



## PROJECT PROFILE

### ELECTROMECHANICAL POWER SWITCH

#### CLIENT REQUIREMENTS

A north American power tool manufacturer required the development of a new electric switch for a professional power drill. The switch, a complex electromechanical device, involved plastic molded parts, sheet metal parts, metallic springs, electronic components, and a circuit board. Several current palladium personnel were retained (prior to the incorporation of palladium product development & design) to provide specific expertise for the evaluation, modification of the switch design, and preparation of production drawings based on results obtained through fabricating, tolerance stack-up analysis, assembling and testing of a switch prototype.

#### PROJECT HIGHLIGHTS

- Executing design modifications to eliminate deficiencies found during fabrication, assembly and testing of the switch prototypes: revising space claim for components, implementing more reliable guiding for movable components, adding retaining features to facilitate assembling, improving the trigger mechanical lock and adding a power dead-off feature for a switch neutral position.
- Special attention was given to GD&T requirements to provide reliable assembling during mass production.
- Comprehensive tolerance stack-up analysis was done to ensure “fit and function” requirements.

#### SUSTAINING ENGINEERING SERVICES

Palladium Product Development & Design provides sustaining engineering for many products, industries and companies such as the case history described above. Many of the same personnel involved with the power tool modifications described above (some with over 20 years industry experience) are still active with Palladium and providing services to past clients they have served, as well as taking on new clients with upgrades and product improvement programs. Design modifications related to manufacturing/machine design, packaging and transportation efficiencies, researched product quality improvements and inclusion of client/user feedback are routinely implemented as a result of these analyses and design engineering services

