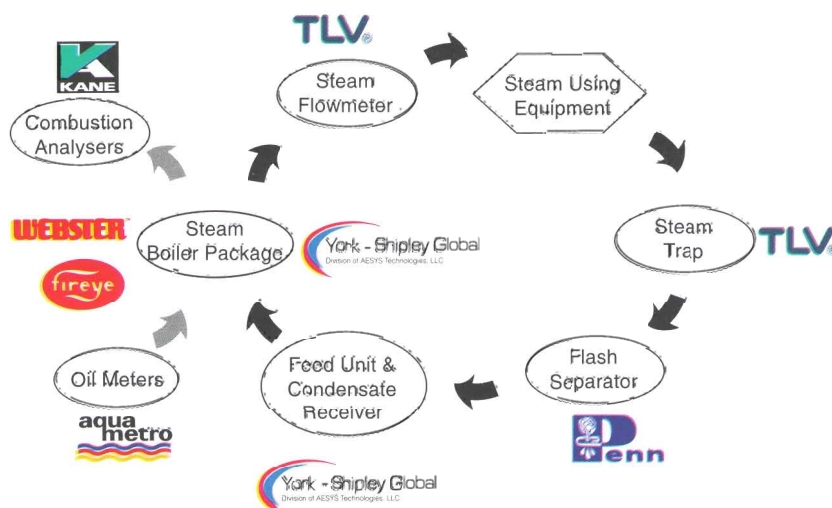
Most of the contents of this issue will focus on the energy-saving related products and services that we can offer. In addition to the Fireye NEXUS[®] Parallel positioning burner controls, and the flash steam recovery systems by PENN Separator[®] already discussed and presented in earlier issues, we will describe some Energy saving tips in Boiler Rooms. We will also stress on the importance of the use of combustion analysers for boiler/burner tuning and our range of KANE Analysers[®] falls within this perspective. In addition, our AQUAMETRO[®] Oil meters are the perfect tool for oil consumption monitoring. Our TLV Steam Traps[®], with the associated monitoring devices and maintenance programmes will ensure a reliable and trouble-free management of condensate, which is a proven energy saving measure.

Energy Savings are becoming a priority in the Industry. Definitely, the increase in fuel price is a major reason for this, but also, the environmental impact of Energy Consumption is becoming a concern, and we should expect to see some form of legislation in this respect in Lebanon. IDEKO is therefore committed to support its customers on the track of saving Energy.

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A COMPLETE STEAM SOLUTION!

IDEKO is proud to offer global engineered solutions for steam networks. From the steam network design and implementation to the supply of a wide range of steam products, IDEKO is your Steam Specialist.



York-Shiple (USA) manufactures the renowned firetube horizontal boilers and vertical tubeless boilers. They also offer all the required equipment for a safe and efficient boiler room.

Fireye (USA) is the burner management expert. With the E-110 and Nexus[®] controllers (and soon the new BurnerLogix line) they are able to provide high tech burner control with most of the worldwide safety approvals. Combustion analysis is now easy and reliable with our range of Kane Analysers[®] (UK).

To accurately know boiler fuel consumption, Aquametro (Switzerland) offers a range of high quality oil meters[®] that are known to last forever... or almost forever!

TLV (Japan) is the specialist in steam and condensate technology. They offer a range of products from steam traps (Thermodynamic and Free Float to name a few) and sight glasses to Steam Flowmeters and the energy saving condensate pump known as PowerTrap[®].

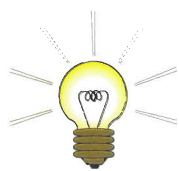
Penn Separator (USA) offers Steam Separators and Heat Recovery Systems for Low and High Pressure Boilers. These include Blow Down Separators, the energy saving Flash Separator[®], Automatic Blow Down Systems with Continuous Heat Recovery[®]...

In all phases of the steam cycle, from generation to consumption and back to the boiler room, IDEKO will definitely be there with the proper product or service.



STEAMWISE, issued by IDEKO s.a.r.l - HORSH TABET - SIN EL FIL - LEBANON
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TIPS FOR ENERGY SAVING IN YOUR BOILER ROOM



Energy saving is of great concern these days for both cost reduction and environmental

purposes. With the constantly increasing fuel price, energy cost is becoming very high and more efforts are also being made to reduce global CO₂ emissions in the world.

With the exception of electricity, the boiler is usually the main energy source for any industry, hotel or hospital. If you want to look for energy saving you have to start by looking in your boiler room. A survey in a boiler room would show that many operational measures will save a lot of money and will cost so much less.

■ **Boiler Tuning**: A correctly tuned boiler should have no more than 15% excess air (Oxygen level around 4-5%). Periodical boiler tuning, using a combustion analyser, is required to keep your boiler at the minimum allowable excess air level and avoid loss of energy out of your chimney. A 1% oxygen level reduction might increase your boiler efficiency by up to 1%.

■ **Water Treatment and Blow Down Operation of the Steam Boiler**: Keeping the boiler waterside free from scale is both a safety and energy saving measure. To achieve this, you should make sure to have 0 ppm hardness in your make up water. Moreover, the blowdown operation must be done 3-4 times a day to get rid of any scum at the bottom or at the surface of your steam boiler. Scale on the boiler firetubes will decrease the boiler heat transfer to the water. This will induce higher stack temperature and may weaken boiler internal parts. The lifetime of your

boiler may be reduced and scale may, in extreme cases, cause waterside explosions. A scale thickness of 0.8 mm will cause an additional Fuel Usage of 8.5%!

■ **Overhaul**: Fuel combustion will always leave ashes inside the boiler furnace. After operating the boiler for some time, these ashes will form an insulating surface inside the boiler furnace and firetubes decreasing the heat transfer to the water. To avoid this, the boiler fireside should be cleaned at least once per year. You must always monitor the stack temperature of your boiler. High stack temperature is your alarm that boiler cleaning is due!

■ **Leakage**: Any leakage on your boiler (Handholes, Manholes, Valves...) or in your heating system is lost energy. An orifice of 1/8" in a pipe carrying 100 psi steam, will lose around 24,000 kg of steam per month (1,750 USD if steam is produced with diesel - at present rates!)

■ **Insulation**: Uninsulated heating equipment and piping are a constant source of wasted energy. Insulation can typically reduce energy losses by 90% and help ensure proper steam pressure at plant equipment. Any surface over 50°C should be insulated, including boiler surfaces, steam and condensate return piping, and fittings. 30 m of uninsulated 2 inch pipe will lose 40,000 MBTU per month (650 USD per month!)

■ Other settings that reduce boiler cycling will also increase boiler efficiency. Cycling (boiler shut down and restart) loses energy by purging air at each start up and shut down of the boiler.

As shown, some small maintenance procedures provide both energy savings and safety conditions in your boiler room. Nothing justifies not adopting them!

OUR COLLABORATION WITH LCECP

The Lebanese Center for Energy Conservation Project is a joint collaborative work between the UNDP (United Nations Development Programme) and the Lebanese Ministry of Energy and Water. Its aim is to reduce Greenhouse Gas Emissions, through a series of measures which reduce energy consumption in different sectors, both domestic and industrial.

One of the recommended measures by LCECP in the domain of Energy Efficiency in Water Heating, is to "adopt a regular boiler tuning programme (adjust air/fuel ratio) to maintain higher efficiencies". It is well known that improving the efficiency of a boiler has direct impact on reduction of energy consumption.

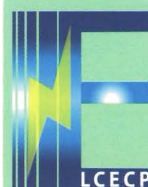
In line with the above, and to assist LCECP in efforts for promoting this recommendation, IDEKO has started taking part in seminars and lectures organized by LCECP, addressing this issue. First collaboration at this level was a mini-presentation during the Annual Congress of Mechanical Engineers, organised by the Lebanese Order of Engineers and Architects.



Engg. A. Ali, E.Eid, W. Zahabi at Order of Engineers

On the other hand, IDEKO offers a wide variety of products and services that serve the purpose of the above recommendation, as outlined elsewhere in this issue.

Promoting LCECP's recommendations reflects our conviction of the importance of the Energy issue, both on the national and the global levels.



Lebanese Center for Energy
Conservation Project

مشروع المركز اللبناني
لترشيد استهلاك الطاقة

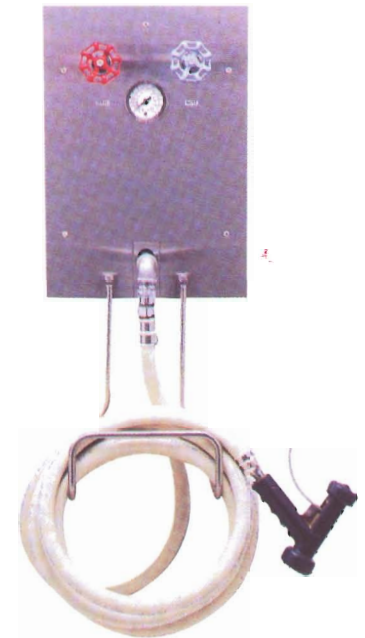


THERMOSTATIC MIXING STATIONS BY LEONARD VALVES CO.

Ideko takes pride in offering directly ex-stocks Thermostatic Steam-to-Water Mixing Stations, which can generate automatically Hot Water at controlled temperature, whenever Steam is available, by Mixing Steam and Cold Water, without the recourse to the traditional Heat Exchanger System !

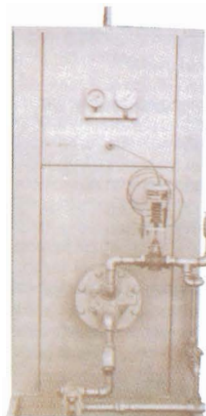
Typical Stations include a Thermostatic Mixing Valve, Service inlet Valves, a Hose and Hose Rack, and a Spray Gun.

Applications of this very practical device are various and include for instance Cleaning of floors and walls in Hospitals, Hotels, Garages, Car wash centers, Latrines, etc.. or aspticizing of Hospital wards with chemicals added to the water.



PACKAGED HOT WATER HEATER BY PRECISION BOILERS LLC.

Available in our Stocks and ready for direct installation, is a 560 Liter Packaged Hot Water Heater, Steam Heated, Vertical, with Copper Coated interior and a Copper U-tube Bundle, complete with Insulation and Jacket, Pressure and Temperature Gauges, Pressure and Temperature Relief Valves, Self-contained Control Valve, Drain Valve, Main Steam Trap and Auxiliary Drip Trap.



**IMMEDIATE DELIVERY
CALL US NOW FOR DETAILS !**

BEFORE THINKING SALES,
THINK AFTERSALES!

A Product can only be as good as the aftersales support behind it. While this thought makes lots of sense for the end-users / customers, it is unfortunately not always taken in consideration in the contracting business. This is understandable most of the times, however, in the case of equipment where some form of commissioning is involved, such as boilers or generators, contractors should take aftersales support into consideration. Buying an equipment from a manufacturer who does not have reliable "local" aftersales support might put the contractor in a very awkward position, after installation of equipment that cannot be started-up / commissioned properly, and for which no reliable support can be obtained.

IDEKO's team has been requested on a number of occasions to commission competition boilers with no adequate aftersales support. Our team's experience with different designs of burners, and different control schemes puts IDEKO in a leading position in that field.



MAJOR RECENT PROJECTS IN THE M-E

The year 2005 has been marked with a number of Boiler Sales in Hospitals. Both AL-HAYAT and MONLA Hospitals have been supplied with a 40 HP York-Shipley Boiler, whereas CLINIQUE DU LEVANT has opted for a Vertical Tubeless 25 HP York-Shipley Boiler.

We are also proud to be offering products for SRH Private Residence (Subcontractor: Khater Engineering -25 HP York-Shipley Boiler), SAGESSE HOSPITALITY INSTITUTE (40 HP York-Shipley Boiler) and ROTANA SUITES (Subcontractor: Temacode-Vertical Tubeless 50 HP York-Shipley Boiler).



View of the 40 HP Boiler at Al-Hayat Hospital

Further, we are happy to announce that both ALMAZA and SIDEM Factories have joined the family of satisfied FIREYE NEXUS* users in Lebanon and the repeat Order of a Nexus* System from SOLICAR is the best testimony of both Product performance and Customer satisfaction.



The Nexus system at Almaza Factory*

On the other hand, Four Hot Water Boilers of 50 and 60 HP have been supplied to The HABTOOR GRAND HOTEL in Dubai (Contractor E.T.A.).

Construction sector in Dubai is booming and a number of hotels are under negotiations for Boiler Room equipment, or even Complete Steam Plants.



View of the 60 HP Boiler at the Habtoor Grand Hotel in Dubai

Finally, one York-Shipley Steam Boiler of 175 HP has been sold to TUBITAK Research Center in Turkey.

ANNOUNCEMENT

IDEKO is pleased to announce that starting April 2006 a new service for steam trap testing* will be offered by our technical team. This will enable our customers in hotels, hospitals and industries, perform a regular inspection on their steam traps population, avoiding therefore costly steam trap leakages that would otherwise go unnoticed.



Pocket TrapMan®

Throughout this issue, all terms identified with * refer to Energy-friendly products by IDEKO

...FOR WE BELIEVE THAT
CUSTOMER'S SATISFACTION
IS A PRIORITY...
WE HAVE LAUNCHED OUR
COMBINED RESOURCES
FULL STEAM AHEAD!

