

New Ground-breaking Technology for Superplastic Forming

Gas Oscillation Forming Technology is a disruptive advancement in the SPF process that provides significant improvements in the formability of alloy sheets. This patented new technology pushes past the boundaries of conventional superplastic forming allowing for dramatically more geometrically complex parts to be formed with higher quality and at lower costs.



System Advantages

Disruptive Innovative Patented Solutions

MARKETS

- Automotive
- Aerospace
- Defense
- Medical
- Architectural
- Marine

TRUSTED and RELIABLE

Industry leaders in SPF presses and Heated tooling for ultra-high temperatures. Gas oscillation without valves or any moving parts

- Nothing mechanical to fail at ultra high temperatures
- Not susceptible to shock and vibration

FEA simulation of the forming part with oscillation and CFD calculations to determine gas oscillation system requirements prior to manufacturing any tooling.

CUSTOMIZABLE

Customized design solution for any application.

COST-EFFECTIVE

Numerous ways to quickly achieve an impressive ROI. E.g. reduced cycle times, fewer presses, thinner materials, lower operating costs, increased quality, new contracts, longer tool life.

Gas Oscillation Forming System software and mechanisms are built into Macrodyne SPF presses and are further customized to each application according to the:

- Forming part geometry
- Type of metallic alloy
- Tool design

Systems are engineered to generate gas oscillations of various amplitudes and frequencies inside the forming tool with each generated gas oscillation deforming the material and subsequently allowing for partial stress relief of the material during the superplastic blow forming process. This results in an improved formed material grain boundary sliding mechanism.

The patented technology transforms the decades old conventional SPF process into Oscillation Enhanced SPF providing industry-leading manufactures the following benefits.

- Improved manufacturing speeds (200% – 1,000%)
- Increased elongation-strain with more uniform thickness
- Improved manufactured part quality
- Ability to manufacture at higher strain rates
- Ability to manufacture thinner parts
- Ability to manufacture more complex shaped parts
- Ability to manufacture parts previously un-manufacturable
- Increased light-weighting opportunities

Contact us today for more information

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