

To whom it may concern

## Smorgon Steel Administration Cooling Tower Chemical Pump

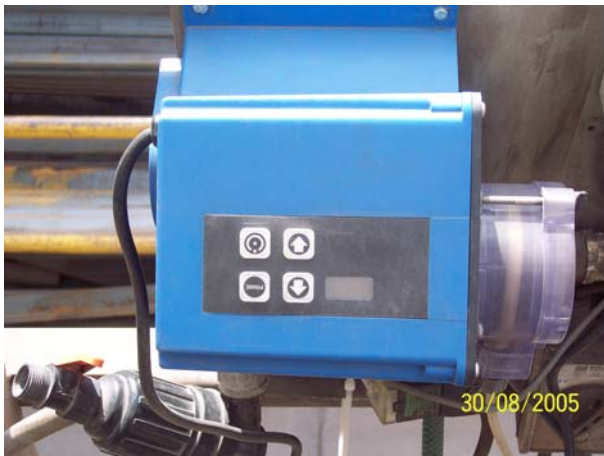
There have been ongoing issues with the chemical pumps for the above mentioned cooling tower over several years. The lack of reliability and consistency of the chemical supply pumps made chemical control within the cooling system extremely difficult and required consistent intervention.

### Diaphragm pumps

This style of pump proved to be incompatible with a small cooling tower due to the low dosages required by the system. As the pump was not frequently used it tended to lose prime and therefore often would not dose. To overcome this problem we used a lower concentration chemical with a higher dose rate but still suffered from the same problem. This issue was only overcome when the pump operated at high stroke and speed but this overdosed the chemical. No acceptable equilibrium was achieved using this style of chemical pump on this small system.

### Peristaltic Pumps

The original small peristaltic pumps we used worked fine initially but suffered from mechanical breakdowns (roller/shaft shearing) as well as inconsistent dosages (tube wear) which caused problems over time. As the general principle of the mechanism of supply was working we decided it was the size of the pump that was the issue and not the methodology. It was believed that a larger pump would be more mechanically reliable and therefore overcome one of the main problems we were facing. However to increase the size of the pump meant going to a much larger unit that meant much larger dosages of chemical per rotation of the roller. This caused some concerns as we believed that this would have a negative impact on the chemical levels within the cooling tower. As a consequence further investigations of alternatives were carried out.



The Pulsafeeder Chem-Tech installed upside down in its final position.

Note the small pump tube size compared to the housing size. This combination made it perfect for the application.

The most reliable pump used in this application.



Pulsafeeder Chem-Tech as part of the final installation.

Note the limited space available for the complete installation, yet we were able to install this unit into the space smaller pumps had been located.

When we found out about the Pulsafeeder Chem-Tech we were very impressed with the combination of a large pump size but a small chemical tube supply. This combination offered us the hope we were looking for in being able to give a consistent and reliable low volume dosage. There was an unexpected bonus in that the chemical roller tube was much firmer than previous forms we had seen and gave much improved volume control over prolonged periods of time. Any small losses that have been experienced over time were easily overcome by the fact that the pump has a variable speed drive. The variable speed drive is far easier to adjust than going into the central controller and changing the dosage time when minor alterations are required. The variable speed drive has also proven to be of excellent use after cooling tower cleans as we can quickly re-dose the cooling system without having to manually handle chemicals – another time and OH&S saving.

Yours Sincerely

Howard Richards