

HiTEQ aluminum melting solutions

Melting, holding, treatment and complete integrated delivery systems



Advanced technology

Advanced HiTEQ technology to meet today's and tomorrow's high quality standards

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Construction

Our furnace casings are designed to hold up for many years of continuous industrial operation. They are constructed of top quality steel plate and structural tubing reinforced with high integrity welding.

Refractories

Since furnace service life is so dependent on proper refractory selection and installation, we have spent many creative hours with some of the foremost ceramic engineering companies in the world to offer furnace refractory applications that last.

Combustion

We design our burner systems to be dependable, efficient and easy for maintenance crews to troubleshoot if problems arise. Conventional or regenerative burner systems are available.

Electric heating

We offer a variety of electric heating system designs featuring nickel-chromium and silicon carbide elements.

Control systems

Our state-of-the-art furnace controls provide full proportioning temperature features including full cascaded and PLC control systems. Gas systems include UV monitored flame safeguard packages with automatic ignition. The electric systems include complete SCR controls.

Metal dispensing

HiTEQ builds a complete range of metal dispensing systems, including dip out, tap out, tilt, pressure pump well and dosing.

Field service

Our service technicians are available to troubleshoot and repair all makes of furnace equipment and offer complete combustion adjustments with flue analysis. We also offer furnace maintenance, combustion and metal quality training for your personnel.

Furnace parts

HiTEQ offers a complete line of furnace replacement parts with fast service and competitive pricing with prompt delivery, value, design and technology.



▲ 4,200 kg (9,260 lbs.) per hour stack melter with chip melting option



▲ Automated metal transfer well



▲ 1,800 kg (3,970 lbs.) per hour wet bath reverb

What our HiTEQ stack melters offer

Low energy use, increased productivity and reduced emissions

With HiTEQ's stack melter, aluminum ingots and scrap are loaded into the top stack of the melter.

Fuel-fired burners, firing up through the charge, serve to both melt the material lower in the stack and heat the higher material. As the melted aluminum flows from the melt chamber to the hold chamber, the preheated metal drops lower and is itself melted.

New material is added to the top of the stack. Automatic metal transfer wells are available for ladle filling. The furnace waste gases are used to preheat the scrap as it is introduced into the furnace to lower the fuel consumption.

sure pump well is available for ladle filling. Large doors provide easy access to the bath.

The furnace design options can permit direct charge of sows or T-bars on to the melt hearth. The stack melter's energy savings, greater production and reduced emissions control costs offer aluminum casters a quick payback on their investment. Optional chip melting technology is available.



▲ Automatic PLC controlled bucket

What are the features of our stack melters?

Stack melters are available with production throughputs ranging from 500 kg (1,100 lbs.) per hour to 4.550 kg (10,000 lbs.) per hour.

The effective use of the residual melting heat rising through the stack to preheat newly added charge material greatly increases furnace efficiency. The stack furnace design can operate continuously and, therefore, is highly productive. Low flue temperatures result in reduced NO_x emissions, reducing pollution control equipment requirements. With no wet bath charging, the stack melter furnace enhances operator safety. Furnaces are available with recirculation or chip melting options. Optional pres-



▲ 1,500 kg (3,300 lbs.) per hour stack melter

Maximize crucible life, minimize energy use

HiTEQ crucible melting and holding furnaces

HiTEQ offers a complete line of gas and electric crucible furnaces available in sizes from 90 kg (200 lbs.) to 1,360 kg (3,000 lbs.) capacity. They are offered in tilt and stationary models and are constructed for rugged foundry and die casting applications.

Gas crucible furnaces

HiTEQ furnaces provide uniform heat transfer using full proportioning burner control systems. All furnaces are provided with a full combustion safety train including UV flame monitoring. The refractory lining is designed to provide superior service life and insulation quality. Complete control panel with flame safeguards and full proportioning instrumentation.



▲ 900 kg (2,000 lbs.) electric tilt crucible furnace



▲ Gas-fired crucible furnace

Electric crucible furnaces

Heavy gauge nickel-chromium alloy high temperature heating elements provide excellent service life and are repairable in the case of accidental metal splashing. Ceramic fiber element hanging system provides high insulation efficiency with excellent service life. Complete control panel including full proportioning SCR control system and microprocessor instrumentation with element temperature protection.

Available configurations

We offer stationary models for hand dipping or automatic ladling. Our nose tilt models are hydraulically operated with accurate and smooth tilt control. Electric and bail tilt models are also available. Quick disconnect systems are offered which allow you to melt in one location and transport to another for pouring. For continuous metal availability we provide indexing multi-crucible furnace pour lines.



▲ Electric crucible transfer ladle

Melting and holding at the casting station

HiTEQ compact mini-melter furnaces

HiTEQ's mini-melter furnace features a compact, dual-chamber design enabling foundries and die casters to melt and hold aluminum at the casting station. This eliminates handling costs to transfer molten metal and the associated temperature fluctuations that result.

Mini-melter furnaces are available with melt rates of 180 kg (400 lbs.) to 450 kg (1,000 lbs.) per hour and capacities ranging from 900 kg (2,000 lbs.) to 3,400 kg (7,500 lbs.).

Dry hearth charging chamber reduces the dangers of metal splash and prevents temperature drop caused by the addition of cold ingots to the metal bath.

Dual individually zoned, temperature controlled, full proportioning, high-turndown ratio burners provide precise control of the metal temperature ± 3 °C in the dipping well. A complete NFPA or other recognized local standards valve train and combustion control panel are included.

Large doors provide easy access for cleaning and unique tight-closure door seals help retain heat within the furnace. The mini-melter furnace's crucible-free design features an oxide resistant refractory lining selected for long service life.

Mini-melter furnaces are available with integral degassing and filtration options to maintain the highest level of metal quality. The furnaces are pre-packaged for ease and simplicity of installation. Optional stack can be added for charging returns and scrap for ultimate energy efficiency.



▲ 180 kg (400 lbs.) per hour mini-melter furnace



▲ Dry hearth melt zone



▲ Degassing and filtration well

Complete and fully integrated systems for continuous supply of metal to the casting station

HiTEQ means supplying complete casting systems that typically include a series of melters feeding a central launder system with integral metal treatment through degassing and filtering.

Continuous controlled flow to each casting station

With melt rates as high as 4.5 metric tons per hour, HiTEQ's fully-integrated systems are able to supply the needed metal to the casting stations for even the largest casting manufacturers.

The entire transfer system can be nitrogen purged to minimize gas pickup and oxide formation throughout the system. In-line degassing and filtration assures that high quality metal arrives at the casting station.

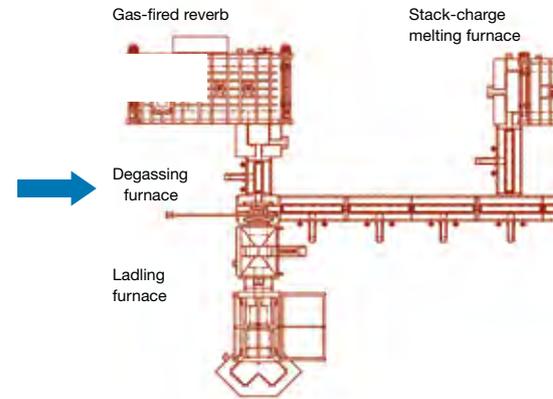
Heated launders maintain the desired metal temperature during the continuous transfer process. Electric holding furnaces for final casting operation can be an additional feature of the feed line.

The integrated system minimizes the chance of human error, allowing for continuous high quality metal and lower scrap rates. Elimination of manual metal transfer increases plant safety and metal quality control.

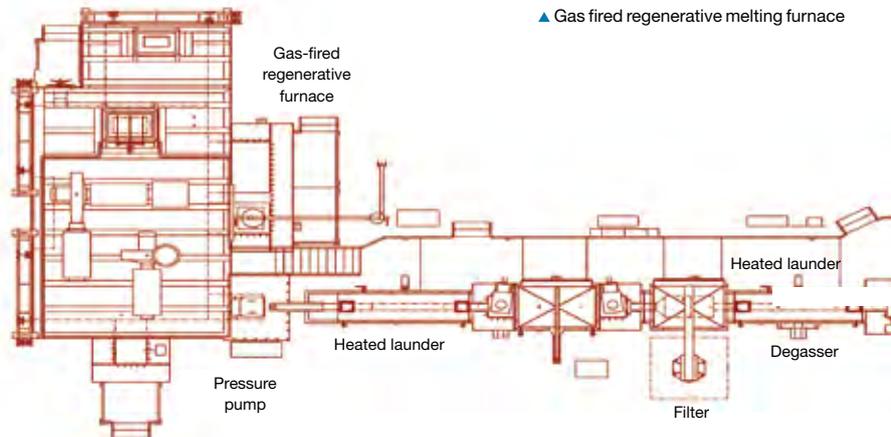
Producing aluminum engines for light trucks requires large quantities of high-quality metal, like that produced by this HiTEQ integrated line. The line includes a pressure pump metal transfer system.



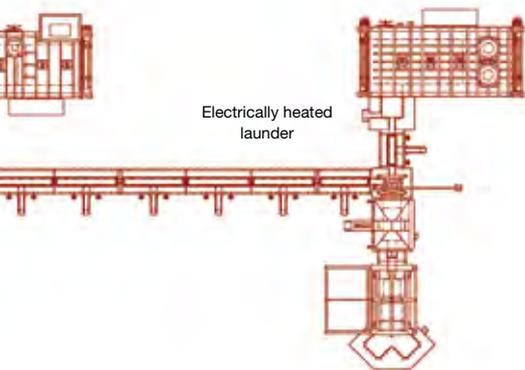
▲ This HI T.E.Q. aluminum melting, transfer, treatment, and holding line includes both gas reverb melting furnaces, and a stack charge furnace for energy efficient melting of returns and scrap.



▲ Gas fired regenerative melting furnace

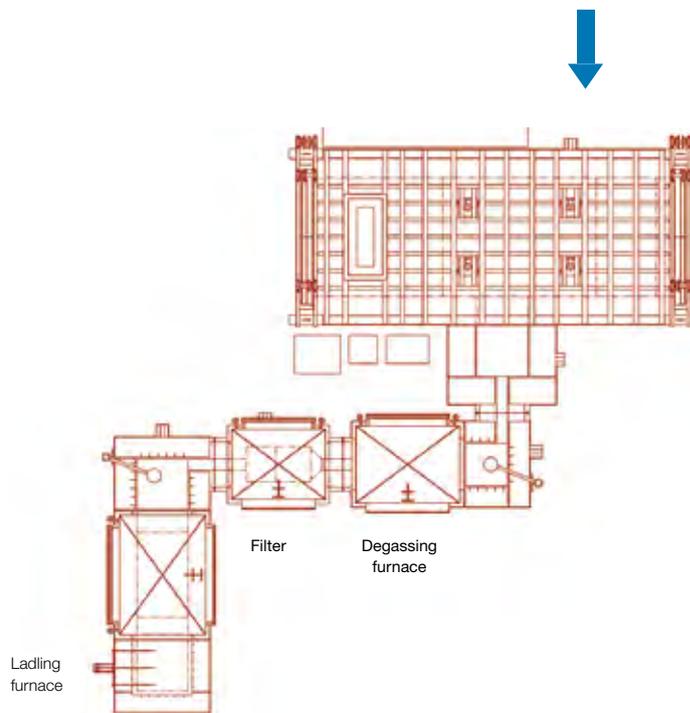
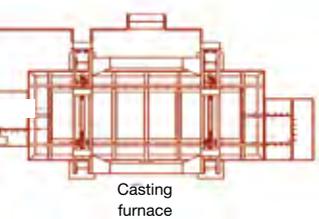


▲ Automotive engine casting line: This line includes a 4,550 kg/hr (10,000 lbs/hr) regenerative aluminum melting furnace with nitrogen pressurized pump well, heated launder system with a dual station degassing furnace, a metal filtration furnace and a 1.400 kg (30,865 lb.) electric casting furnace.



▲ A major manufacturer of marine inboard and outboard engines uses the fully-integrated HiTEQ aluminum melting, metal processing, metal transfer and holding system to supply metal to its lost foam engine block line.

▲ Automotive permanent mold component casting line:
This line includes three 1,200 kg (2,500 lbs) per hour melting furnaces with an electrically heated launder transfer line with single stage degassing furnaces and electric filtration ladle furnaces.



▲ Lost foam engine casting line:
This line includes a 1,800 kg (3,970 lbs) per hour wet bath reverb with a degassing furnace, filtration and 5,000 kg ladling furnace.

Maximizing operating efficiency

HiTEQ dry hearth melting furnaces

HiTEQ means supplying complete casting systems that typically include a series of melters feeding a central launder system with integral metal treatment through degassing and filtering.

All HiTEQ furnaces feature rugged steel construction built to hold up in casting shop environments. Tough refractory construction uses high quality, high alumina grade refractories with non-wetting additives. The HiTEQ two zone high efficiency radiant roof or high velocity combustion system provides rapid melting on the hearth with unsurpassed hold zone temperature control.

A double door design provides easy furnace cleaning. Modern control systems provide full proportioning instrumentation with complete flame safeguards for dependable flame monitoring.

The HiTEQ burner ignitor system eliminates nuisance shutdowns and relight problems due to undependable pilot systems.

Improved safety is provided when charging scrap that may have moisture present versus wet bath charging. This is also a benefit when charging scrap with steel inserts which can be removed from the hearth after melting without alloy contamination. Metal transfer is available in manual tap out or automatic pumpwell configurations.



▲ 1,800 kg (3,970 lbs.) per hour dry hearth melter with filtration



▲ Dry hearth melt chamber



▲ 1,000 kg (2,200 lbs.) per hour dry hearth melter

High capacities and melt rate

HiTEQ gas-fired, wet bath reverberatory and chip melting furnaces

HiTEQ offers a full line of high-efficiency gas-fired wet bath melting furnaces available with melt rates from 90 kg (200 lbs.) to 4,550 kg (10,000 lbs.) per hour and holding capacities up to 56,700 kg (125,000 lbs.).

Many configurations to meet your plant requirements

Our rugged steel construction is built to last using high quality steel plate and structural tubing. Refractory linings are designed using the highest quality refractory materials available in the marketplace today, with non-wetting additives.

HiTEQ combustion systems offer high efficiency melting and are designed to eliminate the nuisance problems inherent in many other systems.

A variety of burner approaches and types are available including roof fired, high velocity, and regenerative burners. Modern control systems provide full proportioning instrumentation, including optional PLC control systems. Fuel trains include complete flame safeguards with UV monitoring and safety train components to meet NFPA guidelines.

HiTEQ designs the furnace to meet your requirements including side or inline charge wells, sow preheat hearths, ladle wells, pumpwells, and manual tap out. Optional

tilt chassis as well as recirculation wells for high-efficiency chip and scrap melting are also available.



▲ 1,200 kg (2,640 lbs.) per hour radiant roof wet bath reverb



▲ 4,550 kg (10,000 lbs.) per hour regenerative reverb



▲ 1,500 kg (4,850 lbs.) per hour chip melting wet bath furnace

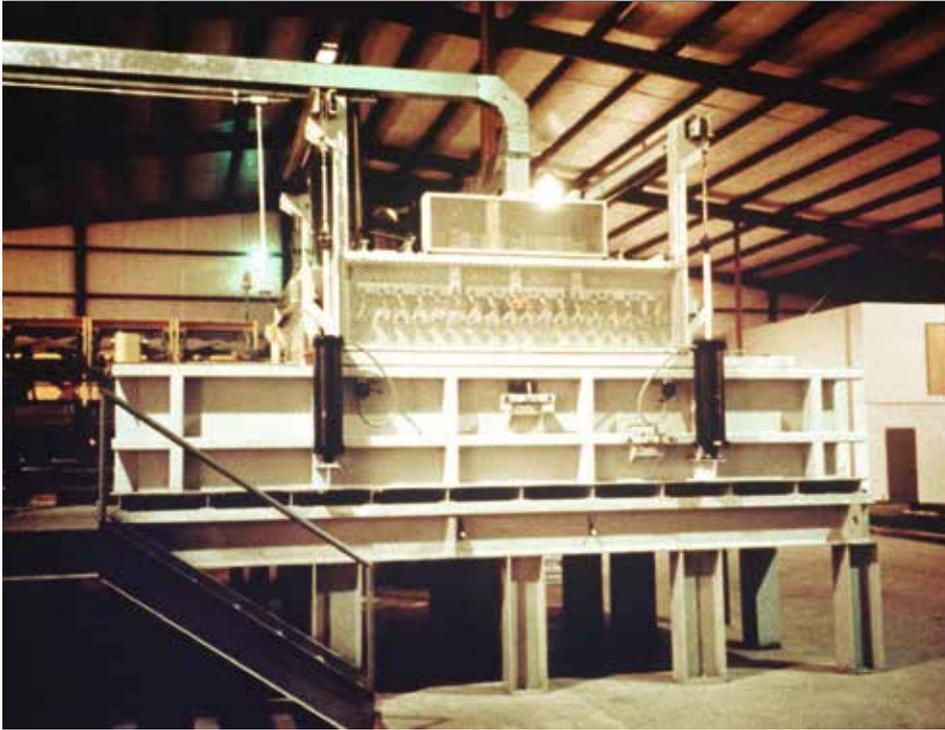


▲ 2,200 kg (4,850 lbs.) per hour high velocity barrel tilt melter

High efficiency

Electric aluminum furnaces for melting and holding

HiTEQ offers a complete line of radiant electric heat melting, holding and dosing furnaces. Melt rates range from 90 kg (200 lbs.) to 1,360 kg (3,000 lbs.) per hour. Low energy holders are available in sizes from 680 kg (1,500 lbs.) to 27,215 kg (60,000 lbs.).



▲ Electric holder with dosing furnace option



▲ 900 kg (2,000 lbs.) per hour electric radiant resistance melter



▲ Precision electric dosing furnace

HiTEQ furnaces feature rugged steel construction for long life with continuous weld lower construction.

The refractory construction is designed to meet the needs of electric melting. High alumina specialty refractories with non-wetting additives are used to provide superior service life.

Our design personnel have over 50 years experience in application of electric melting furnaces. High output silicon carbide elements are used with conservative watt loading for extended life. Elements are easily changed without affecting production schedules.

The main power center includes high dependability SCR drives with full proportioning microprocessor instrumentation for accurate temperature control.

Metal quality is unsurpassed with electric heating resulting in low inclusion and gas porosity. HiTEQ electric melting and holding furnaces provide a flueless, quiet, comfortable working environment for increased productivity.

Well configurations are designed to meet each customer's specific configurations and casting requirements. Dosing furnace technology provides accurate metal dispensation directly to the mold or shot sleeve.

Meeting every requirement

HiTEQ degassing and filtration furnaces as well as electric launder systems

HiTEQ offers one of the most complete lines available for degassing and filtration of aluminum for the metal casting industry. We can provide equipment for the smallest volume job shop to large automotive casting lines.

HiTEQ is a proven leader

HiTEQ also provides electric launders to the major automotive manufacturers, die casters and foundries.

We offer a complete line of degassing equipment including porous lances and rotary degassers as well as state-of-the-art filter furnace technology to provide metal quality for any casting requirement.

Our degassing and filtration furnaces are designed to accommodate new and existing shop layouts. Filtration furnaces are available with roll-off lids for easy filter changing and cleaning.

HiTEQ electric launders are designed to provide continuous metal transfer from the melt furnace to the casting furnace with uninterrupted flow.

Cylinder operated lift lids provide easy access for skimming and cleaning. Heat is provided by high output electric nickel chromium or silicon carbide elements for years of dependable service.

Highly insulated refractory construction provides energy efficient operation. Precast and cured hot face liners provide easy replacement with minimum production interruption.



▲ 182 m (600 ft.), 12 station electric launder system



▲ Single chamber degassing furnace



▲ Roll-off lid electric filtration furnace

HiTEQ equipment

Furnace type	Furnace application	Casting station melting	Casting station holding	Die casting or foundry central melting	Chip re-melting	Wheel & brake casting	Engine & automotive casting
Gas & electric crucible		●	●				
Low energy holder			●			●	●
Mini-melter furnace		●	●			●	
Dosing furnace			●			●	●
Gas reverb furnace		●	●	●	●	●	●
Electric reverb furnace		●	●	●		●	●
Dry hearth furnace		●		●	●	●	●
Electric degassing		●	●	●	●	●	●
Electric filtration		●	●	●	●	●	●
Gas stack melter		●		●	●	●	●
Heated launder system			●	●	●	●	●
Barrel tilt furnace		●		●		●	●
Re-circulation equipment				●	●	●	●
Fully-integrated systems				●	●	●	●

Worldwide presence, wherever you need us

ANDRITZ METALS is a specialist for industrial furnace plants and a leading supplier of engineering, know-how, and process technology to the iron and steel,

copper, and aluminum industry. ANDRITZ METALS delivers furnace systems for reheating and heat treatment, as well as melting and refining furnaces. ANDRITZ operates over 220 production sites, service and sales companies all around the world.

HiTEQ provides solutions, products and services over the entire lifecycle of aluminum melting systems. A well-developed service network ensures a fast and competent response to customer needs.

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