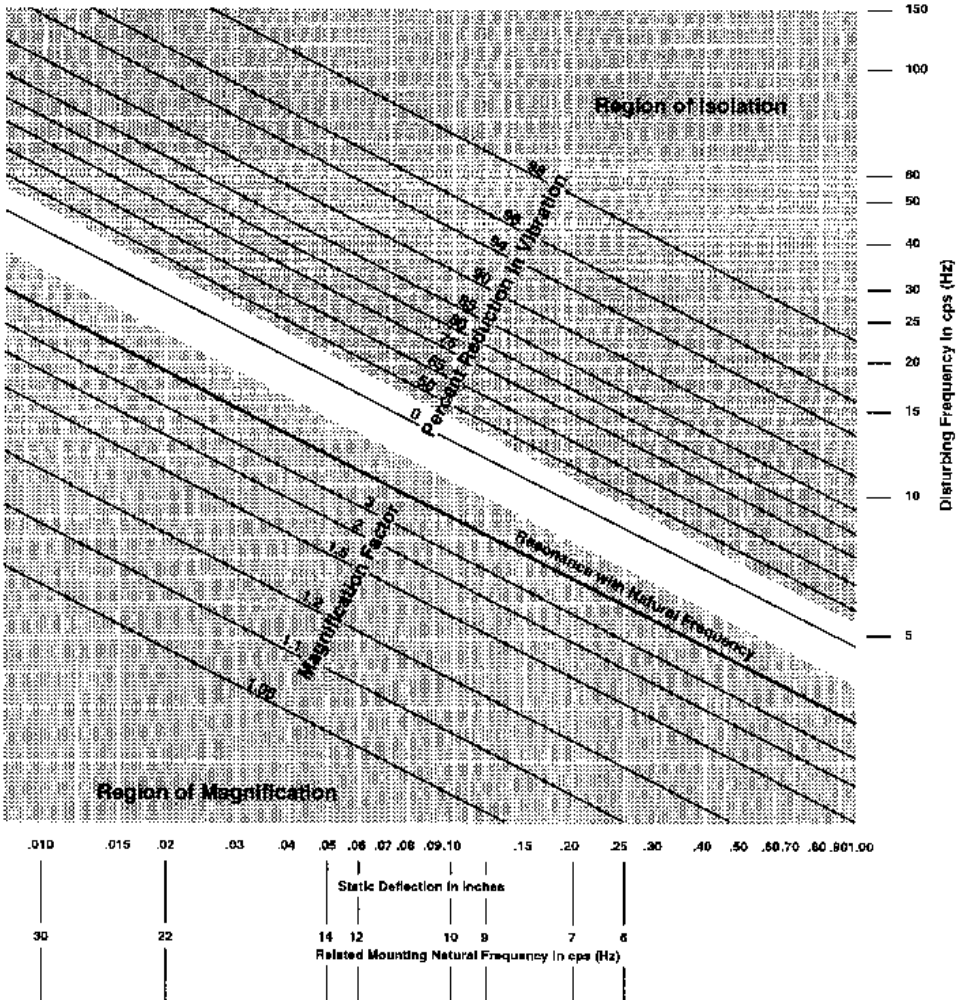
ISOLATION EFFICIENCY CURVE FOR FLEXIBLE MOUNTING SYSTEMS

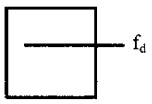
CHART 1:



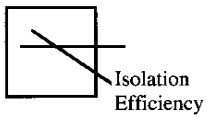
For simple linear vibration, Chart 1 illustrates the percentage of vibration isolation it's possible to obtain in a flexibly mounted assembly with any combination of static deflection and disturbing frequencies. The bottom area shows the region of magnification of vibration that occurs when the ratio of the disturbing frequency to the natural frequency of the mounted assembly is less than $\sqrt{2}$. A condition of resonance exists when the natural frequency of the assembly and the disturbing frequency are equal. The area illustrates the percentage of the vibratory forces prevented from reaching the supporting structure when proper flexible mountings are selected. Reduction in transfer of vibratory forces is obtained only when the ratio of the disturbing frequency to the natural frequency is greater than $\sqrt{2}$.

How to Use the Chart:
The chart can also be used to arrive at the required static deflection by starting with the disturbing frequency. Find the point where the disturbing frequency and desired percent reduction in vibration line intersect. The vertical line passing through this point is the required static deflection to produce the desired vibration isolation efficiency of the disturbing frequency.

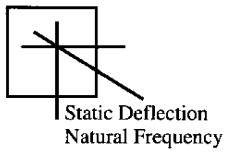
1. Determine f_d (disturbing frequency)



2. Decide on required Isolation Efficiency



3. Vertical line from point of intersection as required d_s (static deflection) and f_n (natural frequency)



K_s (Spring Rate) = $\frac{\text{supported load}}{\text{required static deflection}}$