



- ✓ ***New Equipment Installations***
- ✓ ***Engineered Retro Fits***
- ✓ ***Rotor Rebuilds***
- ✓ ***Performance and Reliability Upgrades***
- ✓ ***Energy & Efficiency Improvements***
- ✓ ***DESIGN - BUILD - INSTALL***

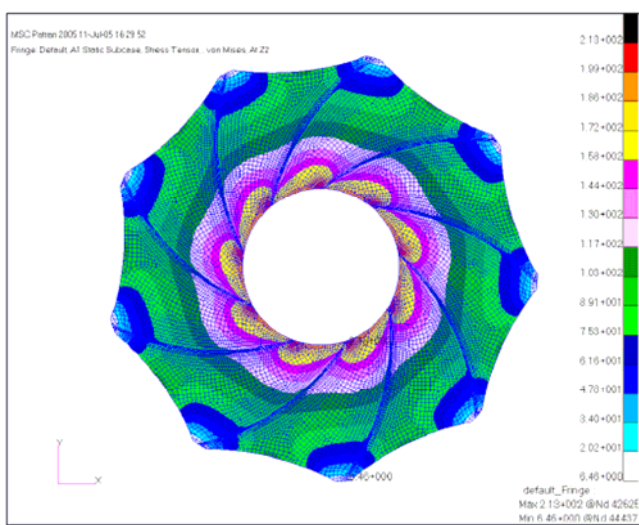


Figure 9 Von Mises Stresses in Sideplate, Surface Z2 (N/mm²)

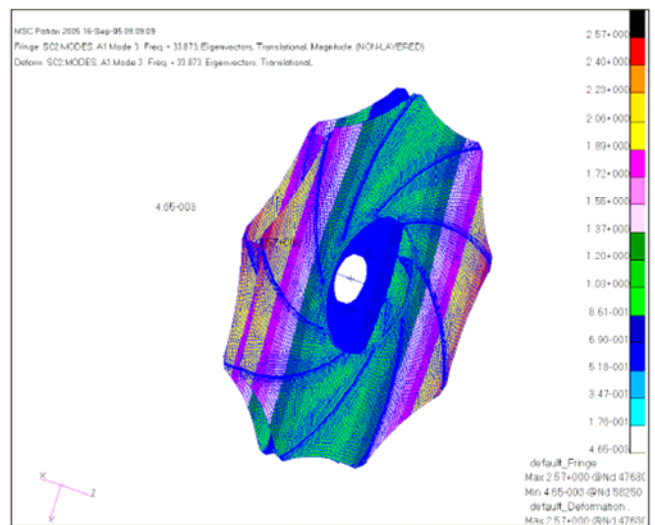
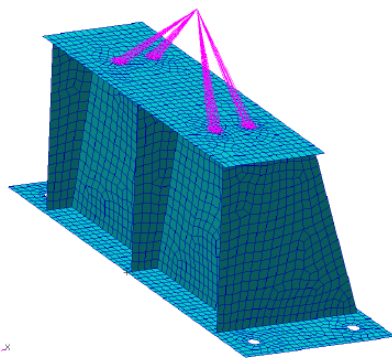


Figure 19 Vertical Nodal diameter out of phase with shaft mode



We utilize the latest in FEA technology to model the Fan Wheel, calculating stress levels and optimizing material selections. We can perform a frequency analysis to ensure natural frequencies are well removed from operating speeds and other sensitive frequencies like 2x and blade pass. This is also confirmed by a *Bump* test in the shop after fabrication. We solve complex fan problems and optimize Fan Systems by considering all components in the system, modeling the entire rotating assembly including the bearing pedestals to determine the system design resonant speed, and performing a Torsional Analysis of the complete drive train. This ensures a safe, reliable, and trouble free installation.

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