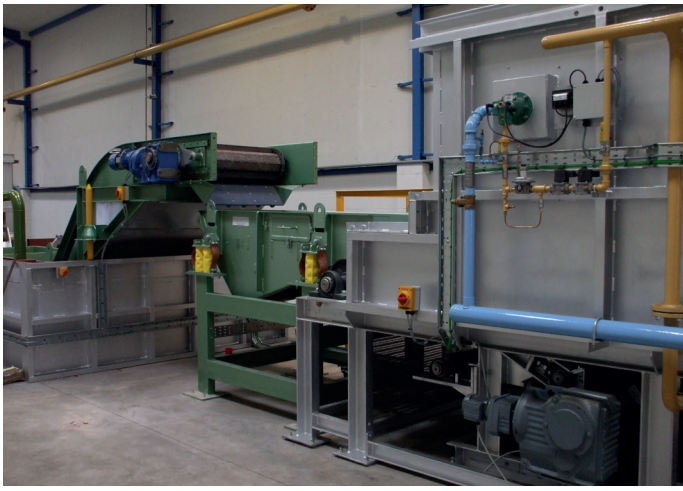


Continuous Water Quenching Heat Treatment Plant



Premier Stampings



Continuous Heat Treatment Plant – Crosby Premier

2013 marked a milestone for Crosby Premier Stampings with the supply of a continuous water quenching heat treatment plant. Northern Combustion Systems provided a package which included the design, manufacture, installation and commissioning of one hardening furnace, one tempering furnace, one water quench tank and associated loading and transfer systems providing continuous treatment. The equipment utilises the latest PLC technology and was designed to the customers specific requirements, which allows for full control of mechanical properties of all their components.

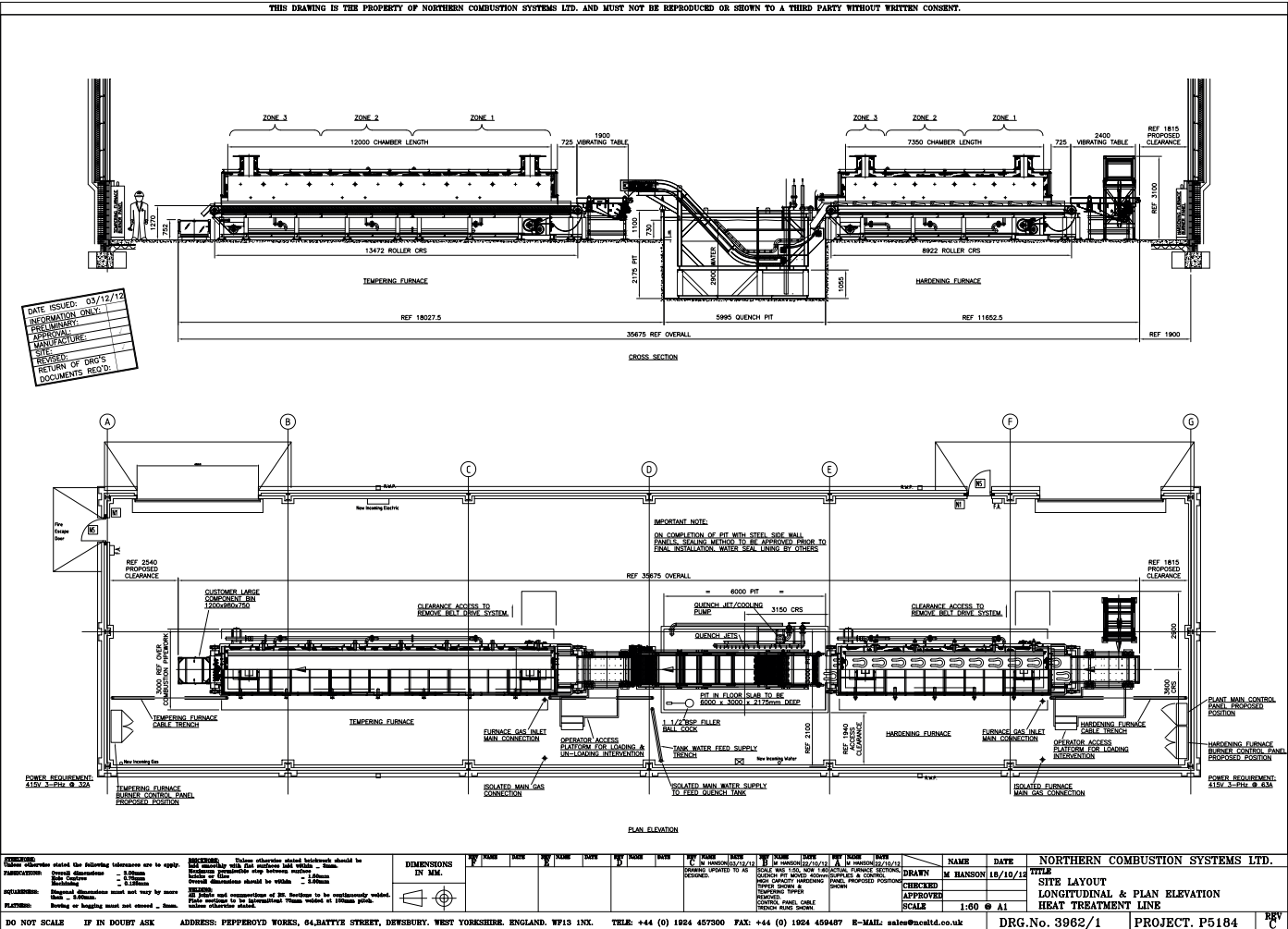
The equipment supplied achieves a throughput of 1 tonne per hour, components generally 0.07kg to 30kg batched in stillages which are transferred by forklift into a 700 kg capacity inlet tipper unit. The hydraulic tipper unit, push button operated, loads components on to an inverter controlled vibratory table which supplies components into the furnace equally loaded across the width of the belt.

Large components up to 60kg bypass the tipping system, being manually loaded onto the high grade 37Ni/18Cr furnace mesh belt, the hardening furnace is gas fired with medium velocity cross fired burners, operating in 3 zones of control. The furnace suitable for preheating up to 1000°C.

Components are discharged on to a swan neck conveyor via a furnace exit chute and baffles reduce the impact of the components on the conveyor. Water jets are provided at the conveyor to break down the steam blanket, thus increasing quench rates. Warm water is re-circulated through a heat exchanger utilising a cooling tower.

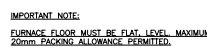
Components from the swan neck conveyor discharge onto an inverter controlled vibratory table to ensure even loading of the components across the width of the belt before entry into the tempering furnace. A loading chute is mounted at the top of the vibratory table to allow components to be loaded directly into the tempering furnace.

The gas fired tempering furnace has a grade 304 stainless steel mesh belt and is fired in 3 control zones, The tempering furnace is designed to temper components at 550°C. Components from the tempering furnace are discharged down a chute into clients stillages.





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