



OMEGA Productive Services, Inc.

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FALL 2006

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QUOTE of the Month:

“Discoveries are often made by not following instructions, by going off the main road, by trying the untried.”

- Frank Tyger



? Ask Dr. Brush



Contributed by:
Max Carthew
C.E.O.

Energy Conservation by Direct Gas Fired Air Heating

From time to time we come across older factories which were built before the availability of clean Natural Gas. These plants often have boiler houses generating Steam or High Pressure Hot Water (HPHW), which is distributed throughout the plant for various heating needs. The advantage of this method is that various fuels can be burnt that would have quality and combustion issues if used directly for process heating. Also there is one central combustion system to maintain.

One important disadvantage of this heating method is that there are always losses whenever we use indirect heating. In addition there are heat and pumping losses from the long distribution circuits used. **In one recent study we found that 20% of the available energy from the fuel was lost before reaching the user.**

The advent of clean natural gas has allowed direct gas firing for many applications where the products of combustion enters the process and adds to the available heat. Common examples in the Paint Industry include heating of outside air and heating for various oven processes. **In this instance 100% of the available fuel heat is used in the process for an important fuel saving of 20%.** Where we have the situation that Natural Gas is being used in the Steam or HPHW plant we can convert to direct gas firing to realize the full 20% gain.

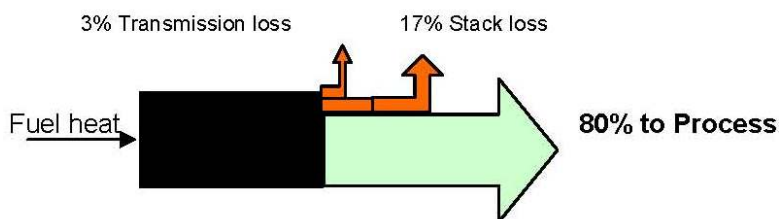
Another key advantage often overlooked is that with individual gas heating systems located around the plant it is possible to use the energy only when and where it is needed, as opposed to the central system which generally has limited turndown causing more wastage of energy.

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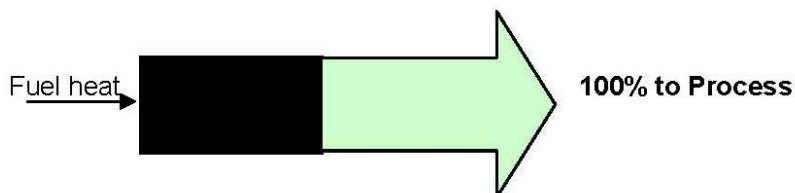
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Comparison Diagram

HPHW Heating Model:



Direct Gas Heating Model:



RECORD WIND SPEED AND DIRECTION ANYWHERE, ANYTIME!

OMEGA has increased the capabilities of the Airstat PDA once again. The portable handheld device can now be used to measure wind speed and direction. The basic layout of the program is the same, except the grid fills with Speed and Direction (360 degrees) instead of Downdraft and Crossdraft. OMEGA Engineers developed the software to work in UV mode. This way BOTH versions of the software can run without having to reconfigure the Windsonic head. The program can also be ordered to measure in either feet per minute (FPM) or meters per second (m/s). There are a few more added features for the PDA. One is an expanded grid size, allowing the user to scroll and view up to almost an unlimited number of readings (99,999). With this new grid, the user can instantly browse through a days worth of data to check for consistency before transferring the data to a computer. Another new feature is the measurement counter. This feature eliminates confusion about how many measurements have been taken as it counts up every time a measurement is taken.

For our current customers, these changes to the software can be added to your PDA for a low one-time cost, please contact Derek Decker at (248) 299-8950 for details. For our future customers, the software changes will be included with the purchase of an Airstat PDA.

Contributed by: Derek Decker – Project Engineer

Energy Savings Opportunities for Ovens – Reducing Heat Waste

Omega has performed numerous energy audits over the years and one of the most overlooked areas for energy savings is the optimization of oven airflow balance. By properly balancing the oven, typically we find opportunities to reduce the oven exhaust volumes and air temperatures down to design parameters. Granted, the volumetric exhaust output of a typical oven is usually very low, but it is heated to a very high temperature (+300°F), so the heat load requirement is very high and that impacts the bottom-line cost to operate the system on a daily basis.

Most ovens will directly exhaust to atmosphere after the airflow has passed through the oven abatement system. As this air has already been heated to setpoint conditions, it allows the opportunity to recover that heat energy for other uses. As most ovens are not setup to recover the heat energy, all that energy is wasted and un-used.

An example of how heat recovery can be implemented is through the use of equipment such as heat exchangers, which can take the heat load of oven exhaust air and transfer it to other processes that require heating. Examples of this would be the airflow entering a spraybooth, oven, or the building ventilation system. By preheating the incoming air, the heat load of other facility processes is reduced, which results in a reduction of the amount of natural gas used per month. For an example, if an oven's exhaust heat were reduced from 10,000 SCFM @ 400°F through the use of a heat exchanger to 300°F, the potential savings would be around 1,080,000 BTUs per hour. Using a standard utility rate of \$8.00 per MMBTU per hour, typical savings of this reduction would be around \$55,000 per year.

Contributed by: Tim Moyer – Kettering Co-op Student

Current Projects

Energy related work is ongoing at automotive plants for General Motors, Toyota Motor Manufacturing Kentucky, Honda of America, Automotive Component Holdings (ACH) and Auto Alliance Inc.

Energy service projects are continuing for ACH and Auto Alliance Inc. Plants.

There is another major development in the works for the Airstat PDA. OMEGA has begun developing another new version of software that will allow the unit to be wireless via Bluetooth. With Bluetooth enabled, the Airstat PDA can be extended on a pole while the user simply holds the PDA and presses a button. Other benefits of Bluetooth are:

- Measurement Versatility - unit can be placed in areas where humans may not fit or should not stand for prolonged periods of time
- Convenience – The PDA can remain with the user at all times, but can still be attached to the Equipment Mold if necessary
- Wire Free – Communication is wireless. No physical connection reduces the potential for a bad connection or worn out pins from frequent use.
- PDA Selection – With Bluetooth enabled, any brand name PDA with the Pocket PC Operating System can be used.

OMEGA will keep its customers informed of the latest development, as the Airstat PDA climbs to new heights. There will be upgrades available for our current customers who have already purchased Airstat PDA Version 1.0.

BRAGGING CORNER



Jeff and Julie Wallis are pleased to announce the engagement of their youngest daughter, Rebekah to Benjamin Miller. Ben is an Operations Specialist in the Navy. Beka has recently received her Associates degree in Science and is currently pursuing a second degree for Veterinarian Technician.

Eric Gifford, OMEGA's Engineering Manager, was married to Kristen on August 26, 2006. They explored Greece on their honeymoon and came back to work in full swing. Kristen is a speech therapist, working in the local area. The newlywed couple will reside in Royal Oak. Congratulations to the new couple!



Jeff Wallis recently received an award from the Troy Police Dept. As part of his responsibilities at the DPW for Troy, Jeff inspects fatal accident vehicles. Jeff's expert witness in this case helped the police to convict a drunk driver who took the life of an innocent victim. Julie, her mother Joyce, daughter Susan and grandson Connor all attended the awards ceremony.

Mich-Again



Detroit's First Railroad



Detroit's railroad system began to develop soon after the improvement of its highways and for years far surpassed the roads as a practical mode of transportation. The first lines were state owned and ran inefficiently, but in 1846 private investors took them over and vastly improved its operation.

The first line was the Detroit and Pontiac Railways, built in 1838, with twelve miles of tracks almost reaching Royal Oak. At first, horses drew the cars, but in 1839 a steam locomotive replaced them. By then the original depot, at Dequindre and Jefferson, had been moved to Gratiot and the line extended. This expansion drew a lot of protests from nearby property owners who feared the sparks, and claimed that the noise and the machine frightened their horses and cows. In 1852, the investors caved in and changed the route after angry citizens tore up the tracks.

Michigan Central was the second railroad. After that, there was no stopping the system.

Contributed by: Annick Hivert-Carthew



OMEGA Productive Services, Inc.
MISSION STATEMENT

TO PROVIDE PAINT SYSTEM – PROCESS IMPROVEMENT SERVICES THROUGH CONTINUAL IMPROVEMENTS OF OUR QUALITY MANAGEMENT SYSTEM, TO ENHANCE OUR CUSTOMERS' SATISFACTION OF SERVICES PROVIDED; ON TIME, ON BUDGET, EVERY TIME.

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THE PINES

(Robert P. Tristram Coffin)

Behind the barn was mystery,
The pine trees there were like the sea
When wind was up; but it was more
Than waves upon an unseen shore
That made the boy's heart burn and sing.
He knew well there was a thing
In that spot which bound in one
All splendid things from sun to sun –
Amber jewels of roosters' eyes,
The floating beads of golden flies,
The rainbow's lintel of brief light
Arched across the door of night,
A duck's white feather like a flower
On a pool left by a shower,

The hot sound, steady, small, and keen,
Of August mowing by machine.
The cool sound of a scythe. The small
Madness of the cricket's call,
The sudden smell of apples in
October twilight from a bin,
The pleasure, lonely and immense,
Of the hearth-cat's confidence.
The pines behind the barn somehow
Joined the lowing of a cow
To the moon that marched through crowds
Of angels of fair-weather clouds.

The pines possessed the ancient right
Of opening doorways in the night
To let the day and cockcrow through,
They built a fire in the dew,
Laid the hand of East in West's,
Filled the eggs in robins' nests
With thunder rolling deep below
The earth at night. They mingled snow
Of Junetime daisies with December's,
And built the roses in the embers.

It took a boy of ten to see
Such a tremendous unity.