

CONTRACTOR

THE NEWSMAGAZINE OF MECHANICAL CONTRACTING

Reprint from May 1995

ISH show still the pacesetter for the future of hydronics

BY JOE FIEDRICH

Hydronic heating authority

FRANKFURT, GERMANY - Having just returned from the ISH '95 I found it to be, as always, the pinnacle of hydronic heating and plumbing shows, displaying once again a staggering array of products which can only be described as innovative, futuristic and in some instances extravagant.

The product innovations of this years ISH was driven by the new German Energy Efficiency Standards which took effect on January 1, 1995 as well as the tightening emission standards throughout Europe. Contrary to popular belief in the U.S., the innovations in the European heating industry are centered around environmental concerns - the greenhouse effect and acid rain, CO, CO₂ and NO_x emissions - rather than fuel prices. In fact, in Germany alone, NO₂ heating oil, which fuels 60% of all heating plants, has dropped 40% in price since 1988 with the average price of heating oil being 1.70 deutsche mark (\$1.02) last year. Gasoline prices have, however, remained high, at \$4.00/gallon, due to the high taxes on gasoline.

In this light, the various European boiler manufacturers were showing

their latest models of gas fired condensing boilers from small wall hung to large commercial units. The message to the industry is: reduce boiler combustion emission by burning less fuel. Existing low temperature and outdoor reset control boiler technology with seasonal efficiencies in the high eighties has reached its limitations in past years. By using gas fired condensing technology another 10% can be added to the system's fuel efficiency. This technology utilizes the latent heat of the fuel, reaching almost 100% total combustion efficiency, if applied

**The message to the industry is:
reduce boiler combustion emission by burning less fuel.**

properly. Condensing technology, coupled with low temperature radiation, is the key. Floor heating has proven to be the ideal distribution system, having the lowest possible return water temperature back from the system.

Burner technology has taken a quantum leap with the oil and gas burners introduced. The use of radiant gas burners allows the modu-

lation of the gas input for continuous firing of the burner at the instantaneous heat loss of the building during the entire heating season.

The Viessmann Manufacturing Co. is the technology leader in this field with their two burners for oil and gas: the amazingly simple Rotrix oil and Matrix gas version. The prototypes were actually introduced at the ISH '93 and less than two years later are in mass production, having set a new mile stone in the way we will be burning our heating fuel in the future.

With both burners firing into a glass display and venting into the exhibition hall, the only description is amazement. The Rotrix oil burner flame is almost invisible, with 50% flue gas recirculation and emission values of CO, CO₂ and NO_x so low, it approaches those of the air we breath.

The Matrix radiant gas burner, which is flameless, symbolizes with its semi-spherical shape, a glowing sun rising on the horizon. It burns so cleanly and quietly that it actually could make boilers obsolete (if heat distribution would not be required) by venting into your living room as a conversational centerpiece on your coffee table.

In the ISH exhibition hall that housed all the floorheating system manufacturers, proof could be found of the popularity and still impressively growing European market, even after 20 years.

Hydronic pumping equipment with variable speed drives to adjust to the systems' constantly changing pump pressure requirements automatically, is becoming the standard in Europe. The Grundfos Co. introduced TV-like remote controls for wireless display of pump pressure and flow rate, including its remote set point adjustment. All that's required is to just flip the channels.

Electronic boiler room controls are becoming more and more sophisticated, yet user-friendly and less expensive, a development similar to what we see in the personal computer business. Technological advances such as menu-driven displays, built-in talking operating instructions,(in four languages of course), and wireless remote controls are becoming standard, just to name a few developments.

The hydronics business is becoming more and more exciting. Don't miss the next ISH Show in '97, it's well worth the trip!

The author is president of Stadler Corp. (tel. 781/275-3122), a Bedford, Mass.-based supplier of hydronic heating equipment