



Lessons for Britain from the US steel crisis of the 1980s

Tata Steel has sent the British government scurrying into action after the Indian firm put its UK assets up for sale and left more than 15,000 jobs at risk. Debate has centred on whether the state should provide incentives to potential buyers, and how it should respond if no buyer can be found. The temptation is to protect the industry from “unfair” competition, but to intervene as little as possible so that markets can find some balance and the industry can rescue itself. However, the experience of the US steel industry in the economic doldrums of the 1970s and 1980s shows what a painful path that can be. From 1974 to 1986, the American steel industry was mired in a deep depression. The primary cause was the ten-year economic downturn sparked by the OPEC oil embargo and the Iranian revolution. During these recessions consumer markets contracted significantly and demand for steel weakened considerably. With markets for steel shrinking, America’s integrated steel manufacturers were forced to cut their production and sell steel at unprofitable prices. Clearly, these conditions were not conducive to turning a profit and America’s steel firms lost a large amount of money on every tonne of steel that they sold for much of this period.



Ultibend Industries improves productivity with Electric Tube Benders



Two new all-electric tube bending machines are helping Ultibend Industries to boost the manufacturing productivity of stainless steel tube fittings for food and beverage processing systems. Customised to suit Ultibend's proprietary manufacturing process, the machines from Unison automate the bending of tube fitting shapes such as elbows and U-bends, in sizes from 1/2 to 4 inches diameter. Initial manufacturing operations have demonstrated that the new machinery boosts manufacturing speed compared with the previous hydraulic bending process.

Ultibend started in 1992 as a subcontract tube bender, supplying architectural pipework. The company also found a market for tubular parts for the strong local food processing industry, and evolved from subcontract work into offering a broad range of stainless steel tube fitting parts for applications including food, winery, brewery, dairy and sanitary processing.

As part of the company's development, Ultibend designed and manufactured its own tube bending machines. There are now four

of these machines and they have served Ultibend well, but they are hydraulically powered and critically for the future development of the company only offer a very basic level of machine and operator control. As the company has

expanded, it became interested in upgrading the bending process with more flexible all-electric machines using software controlled servomotor controlled bending. Developing its own solution to this upgrade would involve familiarity with servomotor based motion control as well as much more sophisticated machine control and interfacing software and it was viewed as too big a step for the Ultibend engineering team. So, it decided to look to the commercial market for an upgrade.

Ultibend settled on Unison as the supplier, largely because of the fact that it had started life as a machine controls and software supplier and that a large proportion of its output was customised.

"We didn't want a standard machine, so discovering Unison was great. Their willingness to customise and the fact that they are genuine machine control experts gave us confidence that we would get the far-reaching solution that we were searching for," says Ultibend's co-founder and director, Linc Turley. "The investment means that our business now has the manufacturing platform

to support substantial growth, including our current expansion into the USA and other new export markets."

One of Ultibend's unique advantages is the very high functional quality of its tube fittings. Bends are highly uniform, with the kind of ovality tolerances that would normally only be found in an aerospace workshop. This quality level is achieved by Ultibend's proprietary manufacturing process, which means that bent parts are exceptionally uniform as they come off the machine. Ultibend also developed its own clamping system, which allows short elbow and U-shape parts to be gripped and bent at the expense of trimming only a miniscule amount of scrap material. Both of these techniques have been incorporated in Unison's new customised machine design.

"Unison's customisation capability means that we've been able to emulate unique features Ultibend uses in its process, and then exploit the all-electric machine architecture to enhance productivity," says Jim Saynor, Unison's Senior Commercial Manager.

"The result is that the two new machines have increased output- while also providing much richer programming, networking and operator control facilities to open up further opportunities for progress."

The main reason the Unison machines speed the bending is the inherently greater control of motion that's possible inside Unison's software-controlled, all-electric machine architecture.

The software gearbox is able to control and co-ordinate several axes simultaneously for instance, avoiding the delays of a more mechanical machine such as the latency in response of a slave axis.