
FOUNDATION VIBRATION LIMITS

There will always be some degree of vibration in the foundation regardless of how well constructed the foundation may be. This vibration originates from sources other than the Centac. In order to determine if the foundation vibration that is present will damage the Centac compressor, it is necessary to know two things: the frequency and the amplitude, velocity or acceleration. Knowing the frequency in combination with any one of the three other measures of vibration makes it possible to utilize the **Vibration Limit Graph** (see page 14B). The limits provided on the graph determine if the foundation vibration is acceptable or not acceptable.

An instrument such as the BNC-TK8 or IRD-350 can be used to obtain the base vibration frequency and displacement. The instrument transducer is held directly on the base to obtain the measurements. If displacement is measured, the graph is entered from the right where the Peak to Peak Displacement is indicated. Enter the graph and follow the displacement line as it slopes down to the left to the point where the sloped line intersects the frequency line coming straight up from the bottom. At this point of intersect, if it below the heavy line indicated on the chart, it is within acceptable limits and there is no problem with the foundation. However, if it falls outside the acceptable limit, the customer must take corrective action.

CAUTION: Instruments used to measure vibration frequency very often are calibrated in cycles per minute or RPM. The CPM or RPM reading must be converted to cycles per second in order to use the graph. CPM or RPM is converted to seconds by dividing by 60. Similarly, the instrument may read displacement in mils and the

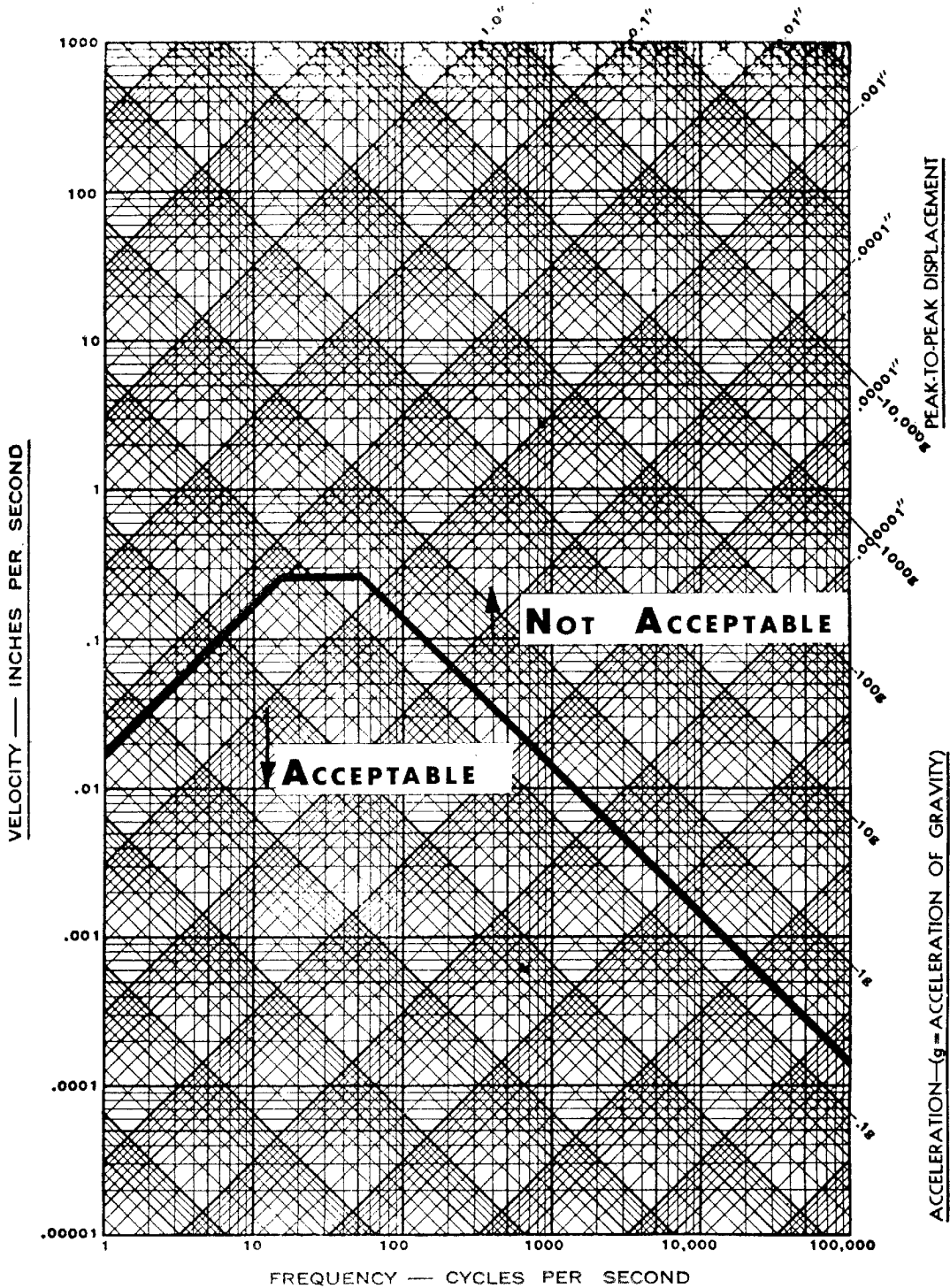
graph is scaled in inches. The displacement mils (1/1000 inch) must be converted to displacement inches.

If velocity is used as the basis for entering the graph, then you enter the chart from the left following the line horizontally until you intersect the vertical frequency line.

If acceleration is used as the measure of vibration, you enter the graph from the lower right moving upward to the left following the lines until you again intersect the frequency. Where the acceleration and frequency lines intersect, acceptable or unacceptable is indicated.

It is recommended that any time you start checking baseplate vibration, a number of locations on the base be checked. This is done to avoid any possible nulls that may exist. In interpreting the multi-location vibration data, any one reading outside the acceptable limit is sufficient to cause rejection of the foundation.

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**CENTAC FOUNDATION
VIBRATION LIMIT GRAPH**

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Authorized Personnel Only