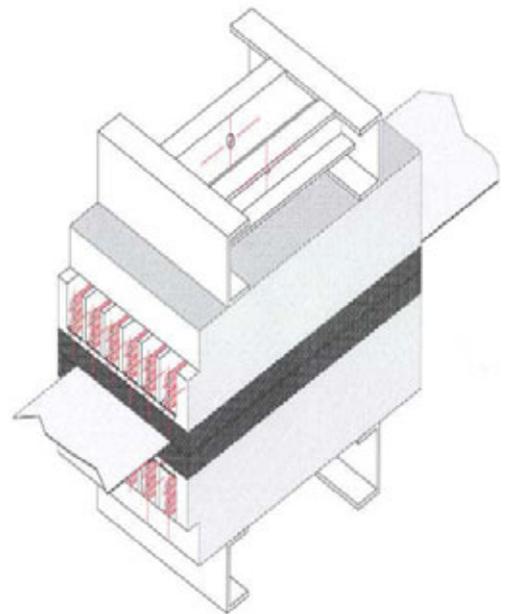
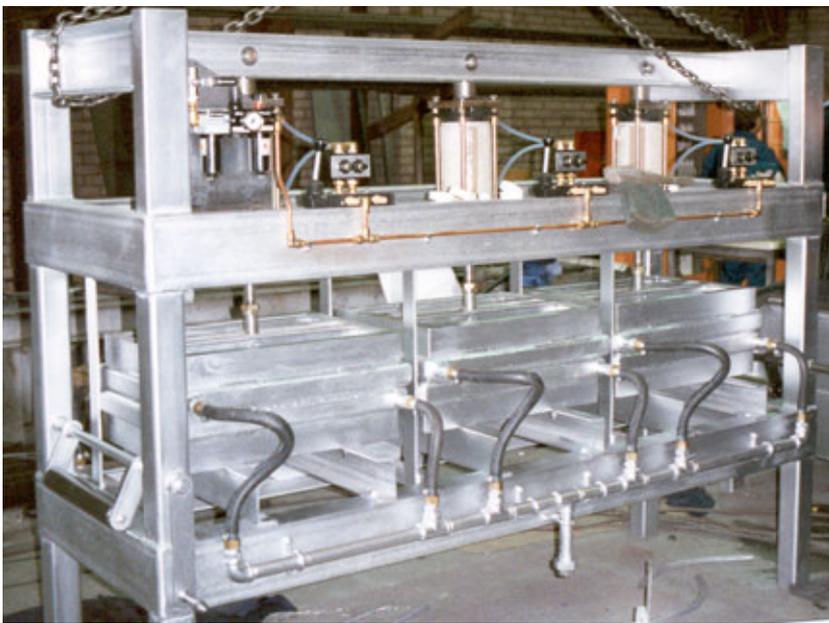


# Bath Hardening Steel Strip

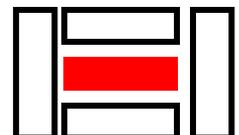
**Excel Heat** has supplied Ben Bennett Jr Ltd an advanced plant which will harden high quality steel strip and flatten it to within 1000th of inch per inch. This is the second such line supplied. Both installations incorporate a temperature controlled bath containing a molten Bismuth lead alloy used as a cooling medium, and pneumatic operated final cooling and flattening dies to continually treat steel strip at a rate of up to 250kg/hr. the equipment has been designed to fit into an existing hardening and tempering process to improve quality, increase production and provide greater flexibility. The steel strip to be treated is fed at approximately 900°C into the lead bath, this induces uniform and rapid cooling which, when followed by final cooling to ambient, via a set of water cooled dies, results in quench hardened steel. A further set of heated planishing dies complete the flattening process.



The lead bath is constructed from mild steel plate and is designed to be easily removable for maintenance. The heat source required to melt the alloy is provided by electric heating elements which are mounted in an insulated chamber beneath the bath. This heating chamber is internally lined with low thermal mass insulation. To counteract the heating effect of the very hot steel strip entering the bath and to maintain the molten alloy at the required temperature, an automatic water cooling system is employed. Channels are incorporated into the bath structure itself and cooling is achieved in three stages, regulated by electrically operated valves. Once the steel strip has been quenched in the lead bath it is fed between cooling dies, which contain a labyrinth of water passages sandwiched between steel plate for final cooling and hardening. The final flattening stage incorporates graphite plates, held between steel plates specially constructed to house electrical heating elements encased in sintered Alumina sleeves. Each set of dies is fitted with double acting pneumatic cylinders which are controlled to aid the flattening process.

**For more information on this product or our range of ovens, furnaces and spares contact Mike Kealy**

## **EXCEL HEAT**



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