Application Literature
Case History

Recovering Heat Conserves More Than Energy

The ULTRAMAX® Welded Plate Heat Exchanger plays a vital role in energy recovery at United Kingdom energy-from-waste plant.

Conservation of the natural environment and resources is often considered a cost prohibitive venture. Yet, when faced with new European Union legislation to reduce the use of landfill sites, the United Kingdom found a socially equitable, economically viable and environmentally sound method to reduce the 28 tons of waste produced per year: energy-from-waste (EfW) technology.

Now one of the cleanest sources of power, EfW technology offers the ability to decrease the volume of waste while recovering energy. The sophisticated process burns waste in modern boiler furnaces, capturing the released heat to make steam and electricity. Maintaining the high thermal efficiency required of EfW technology is crucial to maximizing power generation cost-effectively.

Recovering heat from corrosive flue gas

One of the newest EfW plants, operational in August 2004, is designed to handle non-recyclable waste, replacing the area's previous landfill waste system. Now responsible for processing 60,000 tons of municipal waste and 5,000 tons of clinical, animal and oil waste, the £37-million plant produces 6.8 MW of electricity, or 10% of the local area's power.

The welded ULTRAMAX® plate heat exchanger functions reliably in chemically aggressive environments.

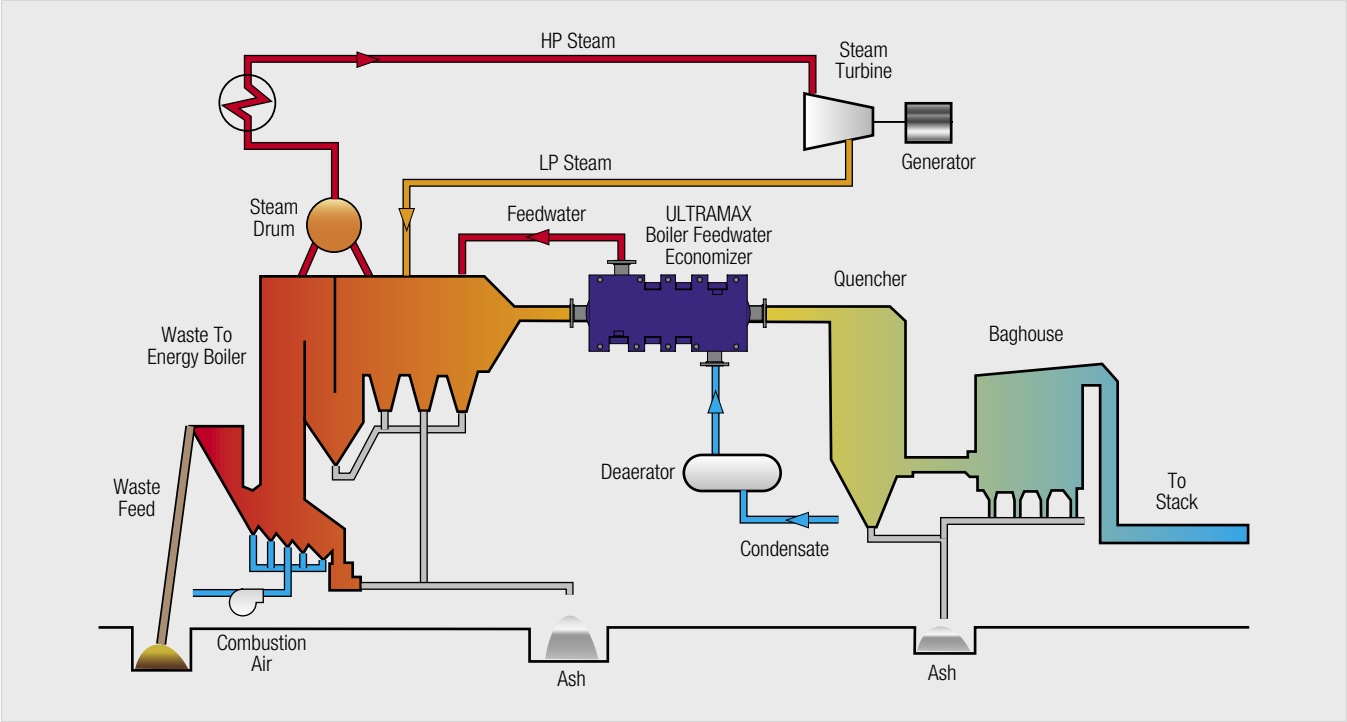
To increase the energy efficiency of the operation, the EfW plant selected ULTRAMAX® Welded Plate Heat Exchangers to transfer harvested heat from corrosive incinerator flue gas to the boiler feedwater, raising the temperature from 40°C (104°F) to more than 65°C (149°F). The high temperature and pressure ratings of the ULTRAMAX are ideal for extensive use in chemically aggressive processes.

The ULTRAMAX is designed for process temperatures from -196°C (-321°F) to +300°C (572°F) and process pressures up to 70 barg (1016 psig), far exceeding the 200°C (392°F), 18 barg (261 psig) requirements of the facility. Operating in the same way as a conventional plate & frame heat exchanger, the welded ULTRAMAX uses alternating channels for hot and cold media and true counter-current flow. But its plate welding technology eliminates conventional continuous side weldments, enabling it to more efficiently accommodate differential thermal expansion while also reducing manufacturing costs. Plus, for the most demanding applications, the ULTRAMAX offers optimum performance with welding on every channel.

The ULTRAMAX also offers a more compact footprint than conventional shell & tube exchangers. In addition, the welded PHE is available in a range of standard connection sizes up to 304 mm (12 in.) and delivers closer LMTD (log mean temperature difference), compared to cross flow units.

Performance for economical thermal efficiency

With the superior performance of ULTRAMAX plate heat exchangers, the EfW plant is able to eliminate the community's reliance on landfills and supply 5,000 local homes with electricity.



The ULTRAMAX Welded Plate Heat Exchanger can withstand the corrosive and erosive effects of waste boiler flue gas as an efficiency-boosting feedwater economizer.

TRANTER®
The heat transfer people

North/South America
Tranter, Inc.
Wichita Falls, TX USA
Tel: (940) 723-7125
Fax: (940) 723-5131
E-mail: sales@tranter.com

Europe
Tranter International AB
Stockholm, Sweden
Tel: +46 (0)8 442 49 70
Fax: +46 (0)8 442 49 80
E-mail: info@se.tranter.com

Middle East/Africa/Asia
Tranter India Pvt. Ltd
Pune, India
Tel: +91 20-30519300
Fax: +91 20-30519350
E-mail: sales@in.tranter.com

www.tranter.com