



Metal Grinding Booth Upgrades

Plant Engineering

Metals

Metal Grinding Booth Upgrades



Problem: Existing side draft fume exhaust work benches inadequately captured fumes from the client’s metal grinding process. The work cell was cramped and dimly lit. A worn underhung crane was used for both material handling and lifting of the cell’s swing grinder. Existing swing grinders were obsolete, creating a maintenance risk, and new replacement grinders bought several years prior had safety and ergonomic issues that prevented the production team from using them.

Solution: PTS assisted the client project manager through every step of the project, beginning with creating a specification and conceptual drawings from a 3D scan of the area, and gathering bids for the client’s capital request. PTS engineers then worked with the chosen general contractor to approve layout and equipment drawings, gain client EHS approval, and coordinate area preparation and scheduling for the two-month outage. PTS provided construction management for the duration of the demolition, installation, and commissioning, and completed closeout tasks such as setting up spare parts and PM documents, documenting drawings, and creating LOTO procedures.

In parallel, PTS mechanical and electrical engineers designed and implemented controls and mechanical modifications to the replacement swing grinders. The grinders were outfitted with a wrist safety tether, safety relays, and a cradle for the crane remote. The bulky control panel was relocated from its original mounting on the grinder to the booth wall nearby. The resulting swing grinder was both more maneuverable and safer.

The final product was an updraft booth and new dust collectors, providing higher air flow velocities. Productivity could increase and maintenance downtime could decrease because of inspection brightness lighting, a new underhung crane hoist, a wall mounted jib crane, and improved swing grinders.

