

Speedpin[®]

Speedpin **Hi-Techspec**

C&T MATRIX

Speedpin Hi-Techspec

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Speedpin Hi-Techspeg

Introduction

Speedpin is designed to strip aperture waste, the sides and back edge from the diecut sheet. Its unique dynamic retractable restriction allows the waste to pass the Speedpin, breaking any offset, added nicks, or natural occurring nick areas without the use of under action frames and bottom pins, thereby saving time, and increasing machine efficiency.

Since the launch of Speedpin in 2018, the specifications have been developed to work across many different substrates, including folding box board, kraft carrier board, PE coated board, corrugated microflute board, e-flute, b-flute, correx board and polypropylene (PP).

The implementation of Speedpin into existing tooling production is relatively straight forward and is supported by C&T Matrix technical support. Some basic specification rules apply to the placement of Speedpin, claws and crownpins, which are explained within this document.

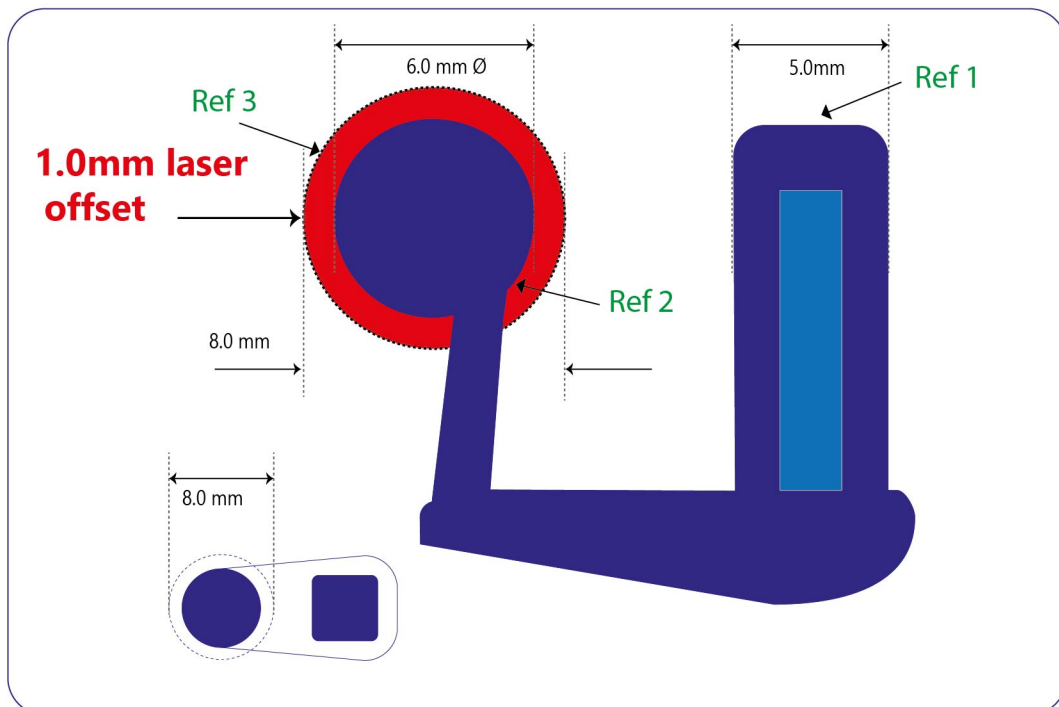


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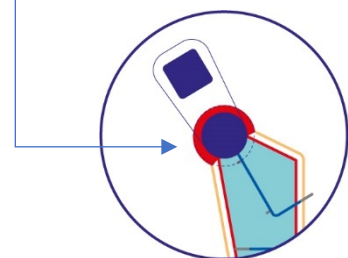
Speedpin specification

Illustrated dimensions for Speedpin.

- Square 5mm location hole lasercut into the lower stripping board (Ref 1).
- Retractable 6.0mm speedpin ball (Ref 2).
- 1.0mm laser offset clearance (Ref 3).



- The square location aperture in the lower stripping board needs to be lasered **tight** to allow a secure fixing position.
- The Speedpins are fitted to the underside of the lower stripping board.
- 1.0mm of clearance is to be lasered around the Speedpin circumference on the lower stripping board to accommodate retraction.
- On request symbol files will be supplied for the Speedpin.



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Speedpin technical support requirements

- BCSI PackDesign native file layout **Speedpin.M**
- Cf2 dieboard layout exported from CAD packaging software
- (*.DXF) dieboard layout file
- (*.DWG) AutoCAD dieboard layout file
- (*.EPS)
- (*.PDF)
- (*.AI)
- (*.DD3)
- (*.DDE)

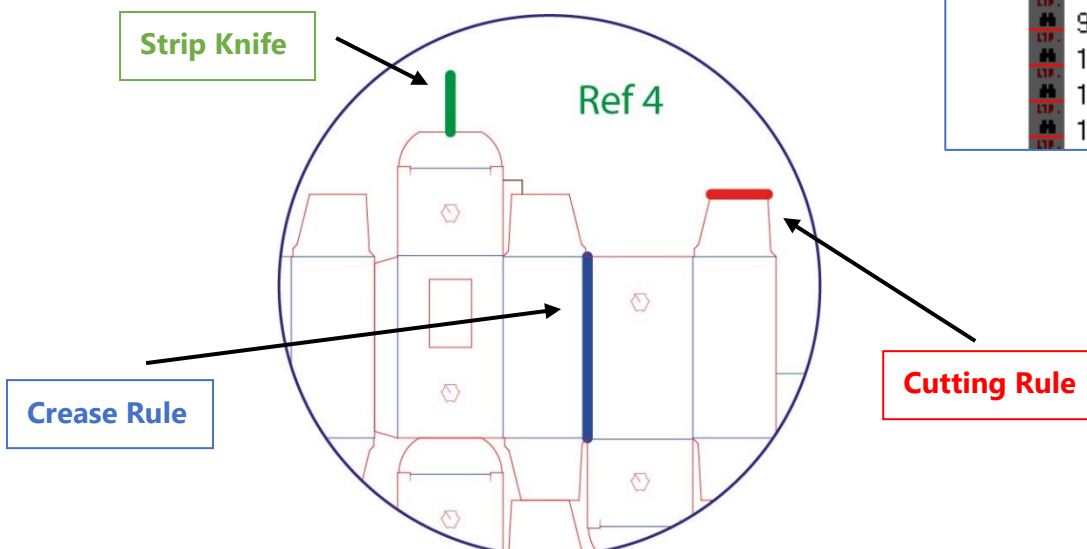
File linetype mapping

Linetype standardised mappings are required for import filters.

- Cutting rule – this should be the carton profile
- Stripping rule – separate from profile cutting rule
- Balance rule – separate from profile cutting rule
- Crease rule
- Perf rule
- Score rule
- Cut/crease rule
- Dieboard
- Etch die

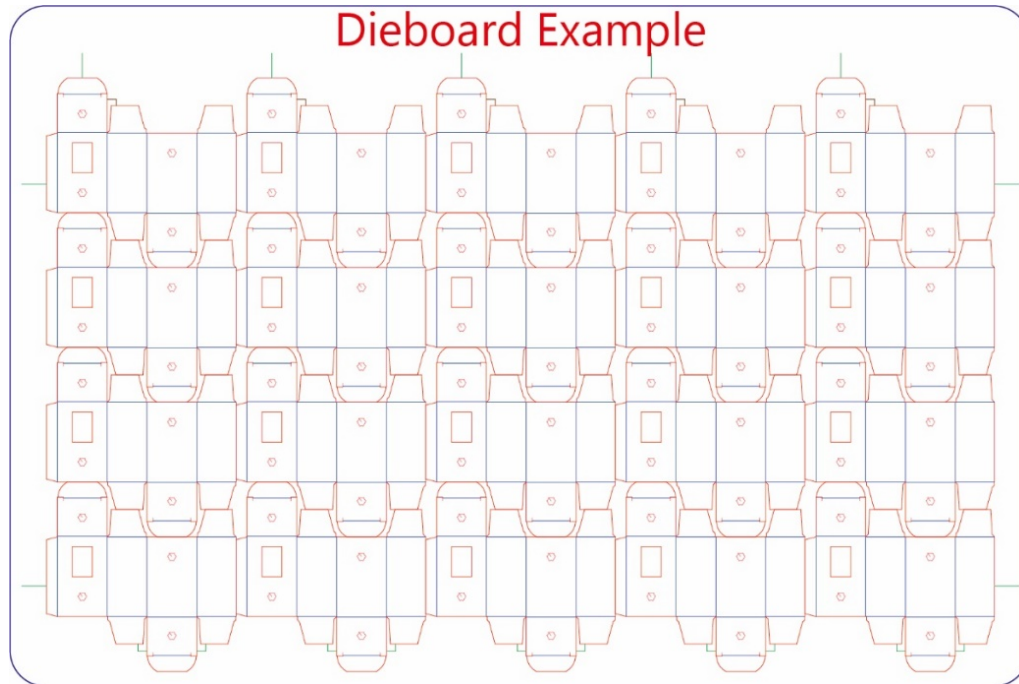
Line type examples →

Line type	Description
0:	Register marks
1:	Cut
2:	Crease
9:	Un knifed
10:	Waste
16:	Dimensioning ----
28:	Prepress
38:	Die wood
42:	Etch die
56:	Die fastening holes 1
69:	Die annotation
88:	Part identifier
94:	Balance knives
107:	Die Gripper position
115:	Die centering notch
123:	Temporary



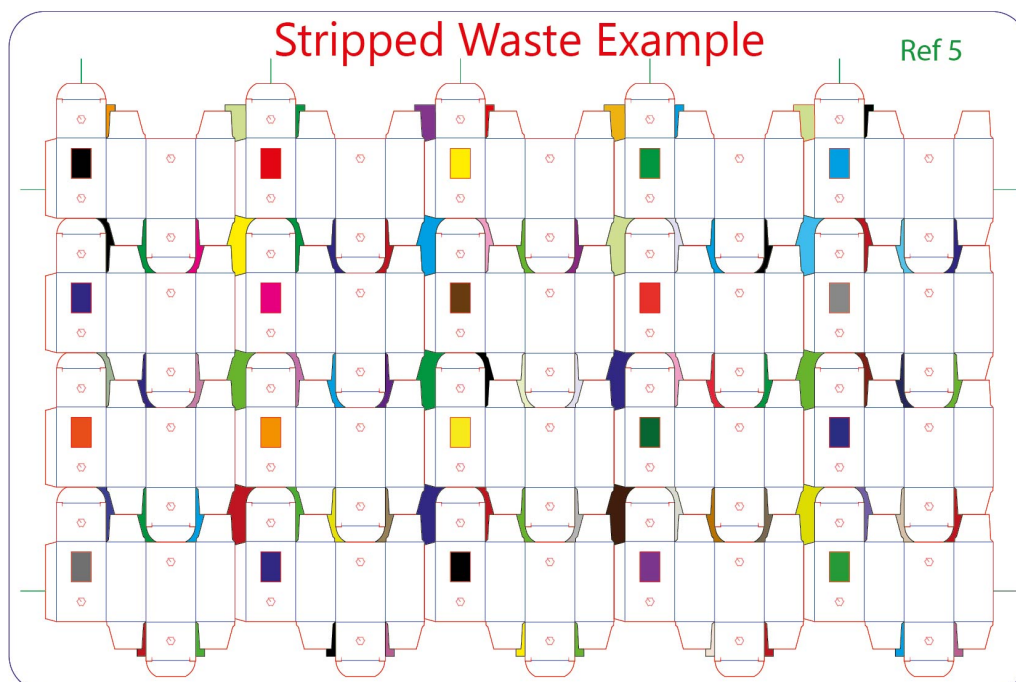
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Dieboard layout example



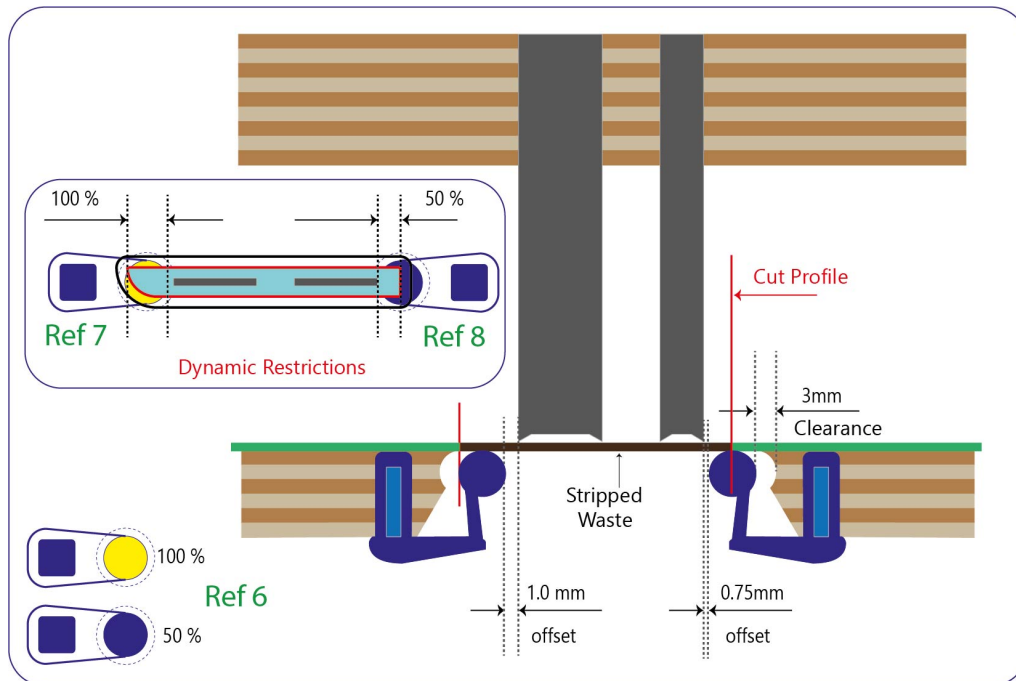
Programming Speedpin stripping tools

- Dieboard files are required with line type mapping as illustrated above from a CAD packaging software (Ref 4 page 5).
- Clear indications of the stripping areas are required, this can be illustrated in a CAD or PDF file (Ref 5).
- Illustrated below is a CAD file with areas to be stripped identified in colour.



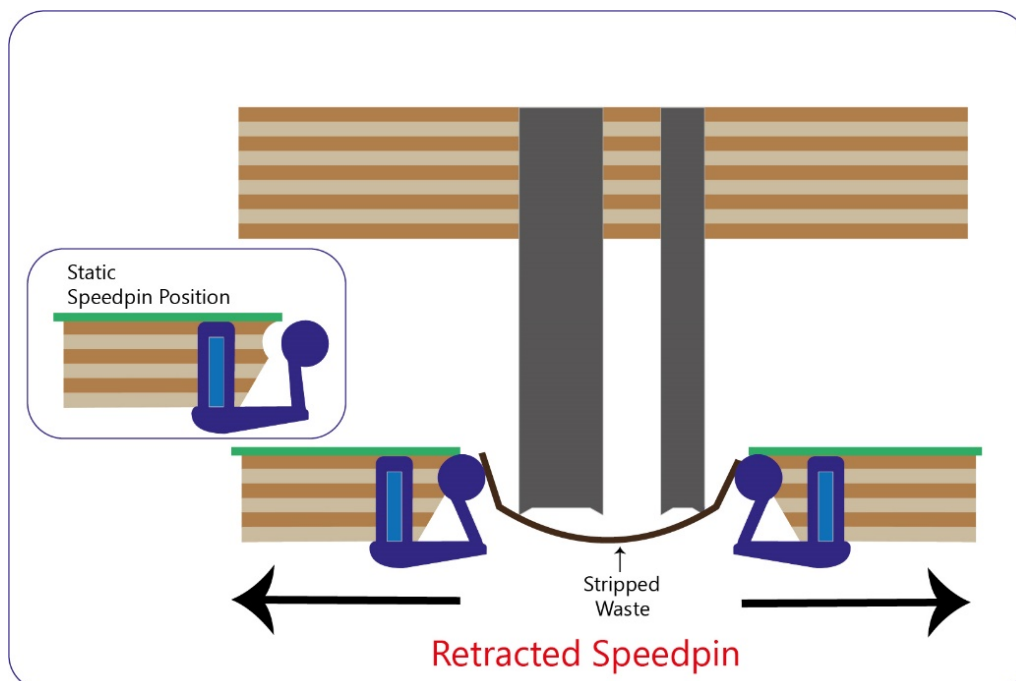
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Speedpin interference & positioning



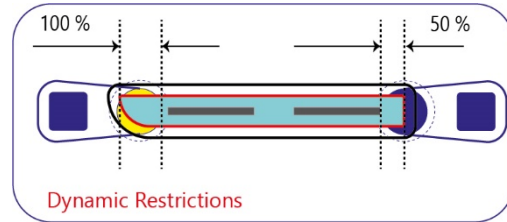
- Colour indication for interference over the waste aperture (Ref 6).
- Tight slots areas require 100% dynamic restriction (mag slots, shaped slots) (Ref 7).
- Square ended slots require 50% dynamic restriction (Ref 8).
- See page 9 for common aperture Speedpin positioning.

Speedpin retracted position



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Speedpin male claw positioning



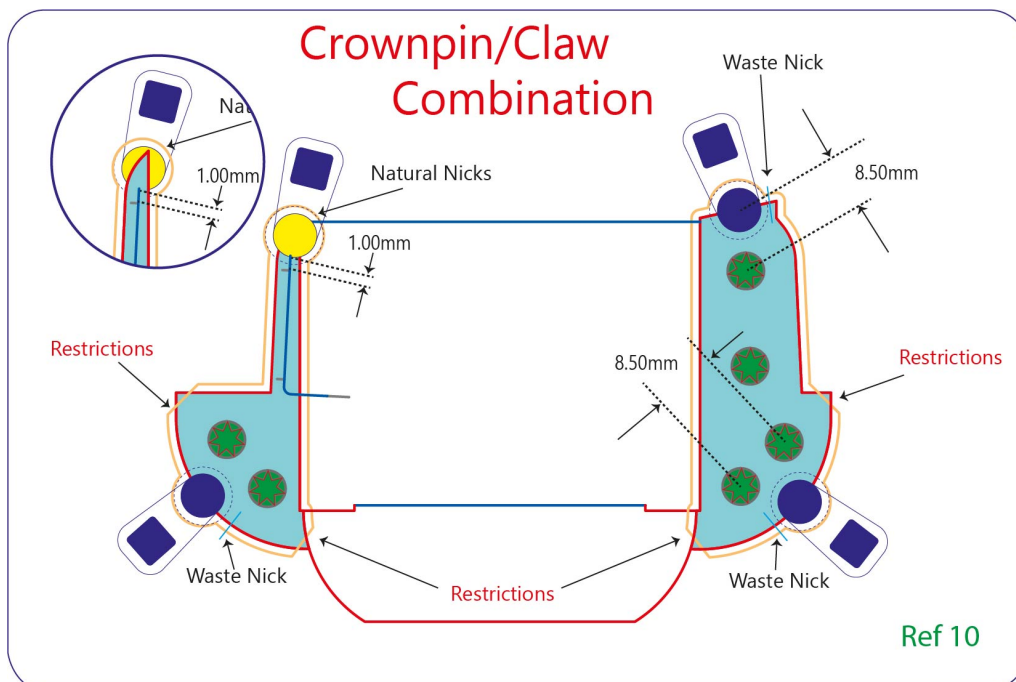
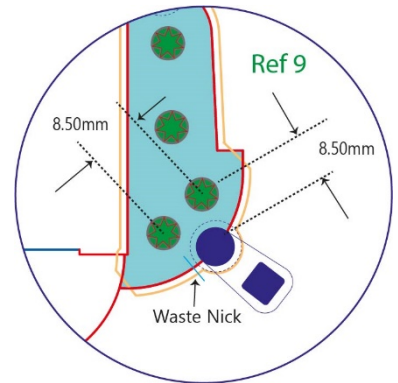
To maintain adequate retraction pressure the male claw needs to be offset from the Speedpin. When using 3mm of interference the claw needs to be closer to the Speedpin as there is less pressure of the waste over the speedpin.

In tighter slot waste aperture areas as illustrated above, to maintain pressure for the retraction 6mm of interference is required. In these instances, the claws can be moved further away as more pressure is created by the waste over the Speedpins.

See page 12 board type and caliper chart for offsets

Speedpin crownpin positioning

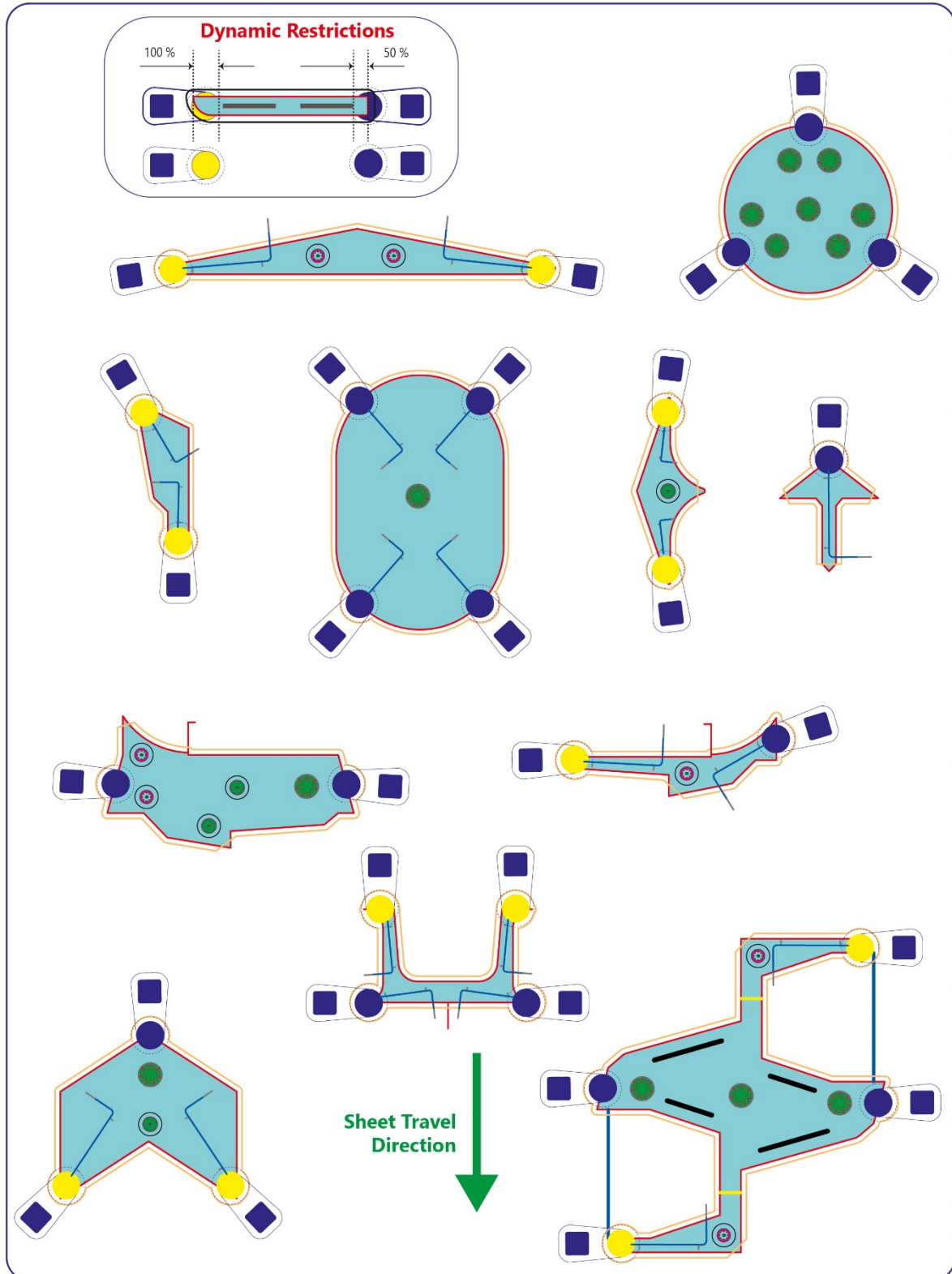
Speedpin, crownpin and flatpin placement is very important. **8.50mm** centre to centre is used so that the Speedpins can retract, this distance also allows utilisation of machinery (Ref 9).



- illustrated above is the combination of Speedpins, crownpins, & claws showing natural nicks and waste nicking areas in the Speedpin interference (Ref 10).

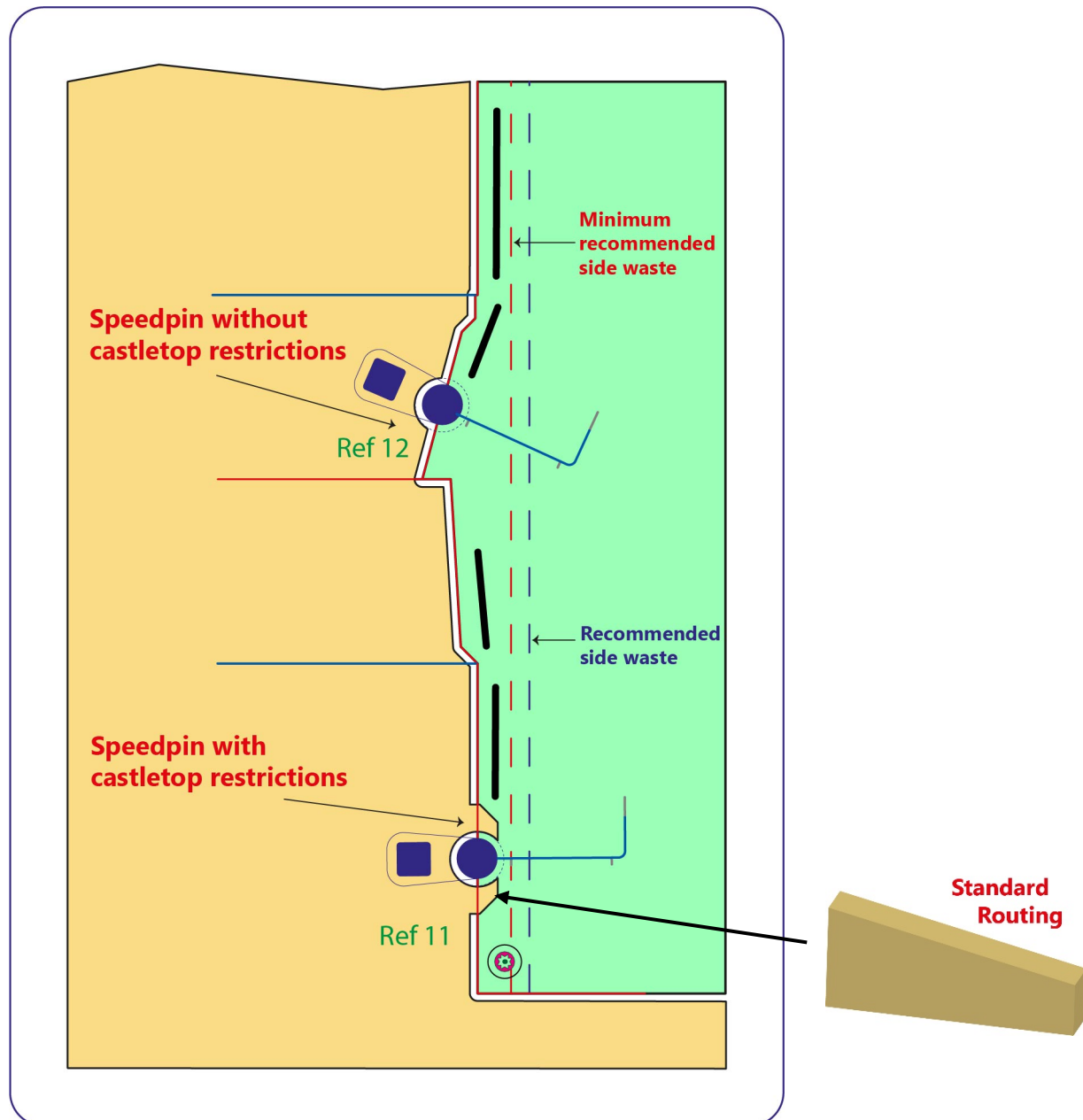
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Common aperture positioning examples



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Side & back edge waste positioning

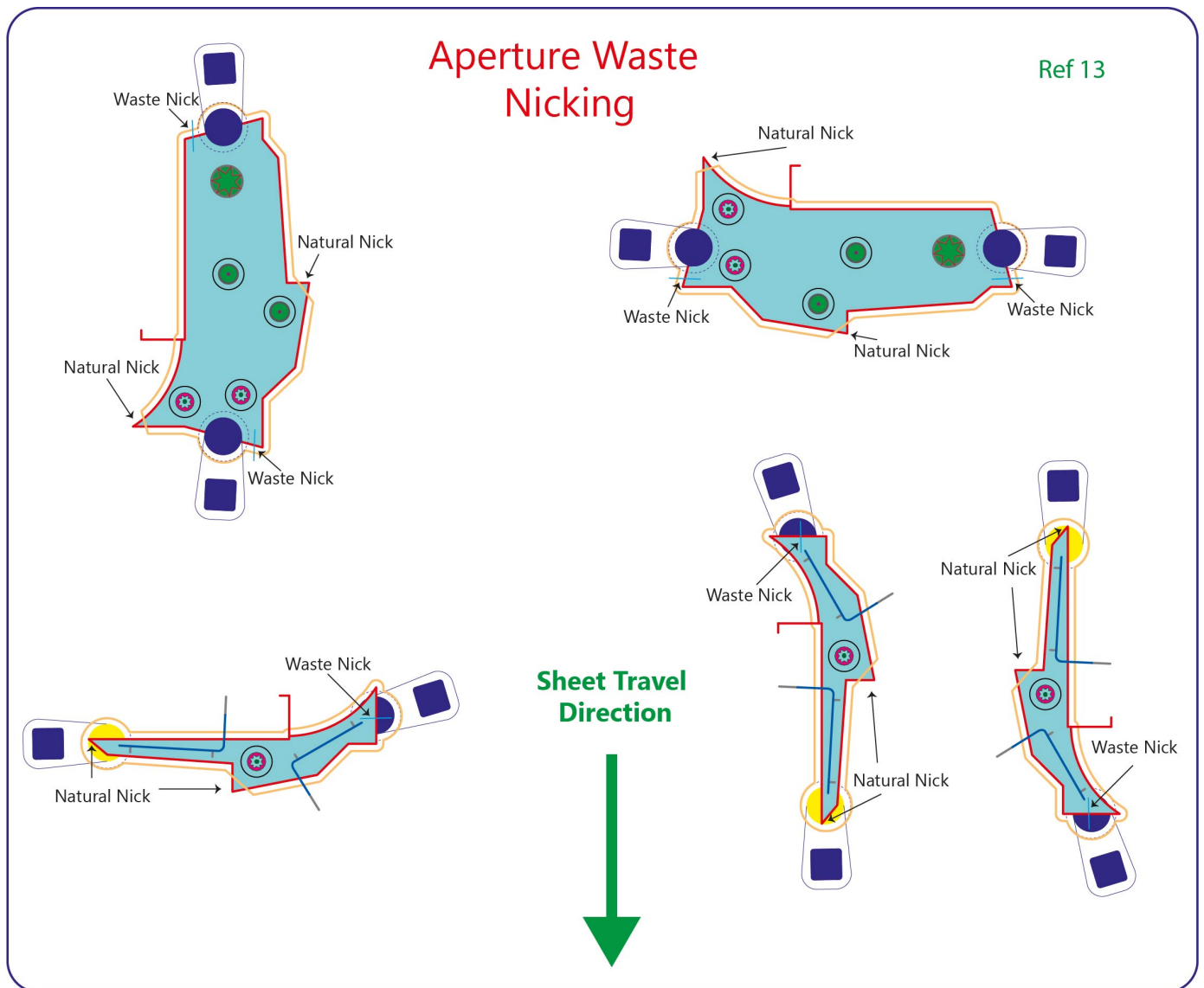


- Speedpin surrounded by castletops in areas where the waste is thin and requires the additional support (Ref 11).
- Speedpin without castletops in areas where the waste is larger (Ref 12).
- Standard 1mm claw offset opposite the Speedpins as illustrated.
- Fill outer edges with stripping rule, claws, crownpin, and flatpins, apply normal tooling production specification methods along with the Speedpin placement.

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Aperture waste nicking

Depending on aperture orientation and board grain direction nicking patterns change position. The first consideration is to establish where natural nicks may occur throughout the tooling production life and therefore, avoid nicking in these areas. Add nicks on the lead edge in interference areas; keep a balance by adding a nick to the trailing edge as shown in the illustration (Fig 13).



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Board type, caliper offsets for Speedpin

Folding Box Board		3mm Interference		6mm Interference	
Board Caliper	Claw Offsets	Board Caliper	Claw Offsets	Board Caliper	Claw Offsets
0.300	0.75	0.300	1.00	0.300	1.00
0.350	0.75	0.350	1.00	0.350	1.00
0.400	0.75	0.400	1.00	0.400	1.00
0.450	0.75	0.450	1.00	0.450	1.00
0.500	1.00	0.500	1.25	0.500	1.25
0.550	1.00	0.550	1.25	0.550	1.25
0.600	1.00	0.600	1.25	0.600	1.25
0.650	1.25	0.650	1.50	0.650	1.50
0.700	1.25	0.700	1.50	0.700	1.50
0.750	1.25	0.750	1.50	0.750	1.50
0.800	1.25	0.800	1.50	0.800	1.50
0.850	1.25	0.850	1.50	0.850	1.50

Corrugated Board		3mm Interference		6mm Interference	
Board Crush Caliper	Claw Offsets	Board Crush Caliper	Claw Offsets	Board Crush Caliper	Claw Offsets
0.550	1.50	0.550	2.00	0.550	2.00
0.600	1.50	0.600	2.00	0.600	2.00
0.650	1.75	0.650	2.25	0.650	2.25
0.700	1.75	0.700	2.25	0.700	2.25
0.750	1.75	0.750	2.25	0.750	2.25
0.800	1.75	0.800	2.25	0.800	2.25
0.850	1.75	0.850	2.25	0.850	2.25