



CASE STUDY 20080326S

Saw “Coolubricating” Increases Blade Life, Deals with Rust, Eliminates Mess

Bear Metal Works of Buffalo, NY says the more they cut, the better product they produce, and the better off their customers are with quality and cost savings passed on as a result of more efficient sawing operations. Although it required a little fine tuning after the startup, Bear Metal Works usage of UNIST’s saw lubrication system has exceeded expectations.

Among their full service line of fabricating equipment, Bear has a large Marvel 81APC Vertical Band Saw. It is used for heavy duty cuts such as solid 4X4 pieces of mild carbon steel - square stock, generally with multiple pieces stacked together. They work also with other shapes and forms of carbon steel, stacked in large bundles, to ensure efficient cutting, uniform dimensions and readiness for shipment to the customer. The 81APC originally employed a flood coolant system, which sprayed coolant onto the saw blade and material, and was drained into the machine’s sump for reuse. This process came with the usual mess to the saw area, material and operator, along with large amounts of fluid which had to be treated regularly. Bear Metal was also having rust issues due to solvent getting in between bundles of finished tubing, which led to customer complaints.

The company purchased and installed a **UNIST 200-3S Saw Coolubing System** and started using **UNIST Coolube 2210** vegetable based lubricant for saw blade lubrication. The primary objective was to increase blade life and production. Another highly anticipated benefit was the elimination of the housekeeping issues, i.e. fluid cleanup, treatment and handling. While the initial system configuration answered these problems, it also introduced another unexpected cause for concern. During the cuts on the 4x4 stock, the cutting edge of the saw blade was an acceptable 70 degrees F, but the back half was heating up to was 130 degrees F. This caused the guide arm to heat up and the cuts to go off square.

To better control the blade temperature in a variety of cut types, the small modification of an additional pump was added to the Saw Coolubing System and the line from this pump was plumbed into the blade guide. The lubricant type was also switched to **Coolube 2210EP** – a Coolube formula specifically designed for harder, ferrous metals.

Now the heat issue no longer exists and the sawing process works extremely well for Bear Metal Works. According to saw operator John Banas they have increased blade life, increased production and their saw blade is very cool to the touch. They have eliminated any fluid handling except to occasionally fill the small reservoir on the UNIST system with Coolube. Since the lubricant is entirely consumed in the process, there is no more fluid related clean up, and the customer problems related to rust and excess fluid have disappeared.