PRAB
CASE STUDY

Metalworking Company Finds Increased Asset Utilization by Focusing on Scrap Management.

A Metalworking Company that produces heavy gauge stamped metal fasteners, progressive die metal stampings, and high value added assemblies for customers in automotive, heavy truck, military, and other industries ranging from OEM to tiered suppliers was awarded a sizable contract from a new customer. The contract would extend several years and require investments in new presses and dies. The Company was prepared to make the changes necessary to provide their new customer with high quality product and on-time delivery; however, the expansion that would be required to achieve their goals would be challenging.

The first step toward adding the required additional capacity was to install three new presses to an existing facility that was landlocked. This meant the expansion would have to be contained within the existing footprint of the building. In addition to the presses, the project also had to account for the scrap handling requirements. The scope of work required determining the best location for the presses where both finished parts and scrap could be handled quickly and effectively. This meant not only the proper sizing and selection of each new press, but also of an automated scrap handling system. For help with the selection, design, and manufacturer of the necessary conveyor system to handle the volume of scrap produced from the machines, the Metalworking Company turned to PRAB.

The first project objective was placement of a new 1650 AIDA press. The addition of this press was the key to satisfying the new customer contract requirements and therefore, would be the first of three presses to get installed. The goal of this project was to install the press and effectively remove the scrap while working with existing infrastructure and maintain the tight project schedule and budget.

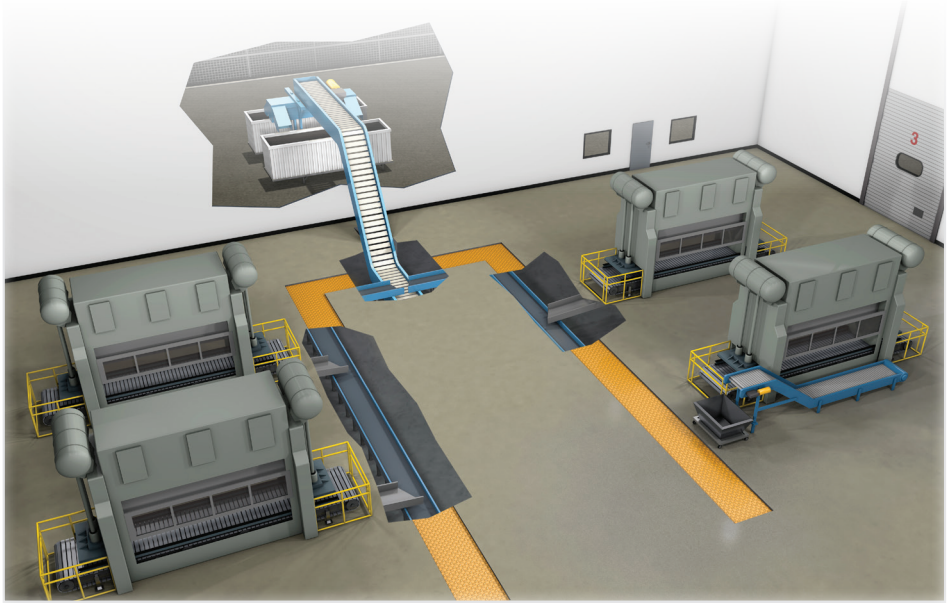
Project Summary

AUTOMATED SCRAP HANDLING
- Improving work flow

CENTRALIZED SCRAP MANAGEMENT SYSTEM
- Enchancing productivity

UNDER PRESS CONVEYORS
- Optimizing asset utilization

CUSTOMIZED CONVEYORS FOR EXISTING PITS
- Reduced capital expenditure, and minimized labor requirement



Typical stamping scrap material handling system. Quick Return and Oscillating Conveyors quickly carry material from under the press. A Steel Belt Conveyor lifts scrap to a shuttle type load out system.

The PRAB engineers started the design process by working with the Company's project team to complete a comprehensive RFQ form. This form, used exclusively by PRAB, is structured to help identify required components for scrap removal, the full nature of the scrap to be handled, key performance indicators, potential conflicts, and critical path project elements. The RFQ document is a starting point for the project so all parties understand the foundation of what needs to happen. The scrap handling project had many edits and changes during the design phase yet the organization and communication of both parties working in partnership made the project successful.

In addition to the physical constraints the project also had a tight completion deadline because the new contract required parts on a just-in-time production basis. Further constraining the progress of the project was a series of completed parts design changes. The parts design changes also changed the thickness and configuration of the scrap coming off the press; thus requiring changes to the scrap system with no movement in the project completion date. PRAB engineers worked overtime, side-by-side with Company personnel to make sure they designed a system that would move the scrap load away from the press quickly and effectively.

After several meetings, it was determined the best way to position the new press and handle the scrap was to daisy chain the new equipment off of an existing conveyor system, allowing that system to carry all of the scrap into the transfer system and to the load-out area. The next hurdle for PRAB engineers was to fit an underground conveyor into an existing 25' deep in-floor pit and elevating the scrap above the machine but not above the floor level so material could be discharged into the existing Oscillating conveyor. The size of the scrap coming from the1650 AIDA press would be 10" x 10" x ¼" thick. Normally a 6" pitch steel belt conveyor with a 3/16" belt thickness would be used to adequately handle the size and weight of the scrap falling from the press on to the belt. However, the existing space in the pit would not allow for the size required for the 6" pitch Steel Belt. Therefore, PRAB custom engineered a 2-1/2" pitch steel belt conveyor, which has a standard 1/8" thick belt, with a reinforced plate. The engineered plate on the smaller belt, helped to overcome the space constraint while maintaining the durability and reliability of the conveyor operation.

Deadlines were tight and emotions where high the weekend before a must-go Monday morning startup. PRAB field service technicians spent the weekend assisting with conveyor installation, controls tie-in, and QA/QC testing. The Metalworking Company's project team and PRAB engineers worked together as one to ensure proper installation of the press and scrap handling system. The system worked as designed and the Company was ready for production runs on the Monday morning deadline.

Several months after the project completion, the Company's lead project engineer commented in retrospect, "PRAB worked with us all the way through the project with all of the changes, budget adjustments, and timeline requirements. Most importantly PRAB stuck with us on the last weekend before start-up. It was a fire drill but we came through it on a very positive note. Today our system is still running smoothly and performing as guaranteed."

For more information on PRAB Conveyors, Chip Processing Systems, and filtration solutions for recycle and reuse of machining fluids, visit prab.com, call (800) 968-7722, or e-mail sales@prab.com.

ABOUT PRAB

PRAB is a leading industrial manufacturer of scrap metal conveyors, chip processing equipment, and fluid filtration systems. Each piece of equipment is engineered to help industrial manufacturers improve processes, reduce operating costs, and add value to scrap metal. PRAB designs and builds equipment to the specs of each application and supports installations from global manufacturing facilities. PRAB has served the Aerospace, Automotive, Industrial Manufacturing, Scrap Recycling, and Metal-forming industries for over 60 years. For more information on PRAB, visit prab.com.

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a DMGlobal company

5944 East N Avenue, Kalamazoo, MI 49048
1-800-968-7722 • sales@prab.com
prab.com