

## ***Portable Air Tensioning System Reduces Carryback And Increases Worker Safety At Iron Ore Mine***

### **Industry**

Iron Ore

### **Application**

Wet, sticky ore on a heavily worn belt

### **Product**

Portable Air Tensioner (PAT) with two MHS Heavy-Duty Secondary Cleaners

### **Objective**

- Reduce carryback
- Reduce belt cleaner maintenance

### **Conveyor Details**

- 1500 mm wide belt, 5m/sec



*The PAT System Control Box and Tank to monitor the air tension.*

### **Problem:**

Belt cleaners are an integral part of any belt conveyor system because of their ability to remove carryback from the belt. However, when belt cleaners are not regularly maintained, material build-up becomes inevitable. One of the most important belt cleaner maintenance tasks is to check the tension, as consistent blade-to-belt pressure ensures the best cleaning capability, ultimately increasing your system productivity and belt life.

An Australian iron ore mine was struggling to access and perform tensioner and cleaner adjustments on the drive side of the chute in a safe manner. The difficult location of the chute put the technician's safety at risk when adjustments needed to be made. This safety hazard meant maintenance was not regularly performed, leading to excessive carryback and material build-up in the chute, as well as premature belt and component wear.

### **Solution:**

After assessing the challenges faced by the mine, Flexco was able to propose a Portable Air Tension (PAT) system as the best solution. This system ensures tips maintain constant pressure on the belt with a scarce need for manual adjustment. The tanks utilise site air or nitrogen and are Australian-made, Class E, and environmentally safe for sites. The PAT system was paired with two MHS Heavy-Duty Secondary Cleaners to create the ultimate cleaning system that required minimal maintenance.

### **Result:**

After the system was installed, there was an instant drop in carryback. The site did not need to make any manual adjustments for over four months because of the constant blade-to-belt pressure. This limited the need to perform any unsafe maintenance tasks in between shutdowns. The PAT system also eliminated material build-up on the back wall of the chute, which previously had to be cleaned manually with water on a regular basis. This not only saved the site significant amounts of time and money, but also greatly reduced the safety risks involved in the manual clean-up process.