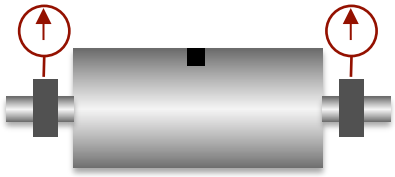
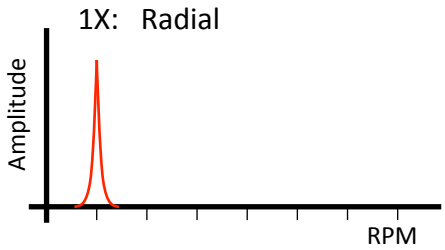
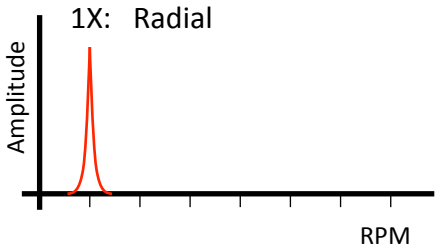
Static Imbalance





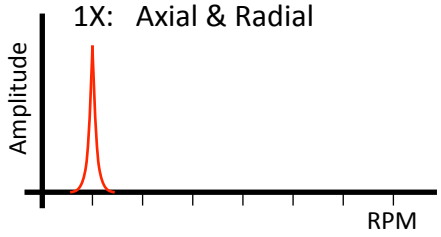
- Also known as forced imbalance
- Weight distribution axis parallels the rotational axis.
- Occurs when a heavy spot is located at the mid-point between the bearings.
- More common in rotors that are short compared to diameter.

Couple Imbalance



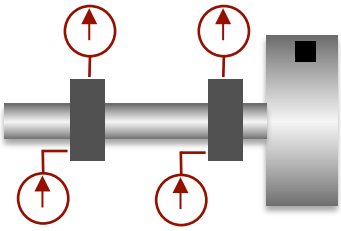
- 180° out-of-phase on same shaft
- 1X always present and dominates the spectrum
- Amplitude varies with square speed.
- Weight distribution axis intersect the rotational axis
- Correction requires the balance weights in at least 2 planes.

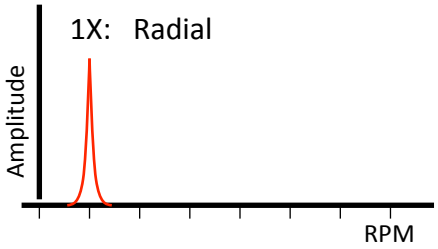
Dynamic Imbalance



- Also known as quasi-static imbalance
- Most common imbalance
- Occurs when the rotational axis and the weight distribution axis do not intersect at all.
- A combination of static and couple imbalances

Overhung Imbalance





- 1X radial and axial vibrations
- Radial signals are because of bending effects
- Axial readings might be unsteady

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