SINAV FORMÜL KAĞIDI

$$T = T_s \times N = \frac{N}{F_S} = \frac{N}{2.56 \times F_{max}} = \frac{line}{F_{max}}$$

T = Ölçüm süresi

Ts = Alınan iki örnek arası zaman farkı

Fs = Örnekleme frekansı = 1 saniyede alınan örnek sayısı

N = Örnek sayısı (1024, 2048, 4096, etc.)

$$Frekans\ Çözünürlüğü = \frac{F_{max}}{line}$$

$$Bant\ Genişliği = Frekans\ Çözünürlüğü \times Çerçeve\ Faktörü$$

Çerçeve faktörü = 1 (çerçeve yok/uniform/dikdörtgen) ya da 1.5 (Hanning çerçeve)

Ayırt etme frekans aralığı≥2xBant genişliği≥2xFrekans Çözünürlüğü*Çerçeve faktörü

Gerekli spectrum LINE sayısı ≥ 2 x Çerçeve faktörü x Fmax / Ayırt etme frekans atalığı
Frekans netliği (keskinliği) = ± ½ x Frekans çözünürlüğü

Asal Sayılar: 1, 2, 3, 5, 7, 11, 13, 17, 19…

1 inch = 25.4 mm
1mm = 0.039 inches

Deneme ağırlığı hesaplama formülü:

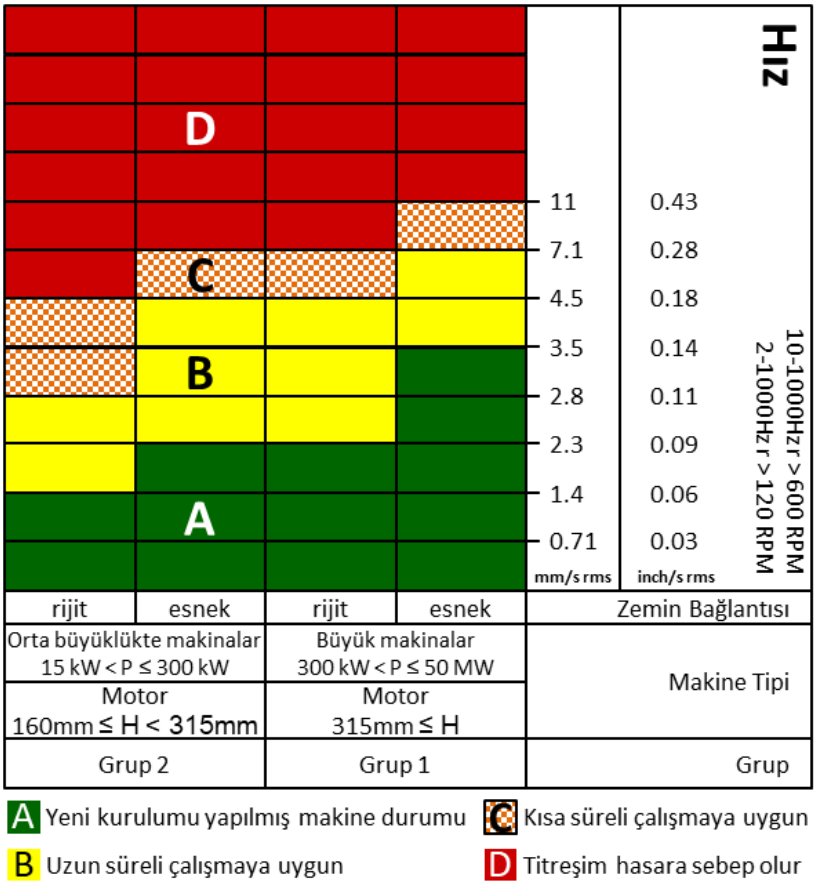
$$W = \frac{F}{K \times R \times N^2}$$

F = Rotor kütlesinin 10%'unun yatak sayısına bölümü (kg)
K = 0.011
N = RPM/1000
R = Balanslama yarıçapı (cm)

Birim dönüşümü tablosu

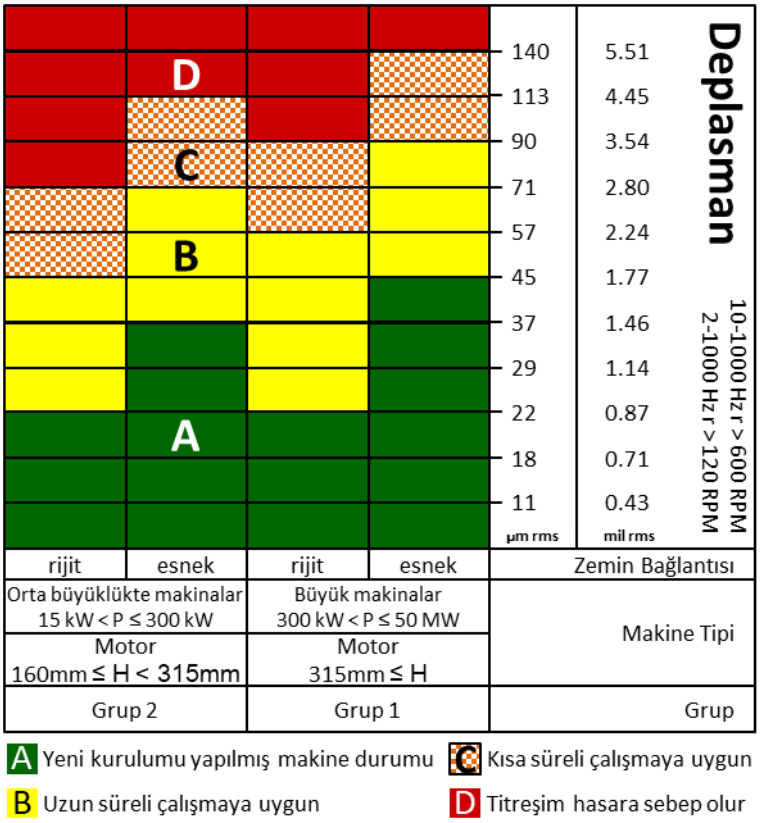
$D_{pk-pk} = \frac{19098\, V_{pk}}{f_{cpm}}$ $\quad V_{pk} = \frac{5217\, A_{rms}}{f_{cpm}}$	$D_{pk-pk} = \frac{27009\, V_{rms}}{f_{cpm}}$ $\quad V_{rms} = \frac{93712\, A_{rms}}{f_{cpm}}$
$D_{pk-pk} = \frac{9.958x10^7 A_{rms}}{f_{cpm}^2}$ $\quad A_{rms} = \frac{f_{cpm} V_{pk}}{5217}$	$D_{pk-pk} = \frac{2.53x10^9 A_{rms}}{f_{cpm}^2}$ $\quad A_{rms} = \frac{f_{cpm} V_{rms}}{93712}$
$V_{pk} = \frac{f_{cpm} D_{pk-pk}}{19098}$ $\quad A_{rms} = \frac{f_{cpm}^2 D_{pk-pk}}{9.958x10^7}$	$V_{rms} = \frac{f_{cpm} D_{pk-pk}}{27009}$ $\quad A_{rms} = \frac{f_{cpm}^2 D_{pk-pk}}{2.53x10^9}$
D = Deplasman: mils pk-pk **V = Hız:** in/s pk **A = İvme:** g rms **F = Frekans:** CPM	**D = Deplasman:** micron pk-pk **V = Hız:** mm/s rms **A = İvme:** g rms **F = Frekans:** CPM **1g rms = 9.8 m/s²**

ISO 10816-3 Titreşim seviyesi tablosu – Hız cinsinden

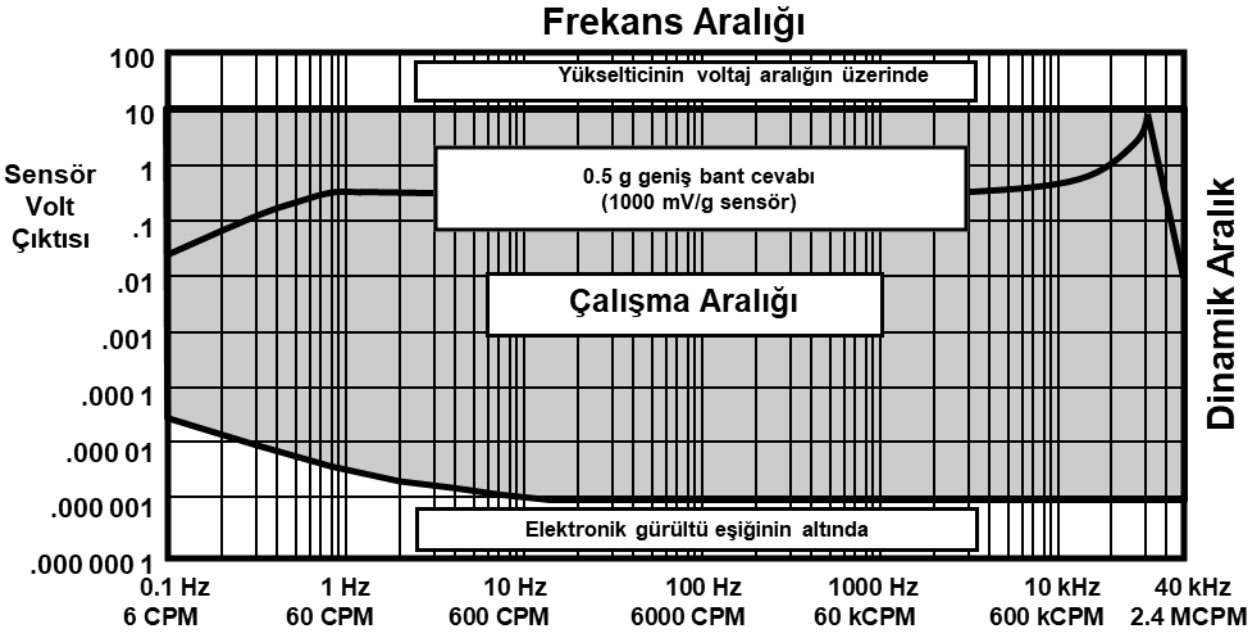


If the lowest natural frequency of the combined machine and support system in the direction of measurement is higher than its main excitation frequency (this is in most cases the rotational frequency) by at least 25 %, then the support system may be considered rigid in that direction. All other support systems may be considered flexible.

ISO 10816-3 Titreşim seviyesi tablosu – Hız cinsinden

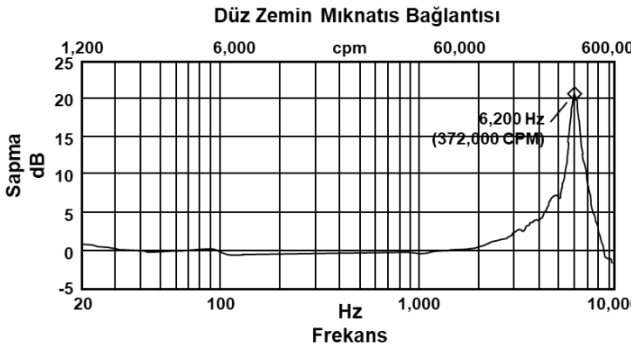


Sensör çalışma aralıkları

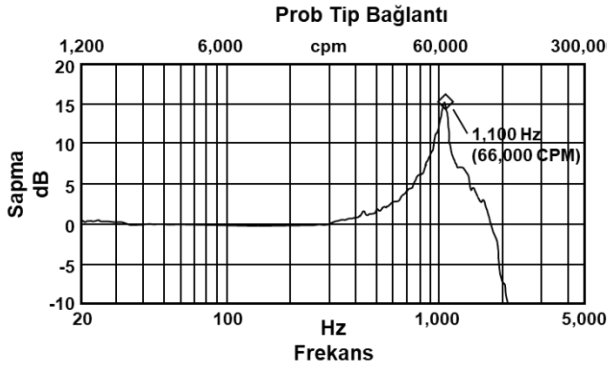


Sensör frekans cevabı
Mıknatıs – Kavisli Yüzey

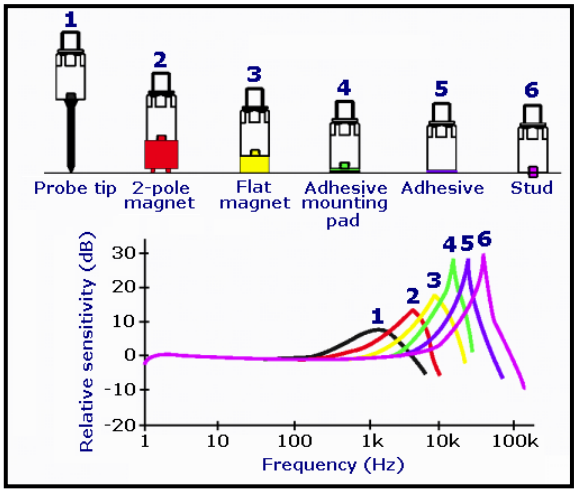
Sensör frekans cevabı
Mıknatıs – Düz Yüzey



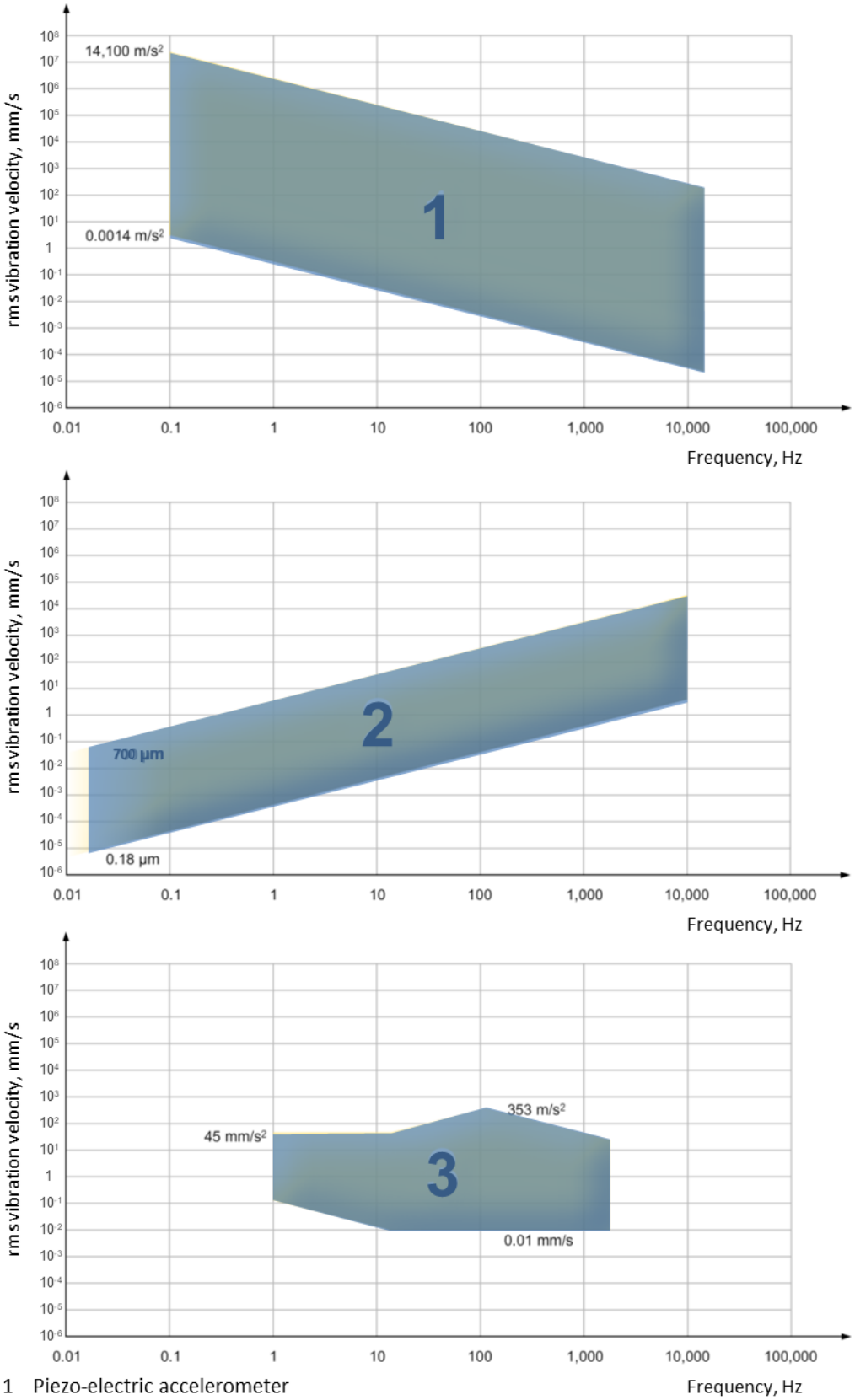
Sensör frekans cevabı
Stinger / El tipi bağlantı



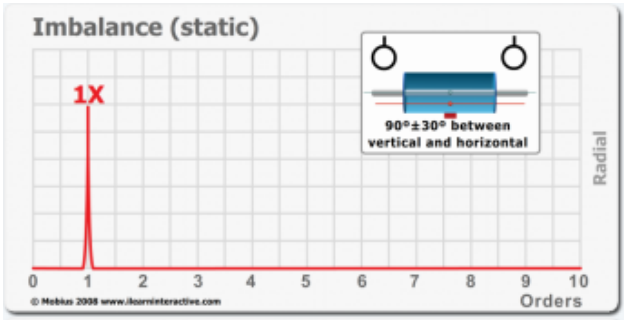
Sensör bağlantı tipleri frekans cevabı grafiği

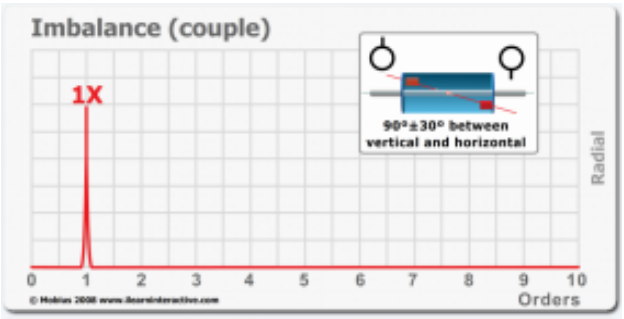


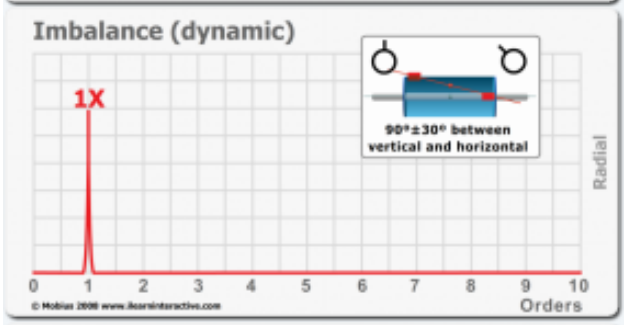
Frekans etkinlik bölgeleri

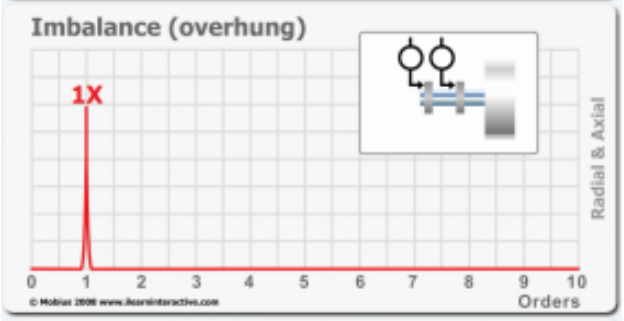


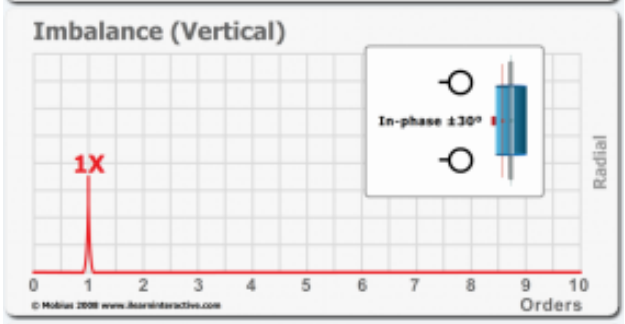
1 Piezo-electric accelerometer
2 Eddy-current proximity probe
3 Electro-mechanical velocity transducer

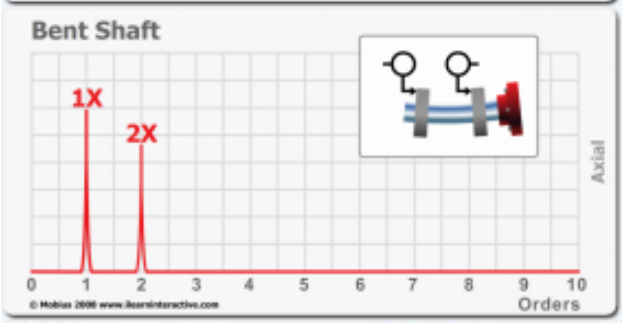


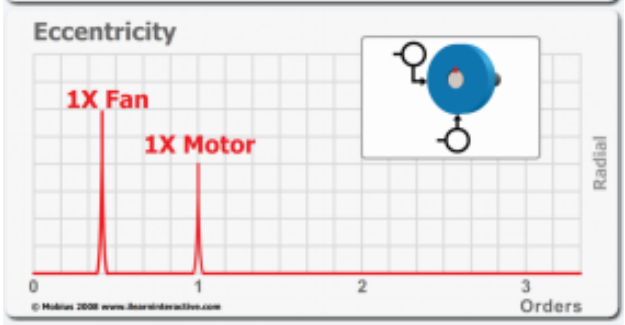


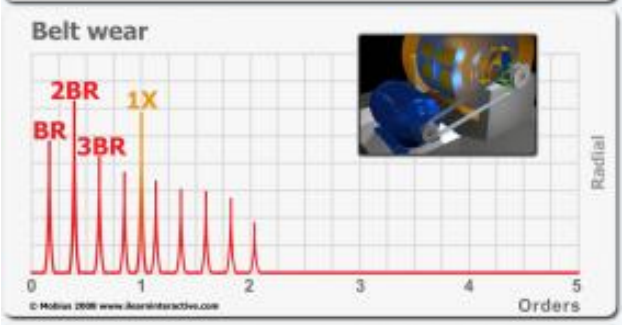


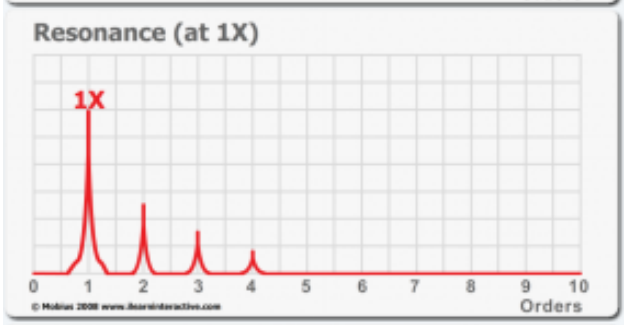


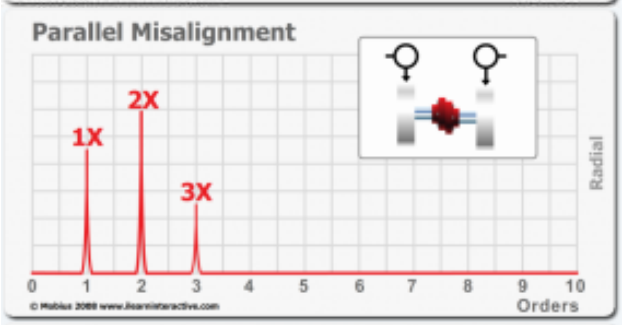


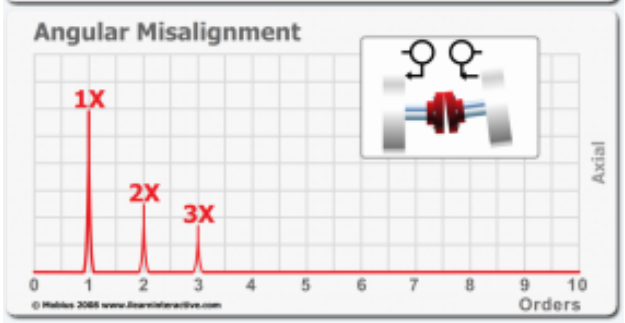


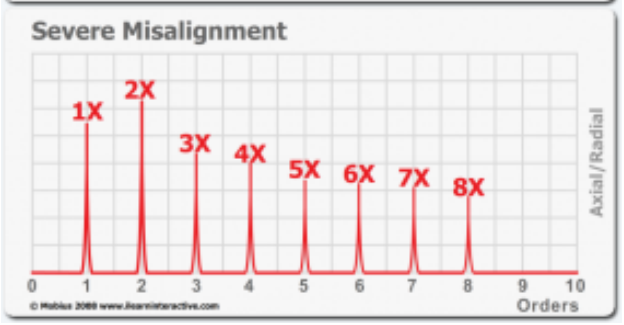




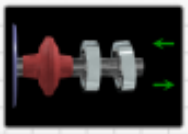






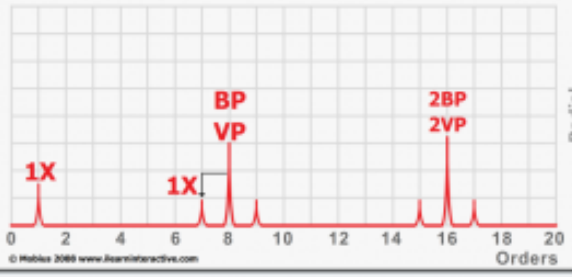


Cocked bearing

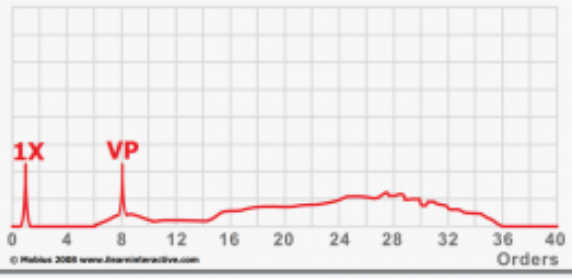


Belt Misalignment

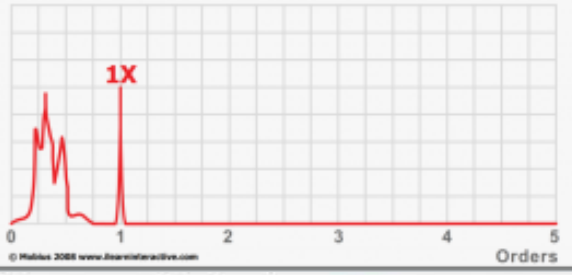
Blade/vane pass



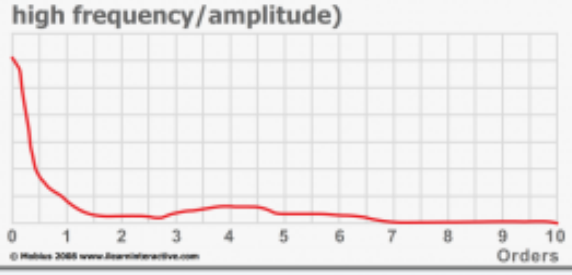
Cavitation



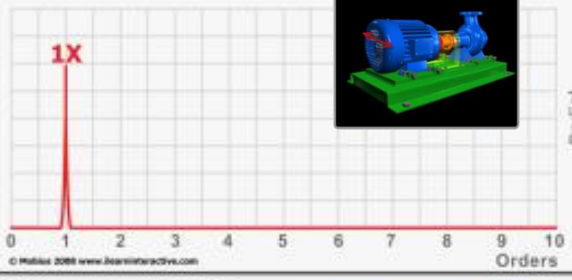
Flow turbulence



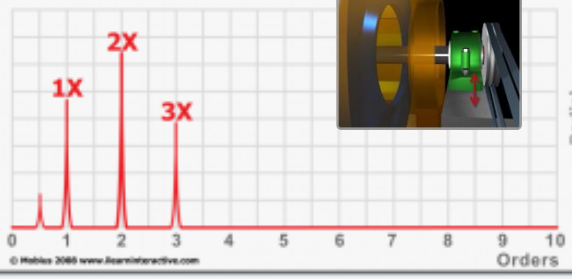
Ski slope (bad measurement or very high frequency/amplitude)



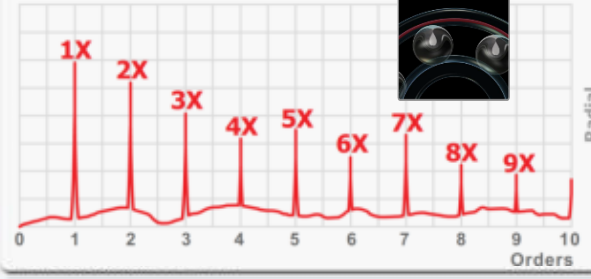
Looseness: Structural



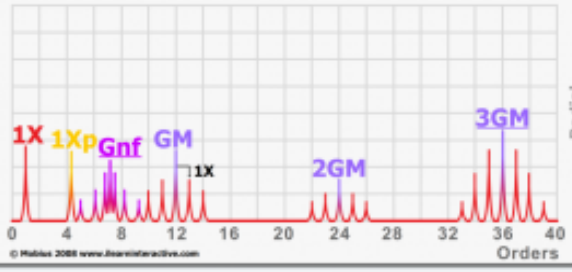
Looseness: Pedestal



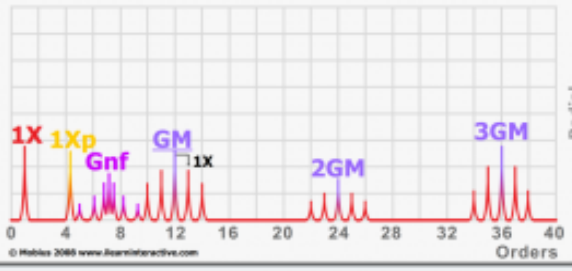
Looseness: Rotating



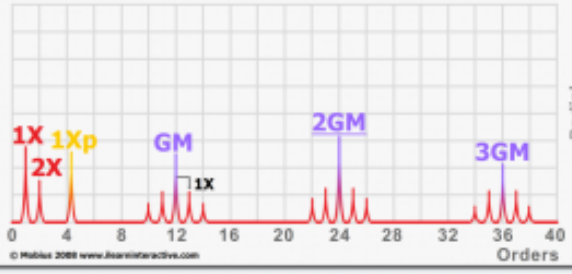
Gears: Tooth wear

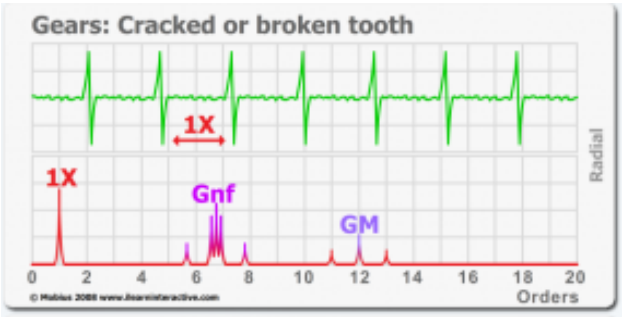


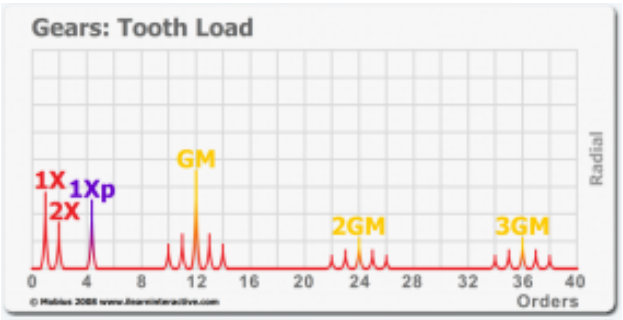
Gears: Eccentricity & backlash

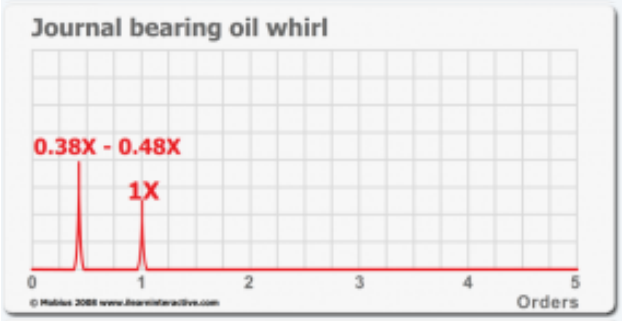


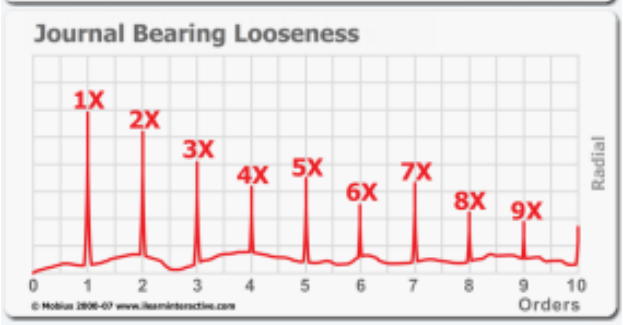
Gears: Misalignment

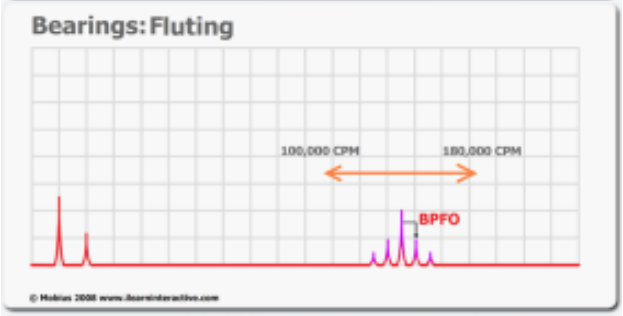


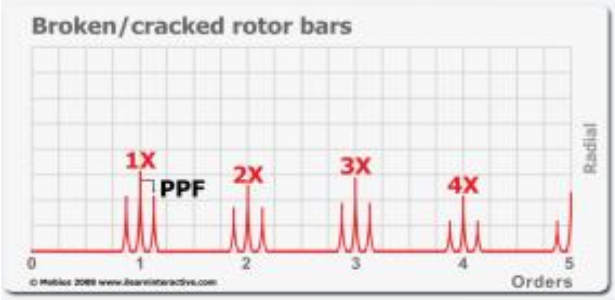


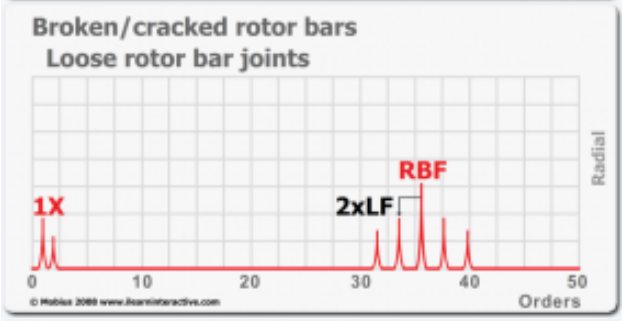


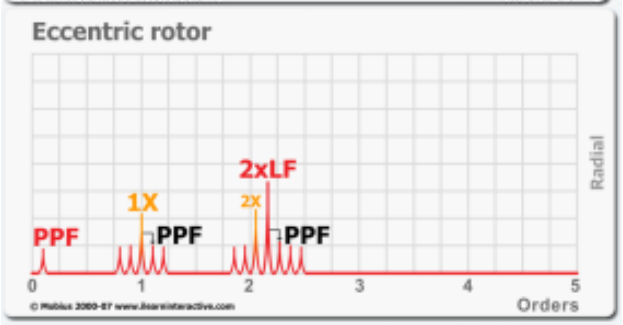


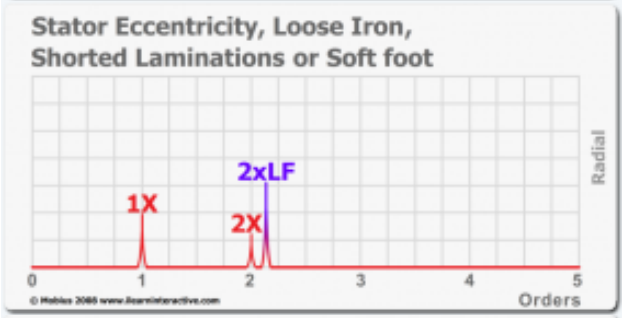


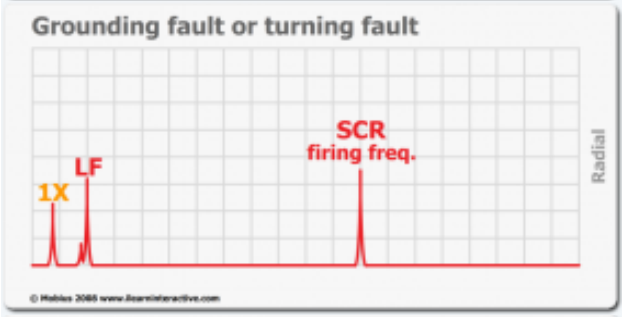


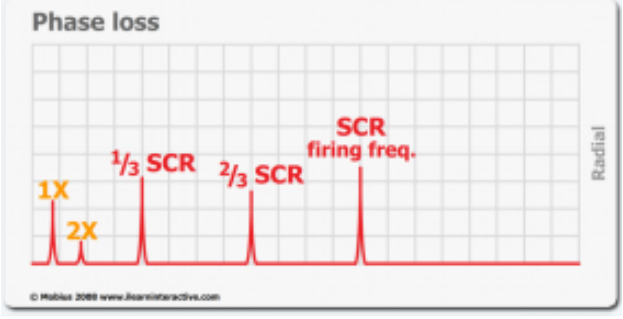


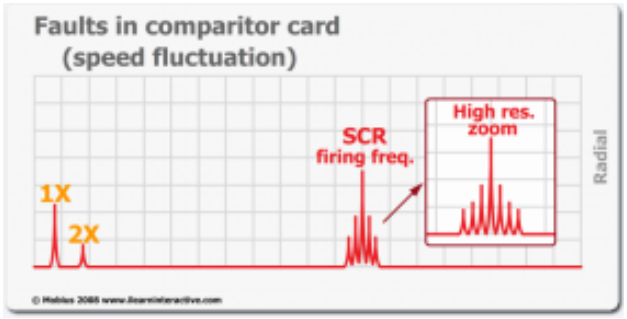


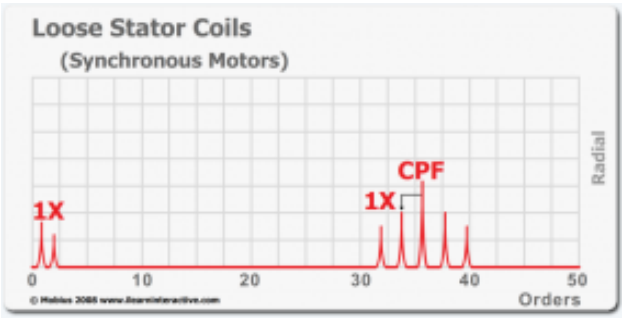


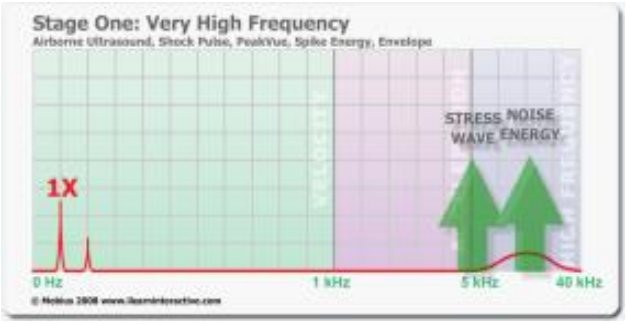




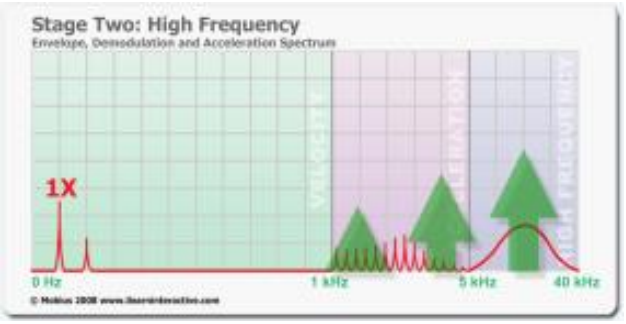




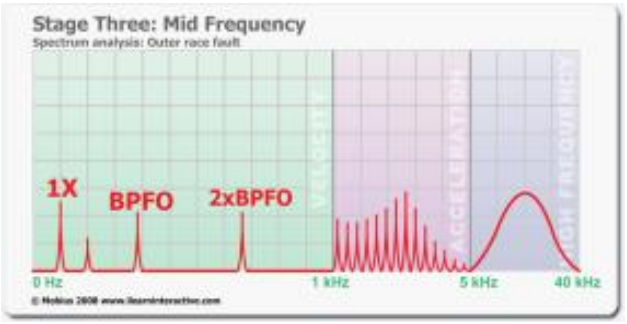




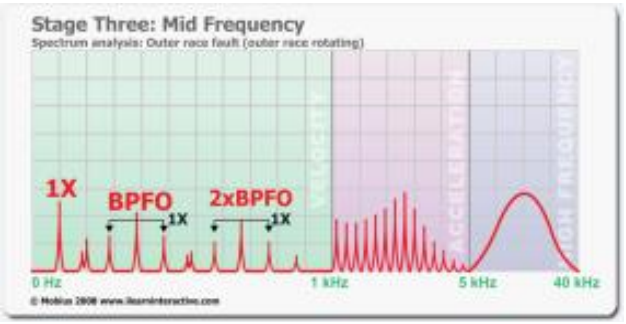
Birinci aşama: Ultrasound, Shock Pulse, PeakVue, Spike Energy, Zarf spektrumu



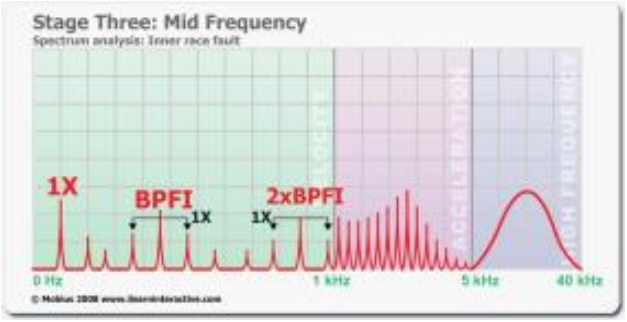
İkinci aşama: Zarf spektrumu, Demodülasyon, İvme Spektrumu



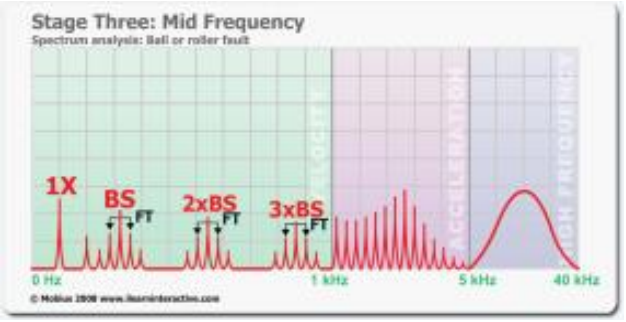
Üçüncü aşama: Dış bilezik arızası (iç bizelik dönüyor)



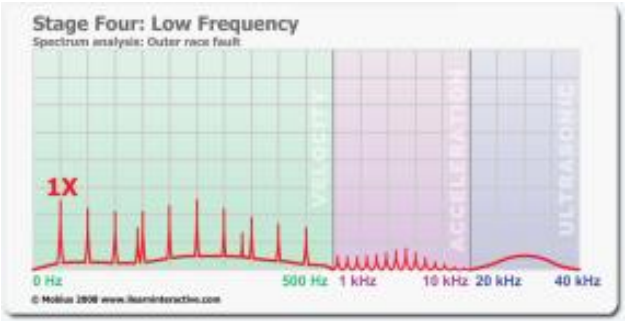
Üçüncü aşama: Dış bilezik arızası (dış bilezik dönüyor)



Üçüncü aşama: İç bilezik arızası (iç bizelik dönüyor)



Üçüncü aşama: Bilya / masura arızası (iç bilezik dönüyor)



Dördüncü aşama (son aşama)

Bu sayfa boş bırakılmıştır