

## BACKGROUND

An industrial manufacturing client recently purchased a used roll press to manufacture a mining related final product. The roll press consists of seven (7) identical press stands and the line has to reliably produce over 1,000 pieces per day to meet order requirements. The line is not operating reliably and meeting production targets is a significant challenge.

## INITIAL CONDITION

The roll press is not only an estimated 50+ years old, but no spare parts, drawings, or specifications are available for the unit. The manufacturer was based in Japan and has gone out of business many years ago. The press had not been properly maintained so that bearings are damaged, housings are worn and other, similar signs of neglect are evident.

## ANALYSIS

Induspec was retained to provide assistance with how to improve the reliability of the system. Induspec reviewed the system and communicated an approach of reverse engineering the system. With shafts sized, gearboxes and stands measured and re-designed, Induspec suggested an approach of building a single new press stand and using it to replace one of the existing stands. The removed stand can now be refurbished and the process repeated until all seven stands have been rebuilt.

## IDENTIFIED CAUSE

With a complete absence of spare parts, dimensions and specifications, it is a nearly impossible task to refurbish the line without taking the line down for several weeks of intensive repairs. Even then, since centreline distances and diameters are not obtainable due to the advanced wear of components, refurbishment would be a "hit and miss" approach.

## RECOMMENDATIONS

Induspec used highly sophisticated 3D laser scanning techniques to obtain existing shapes of gears, gear boxes, shafts, etc. The laser scans were converted to 3D models which were imported into SolidWorks, the 3D design solution which Induspec utilizes exclusively. Once complete models were established, engineering could proceed to establish correct bearing fit, seal sizes, centreline distances and bores.

## IMPLEMENTATION

The project is currently completing the design phase with Induspec obtaining manufacturing estimates for the next step towards implementation.

## Gallery

