

## MANUFACTURING PROCESS FLOW CHART FOR COMMODITY MATCHBOOKS

### Match Cover Printing

The printing of the match cover is accomplished using a high speed roll-to-roll flexographic printing press.

### Application Striker Surface to Cover

A slurry composition containing red phosphorous is applied to the roll of printed covers and then dried.

### Match Stem Production

Match board stem stock is purchased in large rolls and continuously fed into a punch press with a die that stamps out strips of 120 individual matches. The match strips are inserted into a carrier chain that passes through a paraffin dip followed by an immersion into the match head composition. The carrier chain continues through a drying process and then the strips are extracted and conveyed directly to the assembly area.

### Caddy/Match Tray Production

The tray or caddy that contains the fifty matchbooks is die cut from rolls or sheets and folded and glued to form the finished caddy. The caddies are transported to the assembly machines by conveyor belts.

### Matchbook Assembly

The finished match stems and the rolls of match covers are simultaneously loaded into an automatic assembly machine. The match strips are cut into sections containing the appropriate number of individual matches (20 match stems per book) at the same time the cover is cut to individual size. The cover is then folded over the match stems and stitched to complete the finished book. The assembled matchbooks are then accumulated and presented for packaging automatically, into caddies of fifty matchbooks.

### Caddy Finishing

After being packed with fifty matchbooks the caddies are most commonly paper-wrapped but may also be inserted into a folding carton, with or without shrink-wrap.

### Case Packaging

Finished caddies are accumulated and packaged into cases. Forty caddies per case is the standard size but variations of fifty, thirty and twenty caddies per case are not uncommon. Upon completion of this step, finished cases are palletized and are ready for shipment to the customer.