



INDUCTION HEATING – THE RIGHT BLEND FOR ESSO

The Esso Petroleum Company Ltd blends lubricating oils at a site in Purfleet, Essex. There are 120 employees.

THE PROBLEM

Two steam heated ovens were used to heat 45 gallon drums containing oil additives. This is necessary to reduce their viscosity before they are emptied into the main mixing tank.

Each oven could accommodate four drums at a time and took approximately eight hours to reach the required temperature of 60–70°C.

Esso was unhappy with this procedure because it lacked flexibility. All of the drums had to be heated to the same temperature irrespective of the individual requirements of the different types of additive. So ovens often operated only part full with resulting loss of efficiency. There was often inconsistency in the final product because the steam ovens failed to give a complete melt. The ovens – plus the associated area for handling the barrels with fork lift trucks – also consumed valuable working space. And the whole time-consuming process encouraged corrosion, resulting in a high drum reject rate.

THE SOLUTION

Esso has now closed down its steam heated ovens and installed electric induction drum heaters. Because of their compactness the new heaters have been installed along a wall adjacent to the mixing tank and are serviced by a small overhead crane. The crane lifts the heater out of the way while the drum of additives is positioned beneath it.

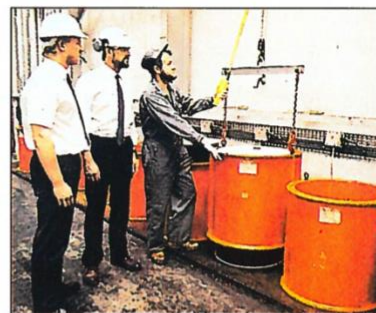


THE BENEFITS

The cost and performance benefits of Esso's new induction system can be summarised as follows:

- Process time reduced from eight hours to two hours
- Heating costs down by 92%
- 50% reduction in additive wastage
- 25 sq metres of floor space released for more productive use
- More consistent oil mixture quality
- No risk of additive degradation, due to better temperature control
- Reduced corrosion – fewer drums rejected

"In addition to all these benefits the electric induction heaters have cut our previous maintenance burden down to practically zero," comments Esso's Maintenance Manager, Mr A Tidey. "The working environment is cleaner, cooler, quieter and safer. Reducing running costs was not the



major consideration – even so, payback should take no more than three years. The new electric drum heating system is making a major contribution to our current modernisation programme.

Industrial Sales Engineer: Richard Jupp

Electrical Equipment Supplier:
LMK Engineering Ltd., Harlow, Essex.

Electrical Contractor: Esso Petroleum Ltd