SIGMA**NEST**®
S O F T W A R E

SigmaNEST® for Knife

The SigmaNEST knife cutting module offers an advanced nesting and NC programming solution to optimize CNC knife cutting technology through tight and accurate nesting, improved part quality, and significant control of standard knife cutter functions.

FEATURES

- Multi-pass and cutback options to ensure complete material penetration and eliminate blade damage
- Hop-over cutting for pizza-wheel cutters
- Control cutting speed and cut depth based on material type
- Unique value settings for individual blades to avoid part damage and nest overlap
- Single or multi-ply cutting capability
- Sheet reposition when cutting rolls
- Assign tool order according to contour area
- All part ID marking systems are supported including pen, labeling, and ink jet
- Work order and material management
- Inventory with coil nesting and remnant tracking
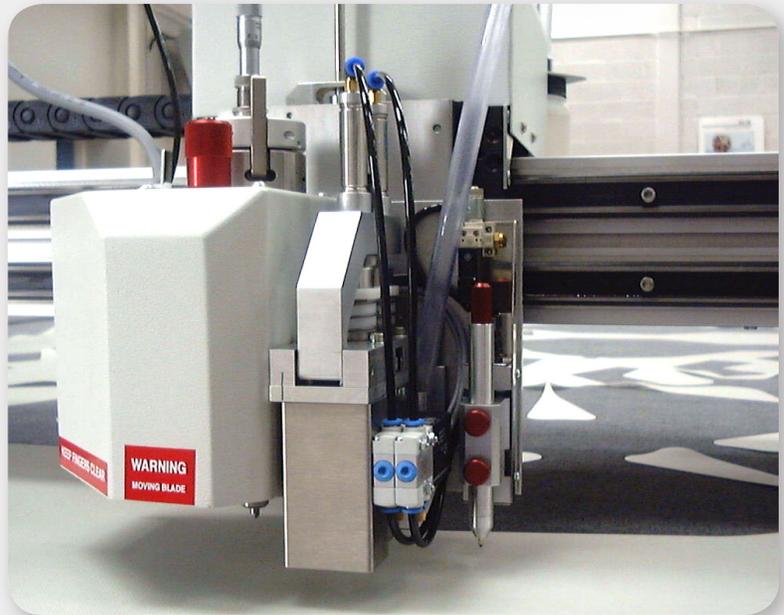- Static nest support

ADVANTAGES

- One software to program all major profile cutting machines
- Change capability control with lift angle capabilities
- Customize tool order to optimize part quality
- Optimize part results with detailed material constraint management
- Optimize balance between production throughput and material yield by using continuous nesting feature

BENEFITS

- Increase profitability by maximizing machine throughput and minimizing material waste
- Extend tool life and lower tooling costs
- Improve machine time and reduce part movement by utilizing ramping
- Improve work-flow planning with accurate time and cost estimates
- Produce cleaner cuts and accurate sharp corners by setting compensation values for each blade

Technical Specifications

- Validate files and filter geometry before creating parts
- Separate and store parts from a single file when importing assemblies or groups of parts
- Automatic depth calculation for multi-pass
- Map layers to processes or quality settings
- Store nest layout as a drawing and extract parts

CONTACT

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SigmaNEST for Composite Materials

Efficient, effective automated CAD/CAM is essential in today's competitive market. Programming time and operator interaction must be kept to a minimum whilst maximising production through reliable work flow management. Material usage and waste efficiency is paramount to success in keeping running costs to a minimum. SigmaNEST fully supports knife cutting machines, and special support features have been added to enhance machine performance for the composite industry.

COMPOSITE FEATURES

- Overcut control for standard blades is used to extend a cut line at an intersection to ensure all fibers are cut
- Overcut control for pizza wheel
- Auto fillet corners
- Multi-Pass for tough material types
- Multiple tool support including for drill and router attachments

COMPOSITE ADVANTAGES

- Sigmanest reduces the length of lines on overcut resulting in a perfect 90 degree corner on the product
- Clean, quality cuts producing quality parts
- SigmaNEST prevents cutting into adjacent parts parts within a nest
- Reduce run time by applying a fillet to keep the blade in the material while rounding corners
- Part rotation restriction - the strength of laminated plies comes from the orientation of the plies, so it is crucial that part orientation is considered

COMPOSITE BENEFITS

- SigmaNEST minimizes tool wear while maintaining quality surface quality
- By controlling the length of cut at geometry intersection for both linear and arcs, SigmaNEST compensates for overcut by a blade
- Applying a fillet will keep the blade in the material while rounding a corner saving time and ensuring all fibers are cut. The lift angle can be set within the Knife Cutter in advanced NC.
- On tough materials where knife breakage can be major problem, SigmaNEST can apply multiple passes on cut parts to reduce the stress on the blade. The number of passes is set by material and thickness lookup
- Multiple tool support allows users to offer their customers greater flexibility