

# Baker & Provan Engineering News

Heavy Engineering & Reclamation Specialists

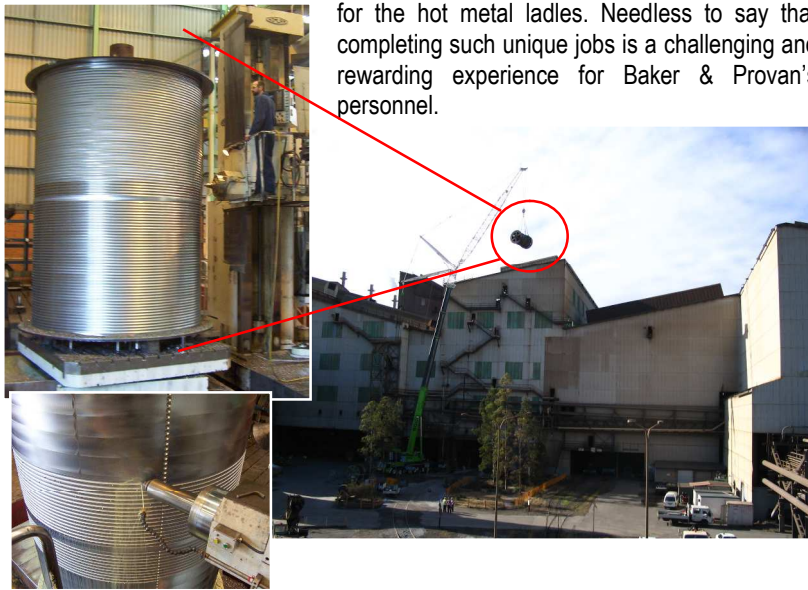


## January 2007 Newsletter

### ■ 30 Tonne, CNC Controlled, 6 Axis, Turn Table on Floor Borer

In early 2006, Baker & Provan manufactured (fabricated and machined) two heavy duty rope drums for Bluescope Steel. The Rope drums stand at 4 metres in length and diameter of 2.6 metres. The machining of the intricate left and right handed spiral rope grooves became a formality after proper planning of the job, with the services of a 6 axis modern CNC Floor Borer, with a rotary table rated to 30 tonne, and the all important highly skilled operators.

After delivery to Bluescope Steel, the rope drum was installed at Bluescope Steel's Port Kembla steel works in the Basic Oxygen Steel Making Plant to form part of a 470 tonne over head travelling crane for the hot metal ladles. Needless to say that completing such unique jobs is a challenging and rewarding experience for Baker & Provan's personnel.



repaired by locking in an insert and machining the diameter back to original specification. This solution provides a robust repair procedure which is guaranteed not to fail, within the design loads of the component.

Furthermore, the insert provides a secondary benefit. If the loads on the component cause wear over time, then it becomes a straight forward repair to replace the insert providing a quick turnaround and further savings on repair costs.

This procedure of locking in inserts was first developed in the marine industry to reclaim expensive engineering components, where any risk of repeat failures can not be entertained due to the isolation at sea.

Do you have expensive spares that your department should re-assess to determine if the failed items can be reclaimed by Baker & Provan, using reclamation procedures that are tried and tested within the marine and power industries?

### ■ Heavy Fitting Capability Makes for Rewarding Jobs

This large tong was fabricated, machined and assembled by Baker & Provan for Bluescope Steel. This tong was made from a special order of 75mm Bisalloy 80 plate. The tong stands at approximately 5 metres high and weighs around 14 tonnes. The handling of the assembly was quite tricky when aligning the large moving parts. The sequential assembly and handling of the heavy tongs was a challenging task, noting the freedom of movement of the heavy parts.

The tongs were an upgrade for the Hot Strip Mill within Bluescope Steel's Port Kembla steel works used to lift back up rolls weighing 75 tonnes.

The feedback received from Bluescope Steel was that the hold points inspections, communications and quality of workmanship was to a high standard, which is always rewarding for the personnel associated with the job and for Baker & Provan's high quality reputation.



### ■ Metal Spray Repair – Sometimes You Need Alternative Repair Options

While metal spray repair is a valuable repair procedure, it also has its limitations. The high speed bearing housing below is an example of a bearing face that was metal sprayed. The shaft bearing surface picked up on the housing and caused a repeat failure. Metal spray repair can be a poor solution when the bore diameter is large, when there is vibration or in high speed applications. Such conditions are likely to cause failure of the metal sprayed surface within 12 months of usage.

Baker & Provan has developed a repair procedure which permits failed bearing surfaces (and other surfaces) to be



## BAKER & PROVAN

HEAVY ENGINEERING & RECLAMATION SPECIALISTS

Contact: Steve Zakaria, Direct Line: 02 8801 9022

Business Development Manager

Email: [szakaria@bakerprovan.com.au](mailto:szakaria@bakerprovan.com.au)

Web: [www.bakerprovan.com.au](http://www.bakerprovan.com.au)