

SURFACE GENERATION

— changing the face of tooling —



‘Goodbye Machining’

Reconfigurable Pin Tooling

SPE ACCE - Troy Michigan

THE PROBLEM



For large, and short run product prototypes:

- Materials must be final specification.
- Surfaces must be aerodynamically, aesthetically & structurally precise.
- Tooling lead times represent a significant proportion of the total product development cycle and up to 40% of costs.



THE SOLUTION



Reconfigurable Pin Tooling reduces the material & machining required to make patterns and moulds.

For low pressure & temperature polymeric Patterns:

- Near-net-shape Pin Tooling - NPT.



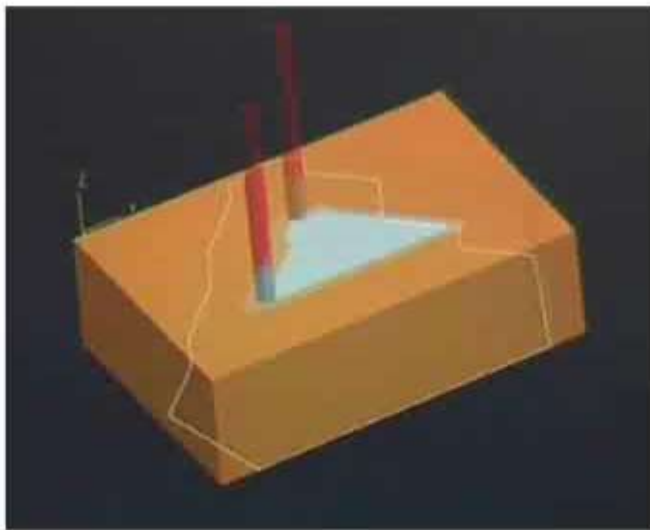
For high pressure & temperature metallic Mould Tools:

- Subtractive Pin Tooling - SPT.
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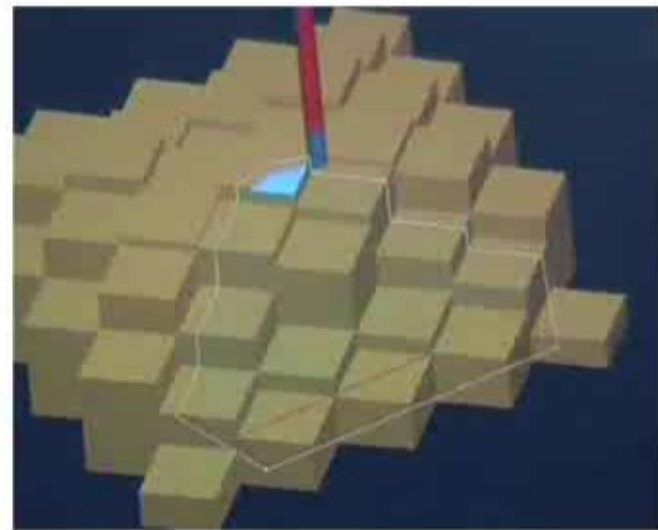
RPT BENEFITS



CNC Throughput



1

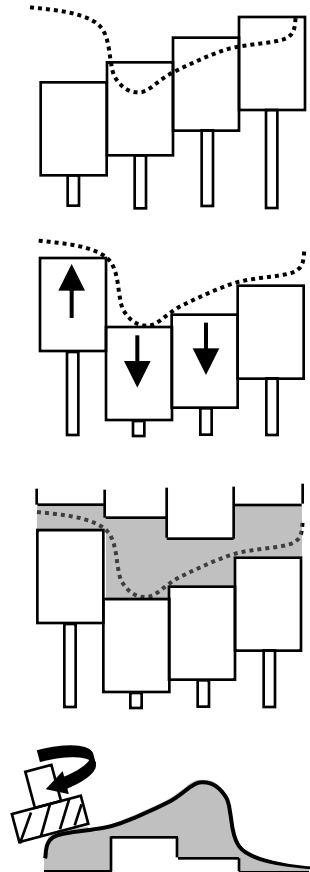


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NPT PROCESS OVERVIEW



1. Overlay new surface.
2. Analyse.
3. Generate CAM stock file.
4. Adjust pins.
5. Cast.
6. De-mould.
7. CNC machine from stock file.



NPT PROCESS OVERVIEW



Support
Module



NPT PROCESS OVERVIEW



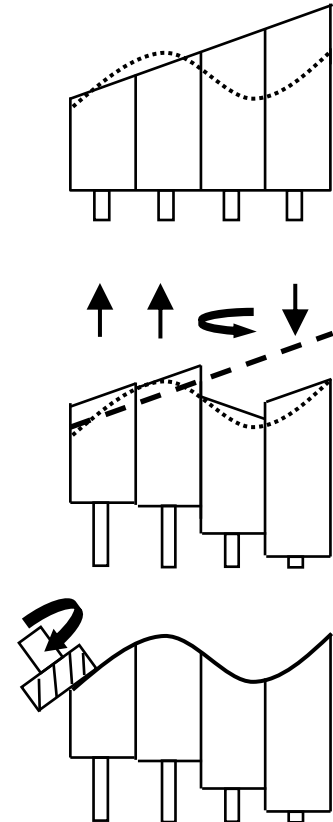
Epoxy



SPT PROCESS OVERVIEW



1. Overlay new CAD file.
2. Analyse.
3. Create stock file.
4. Adjust pins.
5. CNC machine from stock file.
6. Surface treat as required.



SPT PROCESS OVERVIEW



Aluminium

SPT PROCESS OVERVIEW

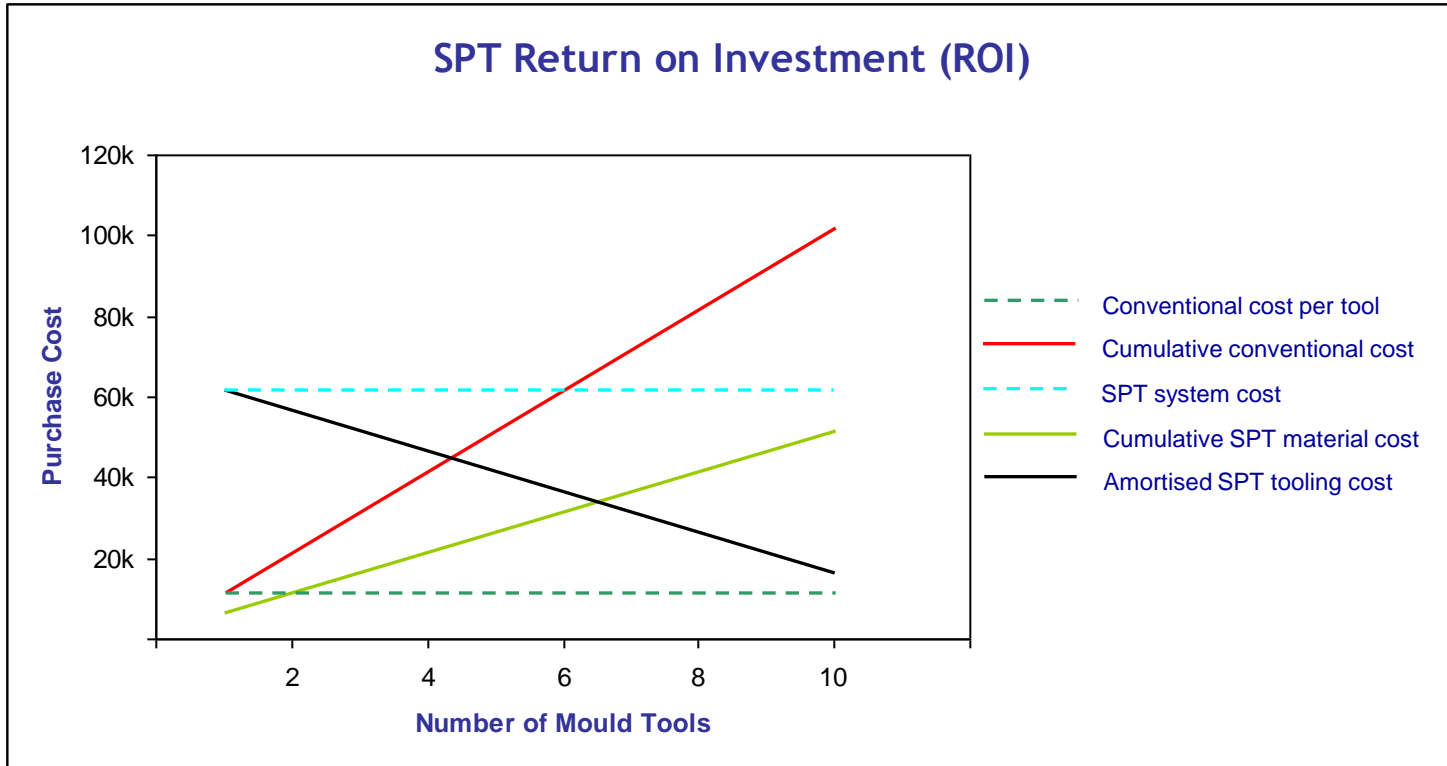


SPT PROCESS OVERVIEW



ABS

RPT BENEFITS



RPT APPLICATIONS



Sectors:

Aerospace
Marine
Automotive
Construction
Renewable Energy
Mass Transit
Food Packaging

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Processes:

Compression Moulding
Carbon / Glass Fibre
Metal Pressing
Pattern Making
Modelling
Injection Moulding
Vacuum Forming

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Volumes:

Prototype | One-off | Short Run | Medium Run | Mass Production

RPT DEVELOPMENTS



Current R&D Projects

Materials

- SPT Invar
- SPT BMI Carbon
- NPT Water Soluble Ceramic

Processing

- SPT Conformal heating / cooling
- SPT Ejection

Processes

- SPT Resin Infusion
 - SPT Metal Pressing
 - SPT Resin Transfer Moulding
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THANK YOU FOR YOUR TIME



If you would like to find out more please:



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