

# Smart Mandrels™

## Cutting Edge Tooling

Smart Mandrels are reusable mandrels that reduce the complexity and hassle of the composite fabrication process. They offer composite manufacturers an innovative, inexpensive solution to the high labor and materials costs of traditional composite tooling. Smart Mandrels are affordable, accurate, and customizable—without the drawbacks of lengthy assembly or disposal.



# SMARTmandrels overview

## Smart Mandrels RT

- Up to 113°F cure temp
- 203°F to 275°F forming/  
demold temp
- Up to 275°F max use temp
- 80% elongation, conforms  
to any contour

## Smart Mandrels 250

- Up to 250°F cure temp
- 300°F to 350°F forming/  
demold temp
- Up to 350°F max use temp
- 40% elongation, moldable  
to near-net shape

## Benefits

- Significant labor  
reduction, up to 85%
- Cost reduction
- No disposal issues
- No EPA restrictions
- Usable in conventional  
manufacturing lines
- High-quality parts
- Accurate parts
- Consistent production

## Features

- Reusable
- Tailorable transition temperatures
- Flexibility of design
- Made with Veriflex® SMP

Smart Mandrels reduce labor,  
tooling **costs**, and manufacturing **time**  
for fabricating **composite parts**.

### HEAT

A Smart Mandrels blank is heated above its transition temperature and placed in a clamshell mold.



### INFLATE & COOL

Above its transition temperature, the flexible mandrel is pushed against the mold using interior air pressure. The mandrel is cooled in its new shape.



### LAY-UP

The rigid mandrel is removed from the mold and coated with a mold release. The mandrel is used to make a composite part.



### CURE

The composite part is cured below the mandrel's transition temperature.



### EXTRACT

The mandrel is heated above its transition temperature to recover its original shape, then extracted.



For More Information:  
937.320.1877 | [contact@smart-tooling.com](mailto:contact@smart-tooling.com) | [www.smart-tooling.com](http://www.smart-tooling.com)

