Project Report

Compact 800 and John Merriman & Sons helped Tubosider U.K. to improve its pipe-rolling

Tubosider – a successful manufacturer of corrugated pipe

Tubosider U.K. is a prominent manufacturer of corrugated pipe from 300 to 3600 mm in diameter in a variety of stock materials. These pipes are used in civil works for many purposes such as surface water culverts, as storm water and harvesting tanks, and as tunnels and under-passes under roads and railways.

A key machine for the manufacture of these pipes is quite a complicated multi-stage “rolling mill” which corrugates and spirally winds sheet steel stock into the various pipe diameters and lengths customers need.

The machine, representing a major production asset to Tubosider, has been producing helicoil pipes since its installation in 1969. Mechanically it is still in very good condition but the electrics had, quite obviously, become old and difficult to maintain, so the need to upgrade that part had been felt for some time.

Technical people at Tubosider were quite familiar with the firm John Merriman & Sons (JMS), a well renowned electrical engineering, panel-building and contracting company situated in Birkenhead, Merseyside, U.K., and had made use of that firm’s services before, so it became natural for our pipe-maker’s engineers to discuss the matter with JMS’ people when a suitable opportunity presented itself.

It did not take long for JMS’ engineers to discover that the potential for improvements was even greater than what first met the eye, in terms of ease, precision and efficiency of operation, thanks to the capabilities of modern computerized controls and the accuracy of today’s variable speed drives. So, Tubosider commissioned JMS to do the upgrade.

A few months later, by the beginning of year 2009, the new Compact 800 equipment was installed and commissioned. It consists of one AC 800M controller, one set of S800 I/O modules, two variable speed DC drives DCS 800, one Panel 800 operator panel, Compact HMI 800 software and various switchgear.

– We are very pleased with the upgrade, says Engineering Manager Mark Fegan of Tubosider about the installation: “The new equipment has boosted the capacity of the machine, improved the precision of rolling varying diameters and lengths, and reduced the amount of scrap metal offcuts generated.”

A rotating and forward-moving pipe run being cut into sections. The saw moves with the pipe to create a perfect, right-angled cut.

“I think another big advantage of the system we have put in is the fact that all the major system components come from the same source: ABB!”

Tubosider’s quite unique rolling mill is controlled by an AC 800M controller from ABB and a S800 I/O combination like this one.

– Set-up and handling is easier too, he continues: “Now the controller does the set-up and supervises the run in return for a limited set of inputs which can be taken straight from the production order, inputs that many more staff members now can make!”

– But there is more, Fegan hastens to add: “The new installation offers far better fault diagnostics than the old equipment did. So now, if a problem develops, the control system is usually able to tell us where it lies. In that process, the greatly improved technical system documentation adds further to the far better up-time we now get from our machine.”

– And finally, he says: “Our top management is happier too because they get red hot production figures straight out of the system HMI, specifying what we have been making, how much of it, and when.”

Mike Boston, Manager at JMS and closely involved in the

Tubosider project at the time, adds the system supplier's view: I think another big advantage of the system we have put in is the fact that all the major system components come from the same source: ABB! That ensures common principles in everything from design to documentation, and it eliminates interfacing problems. Now, that's a good thing for both Tubosider and us!

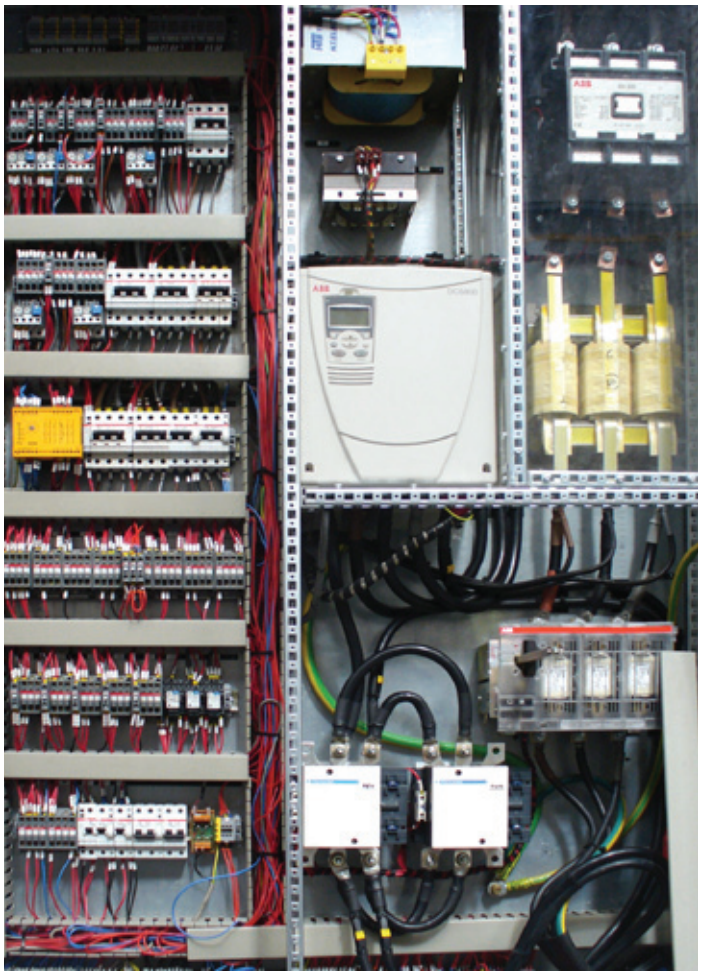
Due to the complexity of Tubosider's rolling process, this job was very challenging technically and therefore very interesting and rewarding to us technophiles at JMS to be involved in.

True, we were as certain as anyone can reasonably be before the event that we would succeed, but that didn't stop us from feeling weak-kneed when Tubosider and we did our first trial runs early in 2009. Imagine our relief when we found out early that everything worked – almost – as it should, that only a few additional tweaks were required to make it perfect!

And imagine our satisfaction when those tweaks worked as we thought they would!

But of course, the only confirmation of success that counts is your customer's word for it!

1. The input side of the mill where flat sheet steel is entered for corrugation and spiraling. 2. The main control desk equipped with an Panel 800 from ABB, a CCTV monitor, indicating lamps, pushbuttons and switches. 3. Local control panel alongside the mill. 4. Main drive panel e.g. containing an ABB DCS 800 thyristor converter.



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