

Electric Melt Furnaces

TECO

Electric Melt Furnaces

Introducing...

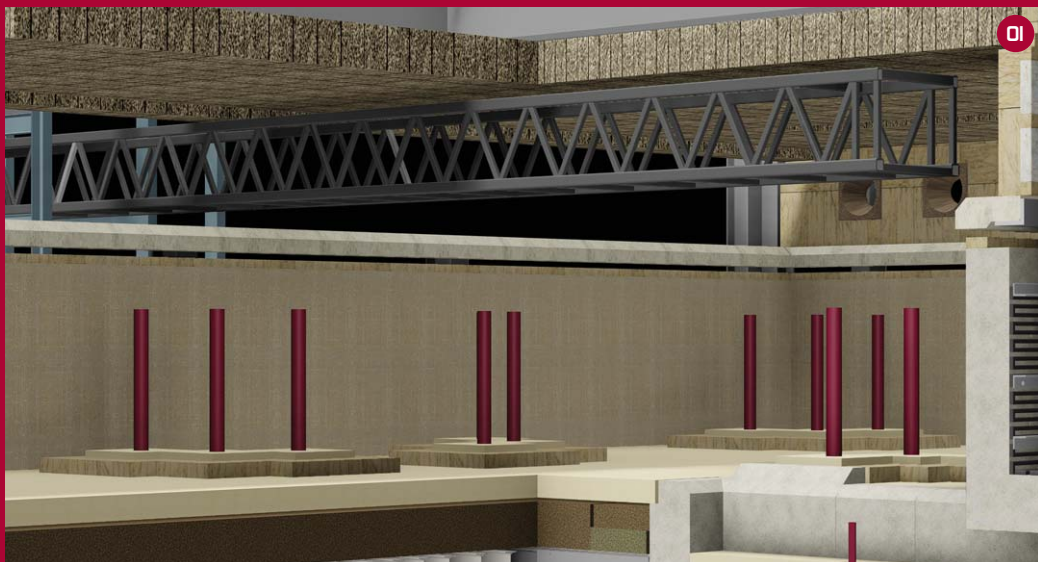
Cold-top electric melt furnaces are the most energy-efficient and environmentally friendly method of glass melting available. Since the electric melting process became viable in the early 1950's, TECO has continued to design and build hundreds of cold-top furnaces across the world, for all glass industries.

We also supply electric boosting systems which integrate with existing fossil fuel furnaces to help meet production and environmental requirements. Although the price of electricity can be a limiting factor, electric melt furnaces can still prove cost-effective.

With our depth of experience in electric melting processes, we understand how best to apply electrical energy to any glass making process.

Innovation creates:

- Cold top or hot top operation to suit your application
- Bottom rod, sidewall or top entry electrodes to meet your needs
- Range of voltages and frequencies available
- Greener technologies for glass production
- Processing from 1 to 270 tons per day
- Electric furnaces with a reputation for producing high quality glass
- Excellent thermal efficiencies for most glass types and capabilities

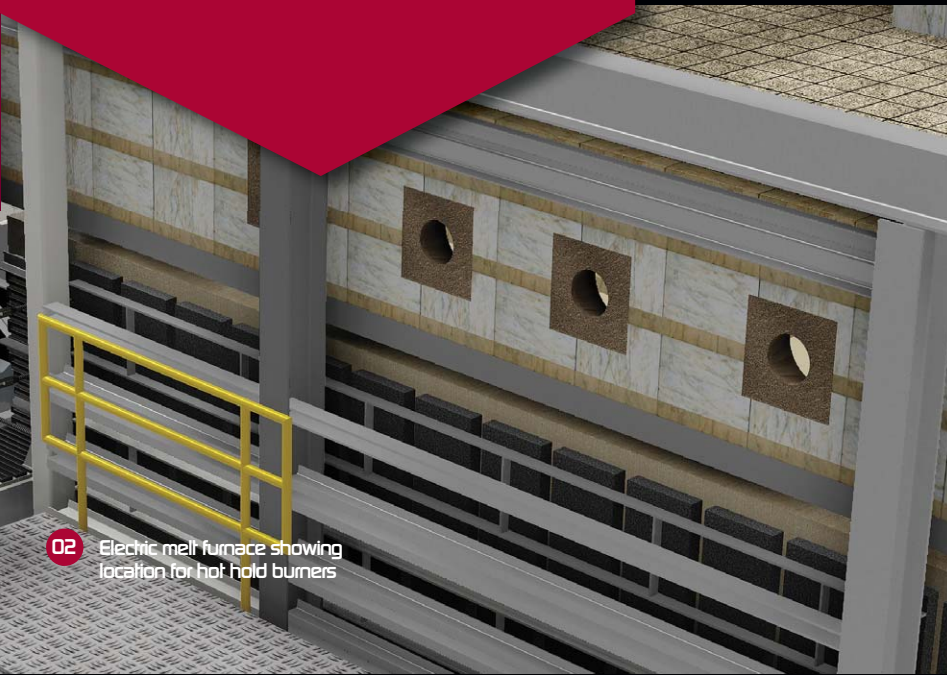


01 Diagram 1
Typical TECO electric melter showing electrodes

For more information about our individual services please contact us:

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Leading the way



02 Electric melt furnace showing location for hot hold burners

To maximise glass quality, TECO uses symmetrical two or three-phase circuits with balanced loads.

In addition, the systems are engineered to apply electrical energy where it will most improve the melting process.

Electric boosting

Can increase melting capacity, improve glass quality and reduce emissions in fossil fuel fired furnaces.

High frequency power

For special boosting applications, frequencies of up to 1,000 Hz can be used to extend the life of the electrodes when heating glass that contains heavy metals.

TECO technology: the difference is clear

The cold-top electric melt furnace, operating on the Joule principle, is an ideal glass melting process; both energy usage and emissions are the lowest available. The melting takes place vertically. Efficiency is enhanced by the insulating “batch blanket” or “crust”. The temperature drops from roughly 1400°C (2550°F) at the batch/glass interface to 50° (122°F) at the blanket surface. As a result, a cold-top electric melt furnace operates in the 75% efficiency range, about twice that of its fossil-fuel counterpart.

The batch blanket also reduces emissions by condensing volatiles within the blanket and returning them to the melting interface.

Designed to optimise performance and maximise efficiency, TECO cold-top electric melters and boosting systems feature bottom rod (vertical) electrodes to help minimise current density and maximise electrode life. Sidewall electrodes can be added to most furnaces where needed, such as adding electric boost during a campaign to optimise furnace pull.

Modelling

TECO provides both physical and computer modelling which can be used to establish maximum current densities. TECO can then configure the electric melters with current density kept low enough to ensure the electrodes will last the campaign life of the furnace.

Electrode selection

TECO will recommend electrode material depending on glass chemistry and ensure the correct size, shape and method of installation as determined by current density requirements.

Mixed batch considerations

TECO can provide audits for batch plant and material handling improvements at existing facilities without interruption to glass production to improve mixed batch consistency or provide a new batch plant at a new installation.

Electric Melt Furnaces

ONE GROUP - SIX COMPANIES

As part of the TECO Group, Toledo Engineering, Tecoglas and KTG Systems can offer complete capabilities in glass furnaces of all types, with KTG Engineering supporting this activity as glass plant equipment manufacturers. Zedtec are the TECO Group specialists in forehearth and working end technology. EAE Tech provides high quality industrial automation engineering services and custom control systems.

The TECO Group has been serving the world's primary glass manufacturing industry since 1927.



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