



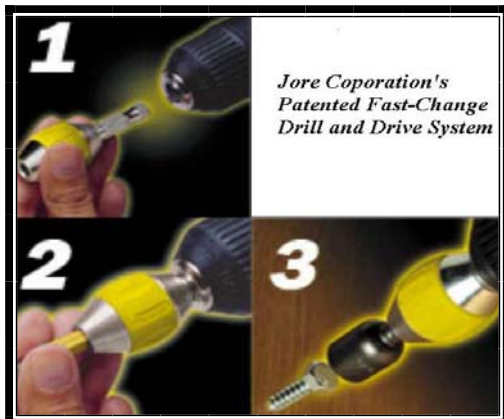
Timken Latrobe Steel

JULY 2004 CUSTOMER SPOTLIGHT

In this month's edition of the Spotlight, we are featuring a high speed drill manufacturer, Jore Corporation. Additionally this month we have an update on the ladle furnace project at the Melt Shop and an update on the CRM project.



Located in the heart of the Rocky Mountains in Ronan, Montana, Jore Corporation is one of the leading manufacturers of power tool accessories for professionals as well as the serious DIY craftsmen. Since it's entry into the highly competitive power tool accessories market in the early 1990's, Jore has become widely recognized for its innovation and product development. One of the standout innovations of Jore is the patented Fast-Change Drill and Drive System. The system utilizes a connector that chucks into any 3/8" or 1/2" drill. Once the connector is in place, hundreds of drilling and driving products featuring the universal hex shank are available to the user. Placing the hex shank bits into the connector eliminates the need to re-chuck a drill bit each time a new bit size is required. Jore innovation is also evident in the development of proprietary drill bit grinding cells which allow TLS high-speed steel to be transformed into finished drill bits without ever leaving the cell. TLS supplies various sizes of drawn Tat V-N coil to Jore for drill bit applications. A typical material supplied to Jore is forged at the PFF to a 4-15/16" RCS billet from 17-1/4" ingot. The billet is then ground on the CMI grinder and run through the billet tester. At the CRM, the billet is rolled to an intermediate black coil size and processed in the coil anneal furnace at the Cold Mill. A pre-draw and anneal is performed at



the Cold Mill before sending the material out for pickling. The material is then moved to Koncor for final processing where multiple draw passes and anneal cycles are completed at K-2 before the material is inspected and shipped to Jore. For more information on Jore Corporation, visit their web-site at: www.jorecorporation.com.

Melt Shop Ladle Furnace Update

The installation of the ladle refining furnace at the Melt Shop was completed in late April. The ladle furnace replaces the former “A” melting furnace. As part of the project, new current carrying electrode arms were installed, a new ladle stand was added along with a new water cooled roof, working platform, wire add system, and piping was done to allow for Argon stirring at the furnace. Also, some changes were made to the furnace control system to accommodate the change from a melting furnace to the refiner. To date, approximately ten trial heats have been processed in the new ladle furnace. The addition of the ladle furnace has three major advantages for processing of steel in the Melt Shop. The first advantage is the ability to achieve tighter chemistry ranges. The chemistry is brought into range or slightly below range at the AOD. Once in the ladle refiner, trim adds can be made using either wire or bulk additions to achieve the tighter chemistries. The second advantage is temperature control. When processing materials in the ladle refiner, the refractory is more thoroughly soaked through than with the typical process. This leads to less temperature loss when degassing or teeming heats. Also, the more even heating of the material leads to increased free openings of the heats when teeming in the pouring pits. The third advantage is the cleanliness of the steel. Cleanliness is achieved from the added Argon stirring in the refiner. The additional argon stirring allows more time for inclusion floatation which improves micro cleanliness.

View of the new ladle furnace from the Pulpit side of the Melting bay.



View of the new ladle furnace from the TIV end of the Melting Bay.



CRM Project Update

Since the last update on the CRM project much work has been done with the billet heating phase of the project. The billet loading table, induction furnace and holding furnace have been installed. The aerial transfer system that will convey the billets from the furnace to the three high mill has also been completed. Additionally, a new furnace control room has also been installed. Testing and adjusting of the material handling equipment, including the billet transfer system, rolls in the induction furnace and holding furnace, and the walking beams in the holding furnace, have been completed. The next phase of testing is to test and tune the heating systems of both furnaces. Heating algorithms (programs) will be developed to control the heating of different families of TLS product to be processed in the induction furnace. Once all testing has been completed, production from the new heating line is expected to begin in July. The next phase of the CRM project is an upgrade of the three high mill. During the regularly scheduled plant shutdown in July, a new tilt table and manipulators will be installed at the #2 stand. Also, the motor controls for the three high mill will be upgraded during this time. In mid August preparations for the installation of the Kocks 500 rolling block will begin with the removal of 5& 6 stands on the in-line mill. In late August the work to replace the 290 block with a newer re-built 290 block is slated to begin. In mid October the in-line mill will be taken out of service to make final upgrades to the line including the installation of a newer re-built 370 block.

View of the Ajax-Tocco induction heating furnace from the holding furnace end of the line.



View of the Core holding furnace with the aerial transfer visible in the background.