

Reciprocating Compressors - Tips for a Successful Project

- **Coordination** A successful compressor vibration solution involves different stakeholders. While the packager has responsibility for the piping and compressor, the owner, or its Engineering Consultant (EPC), has responsibility for the foundation or structural design. BETA recommends the owner or EPC be involved in reviewing the vibration study and the implications to reliability (vibration risk) and performance.
- **Analysis of all the required operating conditions** If the speed, gas composition, pressures, loading conditions and/or temperatures change from the initial design, the vibration solution will be compromised. Care should be taken to ensure all current and future conditions are properly defined.
- **Opportunity to improve efficiency and performance** Many projects are based on the lowest capital cost, and thus reliability and efficiency considerations are secondary. A new approach called “system performance modeling” is available to improve life cycle economics, performance, and reliability.
- **Dynamic analysis of the foundation (or offshore structure)** This analysis is linked to the mechanical vibration design and is typically performed by the Vibration Consultant. Often, this dynamic analysis is omitted, or not coordinated with the package design.
- **Vibration Field Check** A baseline vibration survey is commonly conducted once the unit is operating in the field. Scope to include small bore piping (which is not evaluated in detail in the design stage). Site survey will identify any remaining vibration issues.
- **Early involvement by Vibration Consultant** Key aspects of the vibration solution are determined early in the project design process. Costly changes can be avoided if the Vibration Consultant (BETA) is involved in preliminary design discussions.

Email your reciprocating compressor project questions to info@BetaMachinery.com.