

STEAMWISE

A quarterly publication by IDEKO, THE INDUSTRIAL ENGINEERING COMPANY

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FULL STEAM AHEAD!

EDITORIAL

This issue, issue # 4 will be the last one for this century. With the prospect of a new century booming ahead, Ideko's Management is brimming with novel ideas and projects for the future.

These range from more frequent issues of Steamwise with more varieties of topics, possibly more pages and inserts; coverage of new Range of Products and Agencies acquired lately, to regular Seminars and mini-Seminars in the M-E, to a Boiler School course in Beirut and extension of Ideko's Territorial Representation. More details on the above will be given later.

However, foremost in our minds, our commitment to our Principals Overseas and to our local Customers remain unchanged and unwavering, Loyalty to the first and Best Service to the latter. With the new breed of Equipment ("The Millenium Boiler", for example, coming out soon), we are looking with confidence and excitement to the future, and count, as we have always done in the past, on our Customers' Good Will and Patronage .

Elie Eid, (Eng.)
President

OUR CHOSEN SUPPLIER: LEONARD Water Temperature Controls

IDEKO's association with LEONARD Water Temperature Controls may not be old, but has become a necessity since LEONARD's product range has direct application in the on-going reconstruction works in Lebanon and the Middle-East.

LEONARD products are many and varied in the water temperature and pressure controls:

Temperature Balancing Valves, Pressure Balancing Valves, Main Thermostatic Mixing and Tempering Valves, Shower Systems, Master Mixers, Steam-Water Mixers, Multiple Shower Control Systems, Hydrotherapy Control Systems, Industry Hose Stations, etc... all centered around Leonard patented TM valve.

Whatever your need may be in Water Temperature Control, there's always a LEONARD valve suitable for you !!!

Major applications for LEONARD Valves and assemblies are in Hotels, Hospitals, Clubs, Health Centers, Gymnasiums, Industries and others.... Most popular is LEONARD water temperature controls for large Domestic Hot Water systems with the application of the TM Valve in the HI-LO Manifold Assembly : securing tempered water temperatures within close limits at peak and reduced loads.

Equally popular is the Steam/Water Mixing Valve. Steam and Cold Water are mixed to obtain unlimited hot water at the required pre-set temperature, at any location with sufficient pressure for cleaning/rinsing purposes, ideal for industries, car stations, and wherever a strong hot stream of water is needed, intermittently and at will, without

recourse to the standard Hot Water Storage tank and Heater combination

LEONARD simple, yet reliable design is a guarantee for durability of its products.

Demonstration cut-outs of TM and TMS Mixers (In fact real valves adequately cut) are



available at IDEKO's offices, illustrating this design simplicity. Technical sheets for same are available from our office upon request.

IDEKO and LEONARD will surely be your next winning combination !!!



Inside this issue

Editorial	p.1
Our Chosen Supplier	
Technically Speaking	p.2
Stock Info.	p.3
Our references New events Erratum	p.4



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THE ASME BOILER CODE (Cnt'd) - ORIGIN

The second part of this article deals with the Origin of the Code.

That such a Code was greatly needed, consider the following facts and conditions. As the twentieth Century began, there lay behind it a grievously distressing record of loss of life and property from boiler explosion throughout the United States.

The most disastrous explosion was that which occurred on the steamboat "Sultana" on the Mississippi River on April 27th 1865. One Boiler exploded. The boat immediately caught fire and burned in 20 minutes with the loss of 1,500 persons.

From the years 1867 through 1899, there were 5629 persons who lost their life as a result of boiler explosions. From the years 1900 through 1930, there were 6008 persons who lost their life as result of boiler explosions, not to mention the vast amount of property damage resulting therefrom.

Unfortunately, and despite the best care taken to avoid boiler explosions by means of a safe and adequate construction thereof, explosions continued to occur occasionally, as a result of faulty, inadequate, improper operation and / or maintenance, or for unsafe and inadequate construction.

On March 10th 1905, a Firetube Boiler exploded in a shoe factory in Brockton, Massachusetts, resulting in the death of 58 persons, the injury of 117 and \$ 250,000 property damage with \$ 280,000 claims for injury and death. As a result thereof, the first Massachusetts Rules for Boilers was formulated and approved August 30th 1907. These Rules were subsequently enlarged upon and became what is generally recognized as being the first State Boiler Code: The Massachusetts Steam Boiler Rules of 1909.

On October 24th 1911, the State of Ohio established the Ohio Boiler Code, which was, excepting for a few changes, similar to the Massachusetts Steam Boiler Rules of 1909.

These were excellent in their requirement, yet bore evidence of the local State requirements, and therefore lacked the appeal for their adoption by other State boards.



Hence, in an effort to obtain an acceptable, uniform Boiler Construction code which would result in the building of safe-to-operate boilers and pressure vessels and which could be uniformly acceptable in every state, the American Society of Mechanical Engineers was invited to formulate a Boiler Construction Code complying with all of the desired requirements.

This action resulted in the eventual formulation and presentation of the 1914 edition, that is, the first edition of the ASME Boiler Code.

The ASME Boiler and Pressure Vessel Code contains rules for the construction of safe boilers, unfired pressure vessels, appurtenances, etc. The Code is not a design manual.

The rules define the minimum requirements for construction, etc., which shall be complied with. The Code does not contain rules to cover all details of design and construction. Where complete details are not given, it is intended that the manufacturer, subject to the approval of the authorized inspector, shall provide details of design and construction which will be as safe as otherwise provided by the rules in the Code.



A DESIGN FEATURE: EQUALIZING STEAM CONDENSATE LINE RETURN PRESURE

It is very common in steam networks to supply steam at different pressures to meet the requirement of each equipment. The highest Steam pressure equipment requirement determines Boiler Operating Pressure and reduced Pressures from same are generated with appropriate pressure reducing stations. This standard practice solves the problem of feeding steam to the various equipment with the relevant pressure, but designers often overlook proper management of condensate returns which obviously are at different levels of pressure. A common method used is interconnecting Condensate returns at different pressures into a single return line to the Condensate Feed tank or Deaerator. This solution while being rather simple and economic will however affect the performance of steam traps especially on the low pressure side of the network, resulting in erratic system performance: Low-pressure condensate back-up, higher back-pressure on the low-pressure steam traps, poor condensate out-flow, etc. and excess flashing at the return Tank.

This is a typical application for a Flash Separator. It provides the necessary condensate return pressure equalization with the added benefit of flash steam recovery.

The high Pressure Condensate is fed to this tank which is connected to the low pressure steam network. Subjected to this lower pressure, the high pressure condensate will flash within the Tank and separate into low pressure steam and condensate. The latter is now connected to the low pressure condensate network without any problem. Thus, all condensate return from the network will be equalized at the same low pressure, and a single low pressure condensate return line is then piped to the Feed Unit.

Obviously the flash steam recovered at the Flash Separator is advantageously piped, fed-back, as live steam to the low-pressure steam-using equipment.

Hence, a Flash Separator is the ideal solution to the condensate pressure equalization and provides significant fuel savings. This feature will be addressed in more details in the next issue.



YOUR NEW SOURCE FOR ALL TYPES OF GAUGES: WEISS INSTRUMENTS

A wide range of Weiss Gauges is now available at Ideko Stocks. This range was selected to meet our customers' different requirements, either in Pressure Gauges or in Thermometers.

For Pressure Gauges, a number of parameters confer their versatility :

- 1) Medium Served: Air, Oil, Water, Gas or other medium that do not attack Brass. For Steam service, gauges should be protected from excessive temperature by installation of a Coil-type syphon, also available in our stocks
- 2) Application: Heating, Plumbing, Air Conditioning & Ventilating
- 3) Gauges diameter: Available Sizes: 2" & 2.5" for Oil and 4.5" & 6" for Steam
- 4) Pressure Rating: 0-200 PSI & 0-300 PSI for Oil and 0-30 PSI, 0-160 PSI & 0-300 PSI for Steam
- 5) Accessories: Snubbers for Oil Pressure Gauges and Straight Coil Syphons for Steam Pressure Gauges

All the above Pressure Gauges are lower mount.

- Different mounts and ranges to meet higher ratings are available on request.



For Bi-Metal Thermometers, the following Specs are also available:-

- 1) Medium Served: Water or Steam
- 2) Application: Feedwater Tanks, Boiler Stacks...
- 3) Stem Length: 6" & 9"
- 4) Stem Form: Straight or Angle

5) Temperature rating: 0-250 Deg.F for Water and 200-1000 Deg.F for Steam

6) Accessories: Brass Thermowells for both 6" and 9" Stem

All the above Thermometers are 3" Dial, back mount. 12" Stem available on request.

Thermowells for all Thermometers are also available in 304 & 316 Stainless Steel.

A wider choice of different Pressure and Temperature measuring instruments to meet all industrial uses is also available from Weiss Instruments. Our Stock selection reflects the most popular items needed by our customers in their HVAC Applications.



ALL YOUR GASKETING MATERIAL NEEDS BY PARS MANUFACTURING CO.

Ideko is proud to carry today a sizeable stock of Pars Gasketing Material including Tapes, Ropes, Manhole and Handhole Gaskets.

Pars products are known to be safe and maintenance-free. They are designed to properly suit all your Hi-Heat Industrial applications.

Ideko's Pars Inventory selection includes the following:-

- Hi-heat resistant (up to 1,000 deg.F) Parglass Premium Fiberglass Tapes : Used for flange gasketing, oven door sealing, pipe wrapping and insulation. Available sizes : 1/8" x 1" and 1/8" x 1.5"

- Hi-heat resistant Braided Ceramic Ropes (up to 2,300 deg.F) : Used for gasketing, packing and sealing application. Can also be encased in wire

mesh for improved abrasion resistance. Available sizes : 1/2", 3/4" and 1".



- Topog-E Handhole Gaskets : Suitable for temperatures of up to 380 deg.F and pressures of up to 180 PSI. Have been tested in their own test Boilers at

300# Steam pressure for 6 months without failure!

Available sizes : 3.5" x 4.5" x 1/2".

- Pars Style # 300 gaskets : Designed for sealing Boiler Handhole and Manholes against Steam, Gas and Water and for many other applications. Their brass wire insertion throughout the fabric ensures greater Heat dispersion and conformity under various temperatures and pressures. They are rated at 380 deg.F and 180 PSI.

Available sizes : 11" x 15" and 12" x 16". Higher temperature and pressure Ratings available on request.

All the above Pars products are available in our Stocks for immediate delivery. Ideko Sales Dept. will be happy to specify and quote all your Pars Hi-Heat products requirements.



MAJOR PROJECTS

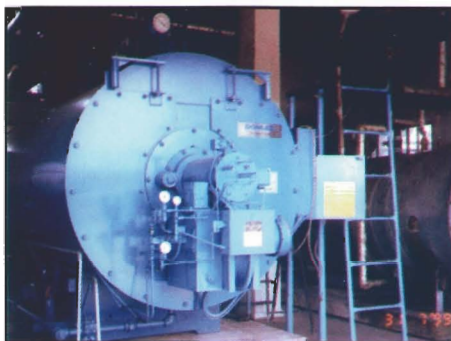
Lebanon

The HOLIDAY INN MARTINEZ (Main Contractor : UCE- Karam Group) joins the long list of Hotels in Lebanon and the Middle-East using York-Shipley Steam Boilers and Auxiliary Equipment. A 100HP Steam Boiler with relevant Feed Unit and



Phoenicia Hotel - Beirut, equipped with 3 Y-S 400 HP boilers

BlowDown Separator, as well as 2 Full Modulation Conversion burners for Hot Water Boilers (French Made), are soon to be started-up on this site.



Modern Fruit Juice Factory - Homs - Syria, New 200 HP Y-S boiler

A new Vertical 25HP Tubeless Boiler, also by York-Shipley, has been ordered by CLINIQUE DR. RIZK (Ashrafieh). This will be the 4th York-Shipley Boiler in the same boiler room. Also, a complete Steam Boiler Room is under installation at MZAR 2000 Project (Faraya).

This Boiler Room is to serve the steam demand for the Laundry. Finally, a few other hotels are under negotiations for Boiler Room equipment, and/or even Complete Steam Plants.

Oman

NATIONAL PHARMACEUTICALS and AL-SEEB Catering Center of Muscat-Oman are currently under negotiation, with Hi-Pressure Steam Boilers and Complete Auxiliary Plantroom Equipment.

Kuwait

UNITED PAPER INDUSTRIES Job of Kuwait, is currently under negotiation. This calls for a 1000HP Boiler with Deaerator, Surge Tank, Water Softener, Chemical Feeder, Blowdown Separator, Sample Cooler and Auto Blo-Down System.

IDEKO BOILER & CONTROLS TRAINING SEMINAR

A very successful Seminar by Ideko took place on February 03rd and 04th 99 at the Beirut Commodore Hotel. This "Boiler and Controls Theory and



Eng. Elie Eid lecturing at Ideko Seminar

Service" Seminar was Ideko's first after the Civil War. Foreign Attendees from all over the Middle-East and the Gulf Area : Saudi, Emirates, Oman and Jordan, as well as local Attendees among our business relations and Customers contributed each in the success of this "come-back" that we intend to renew every year.

On the Technical side, topics like Boilers and Burners classification, theory,

components and controls, as well as Auxiliary Equipment outline, Water Treatment and Boiler Operation were covered.

On the Practical side, Efficiency Tests, Troubleshooting simulations and Fireye Controls demonstrations were effected. Seminar Lecturers, Mr. Elie Eid , Y-S M-E Regional Manager, Mr. Eid Eid, Chief Engineer of Ideko, and Mr. Jeff Hughes , Fireye M-E Regional Manager thank all the Attendees for their presence and good support, with the promise of other forthcoming Seminars , with other topics to address different engineering concerns.



A souvenir photo with Eng. Elie Eid at the Seminar

ERRATUM



A misprint occurred in our previous Issue # 3, on page 4 under "New Events".

We present our apologies to the Ashrae Lebanese Chapter for the spelling mistake in "Ashrae".

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

