

MATÉRIEL DE RÉFÉRENCE POUR L'EXAMEN DE CERTIFICATION

$$T = T_e \times N = \frac{N}{F_e} = \frac{N}{2.56 \times F_{max}} = \frac{\text{lignes}}{F_{max}}$$

T = Temps requis pour collecter la forme d'onde

T_e = Temps entre chaque échantillon

F_e = Fréquence d'échantillonnage = Échantillons par seconde

N = Nombre d'échantillons (1024, 2048, 4096, etc.)

$$\text{Résolution} = \frac{F_{max}}{\text{lignes}}$$

$$\text{Largeur de bande} = \text{Résolution} \times \text{Facteur de fenêtre}$$

Facteur de fenêtre = 1 (pas de fenêtre/uniforme/rectangulaire) ou 1.5 (fenêtre Hanning)

Fréquence de séparation ≥ 2 x Largeur de bande ≥ 2 x Résolution * Facteur de fenêtre

Lignes spectrales requises ≥ 2 x Facteur de fenêtre x Fmax / Fréquence de séparation

Précision de la fréquence (à la crête) = ± ½ x Résolution

Nombres premiers: 1, 2, 3, 5, 7, 11, 13, 17, 19...

1 po = 25,4 mm

1mm = 0,039 po

Calcul du poids d'essai:

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

F = 10% de la masse du rotor divisé par le nombre de roulements en kg

K = 0.011

N = RPM/1000

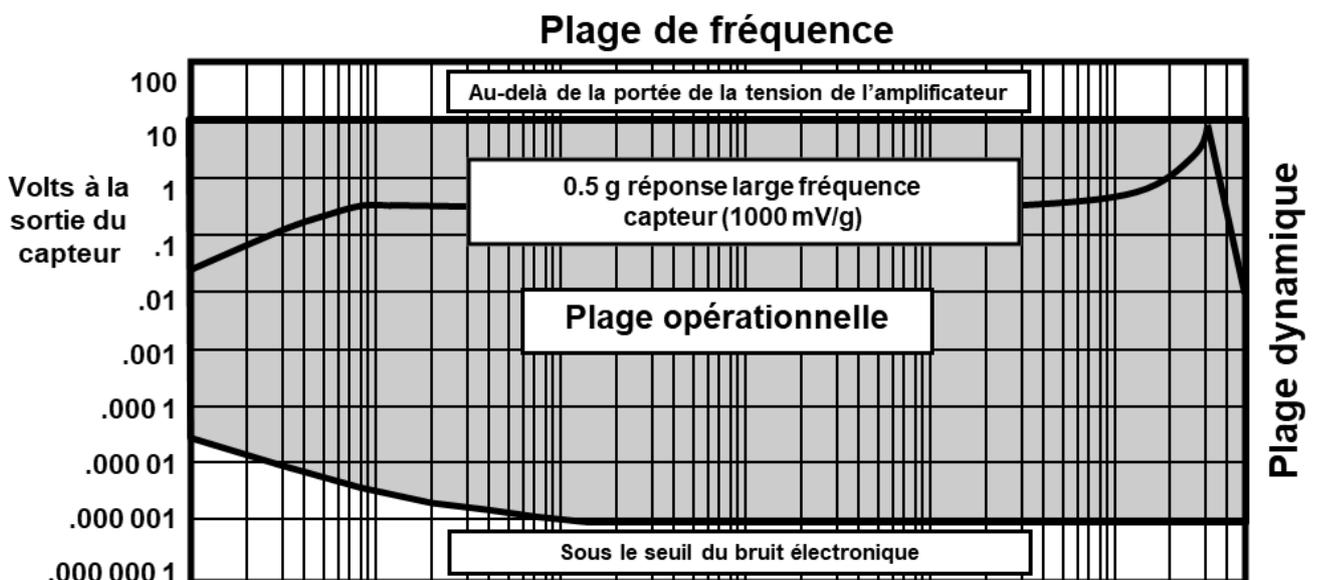
R = Rayon en cm

ISO 10816-3 Charte de sévérité des vibrations

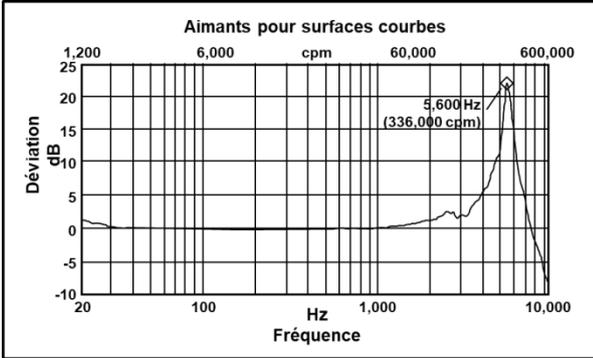
								Déplacement	
	D			140	5.51	10-1000Hz r > 600µpm 2-1000Hz r > 120µpm			
				113	4.45				
	C			90	3.54				
				71	2.80				
	B			57	2.24				
				45	1.77				
				37	1.46				
				29	1.14				
				22	0.87				
	A			18	0.71				
				11	0.43				
				µm rms	mil rms				
rigide	flexible	rigide	flexible	Fondation					
machines de taille moyenne 15 kW (20HP) < P ≤ 300 kW (402HP)		machines de grande dimension 300 kW (402HP) < P < 50 MW (67 kHP)		Type de machine					
moteurs 160 mm (6.3 po) SH < 315 mm (12.4 po)		moteurs H ≥ 315 mm (12.4 po)							
Groupe 2		Groupe 1		Groupe					

- A Mise en service
- C Opération à durée limitée, corriger
- B Acceptable pour un service à long terme
- D Endommagement probable

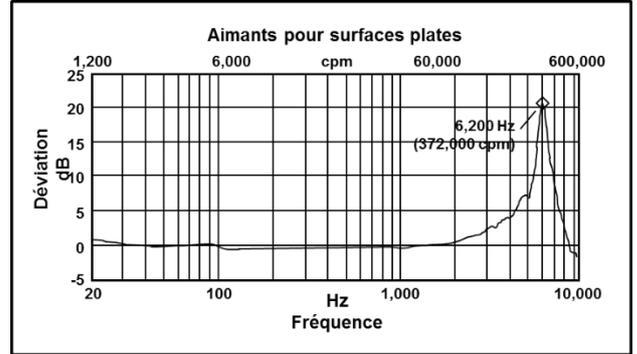
Région de fonctionnement des capteurs



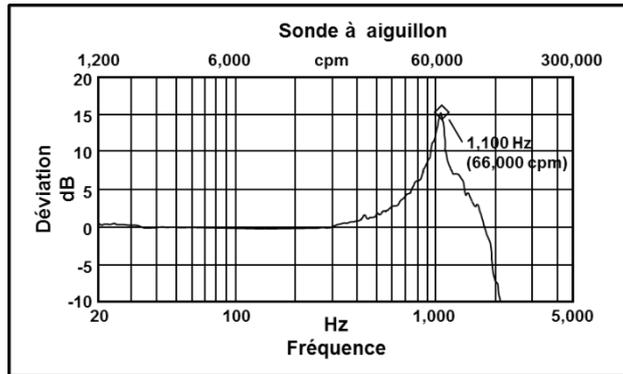
**Réponse en fréquence des capteurs
Aimants sur surfaces courbes**



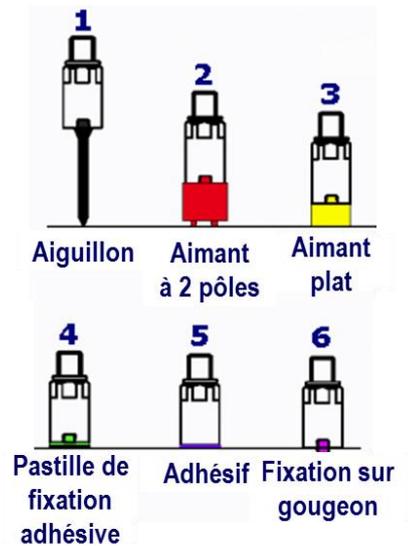
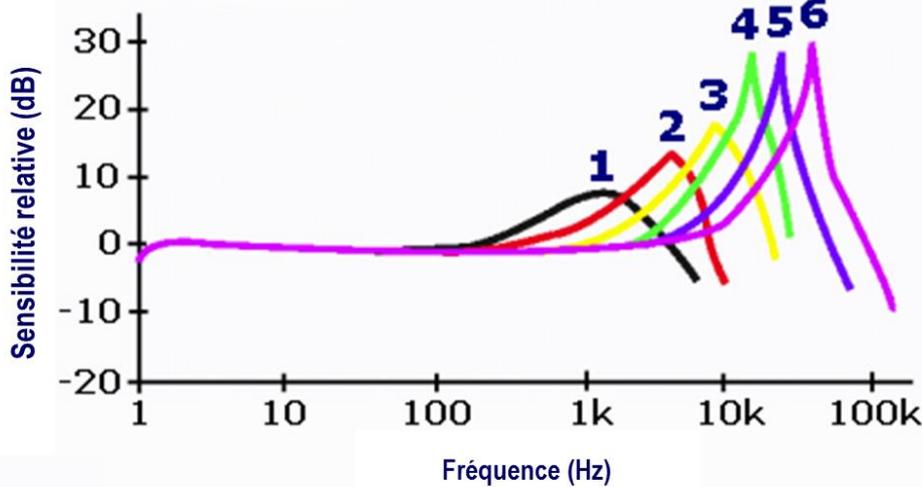
**Réponse en fréquence des capteurs
Aimants sur surfaces plates**



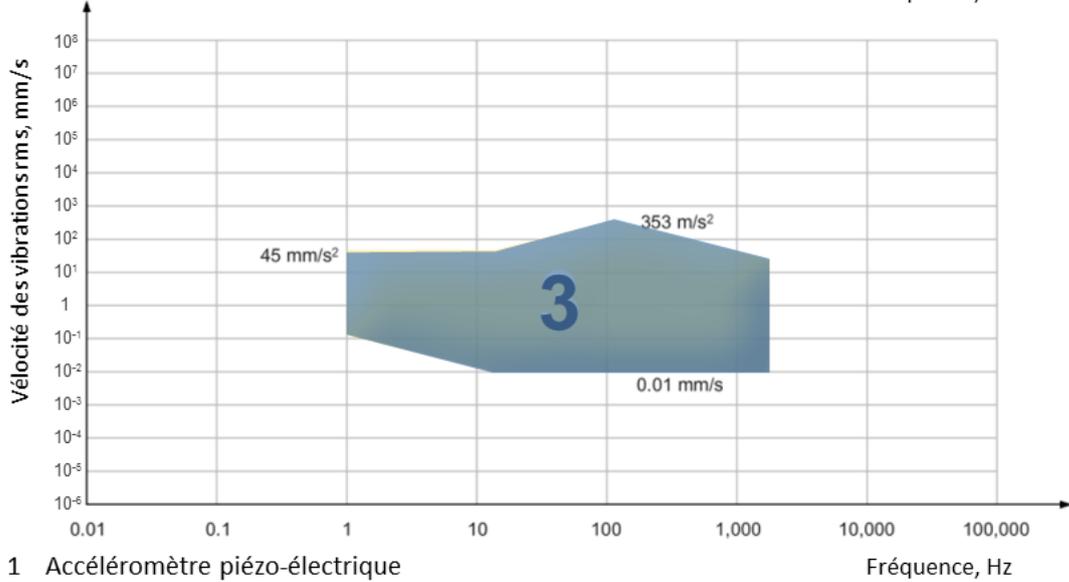
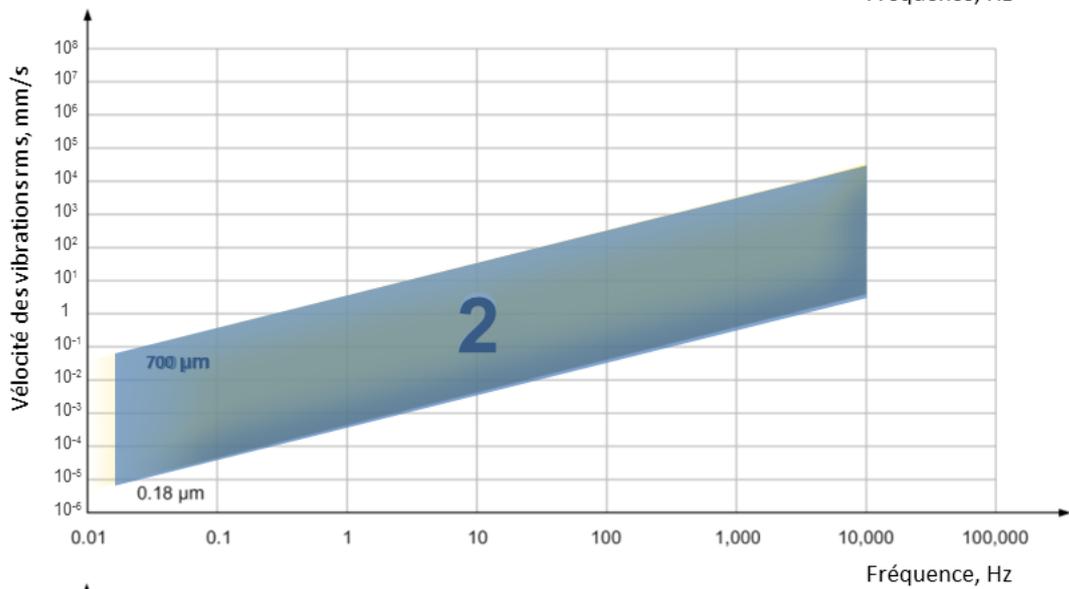
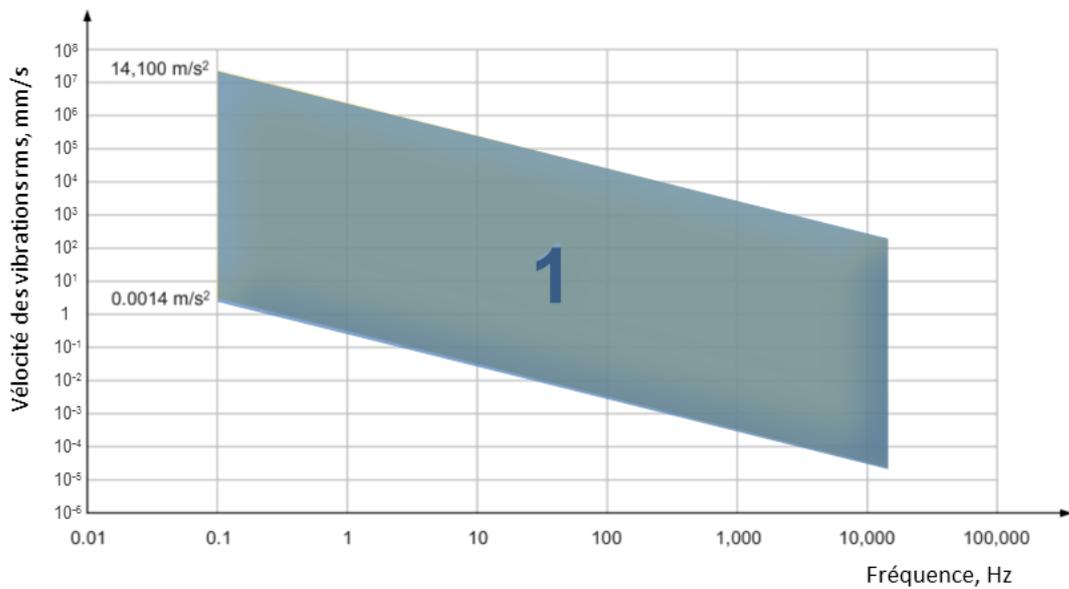
**Réponse en fréquence des capteurs
Tige de contact ou sonde manuelle**



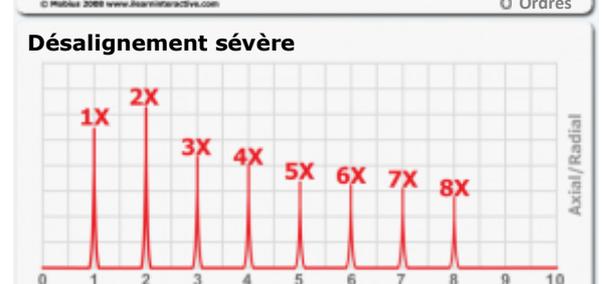
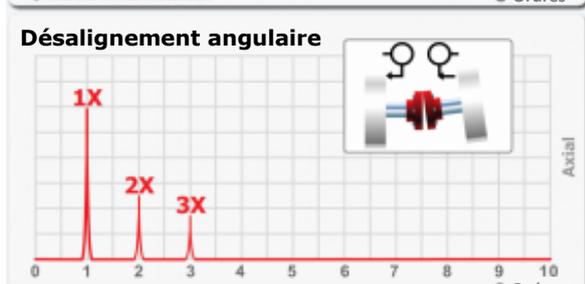
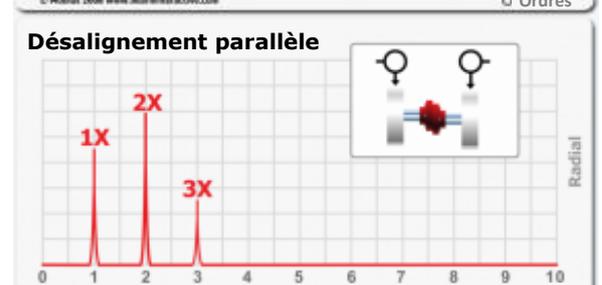
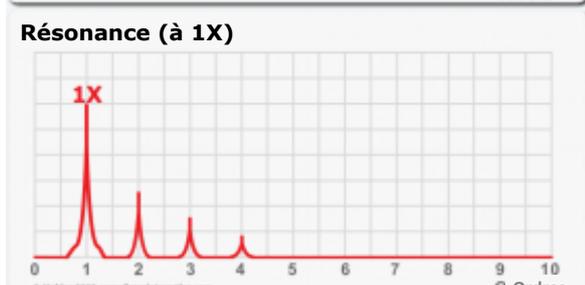
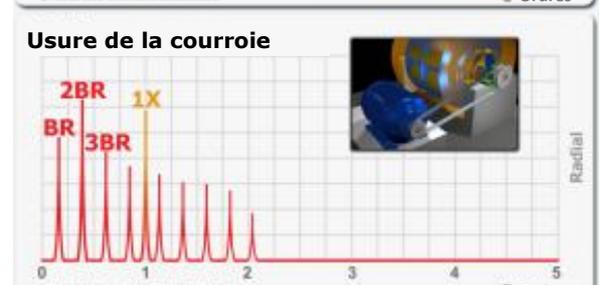
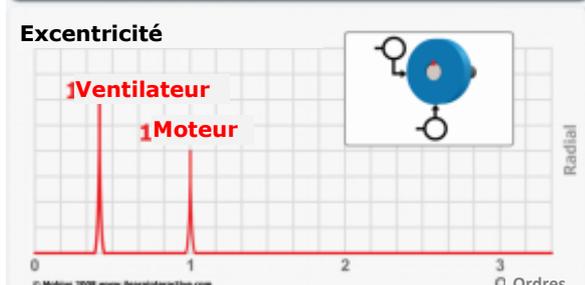
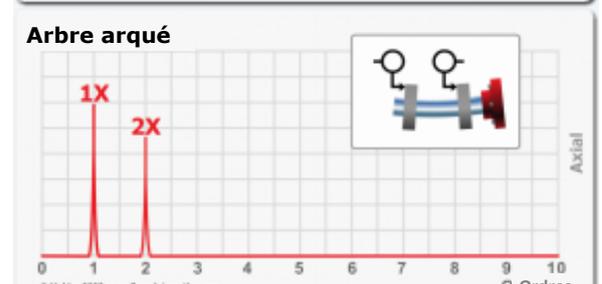
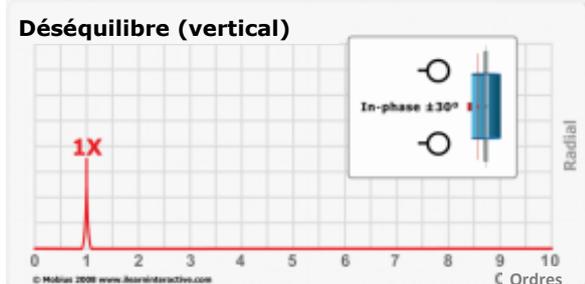
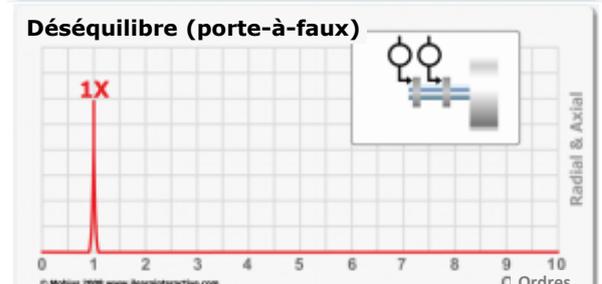
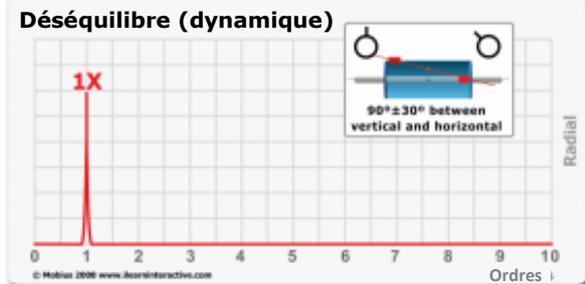
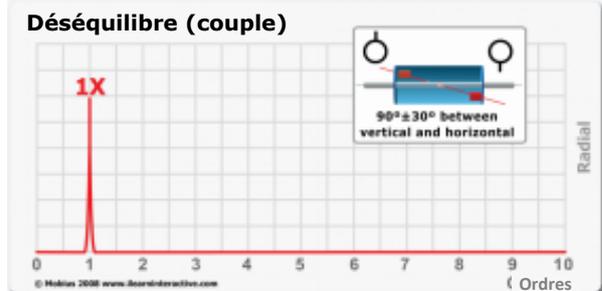
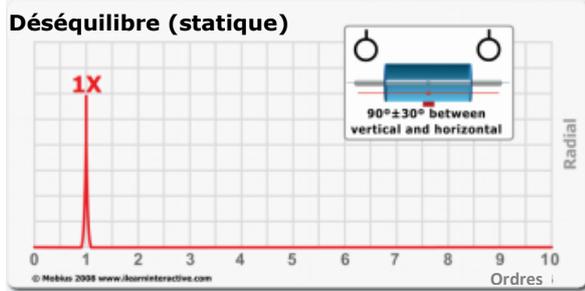
Courbes de réponse en fréquence des capteurs

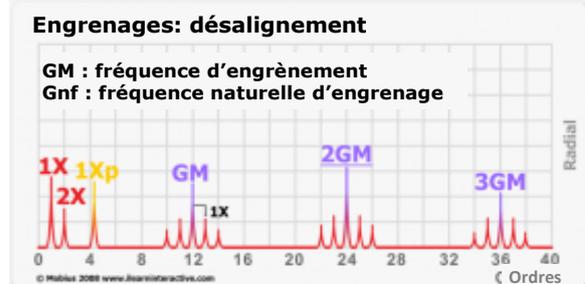
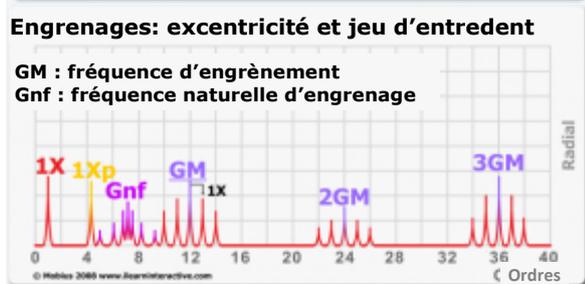
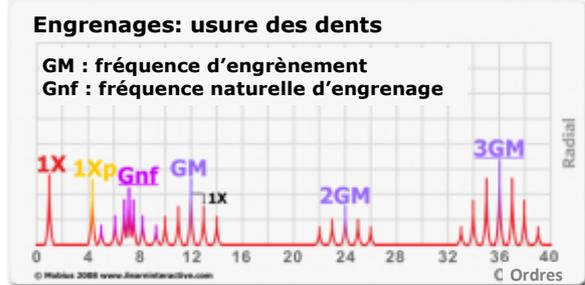
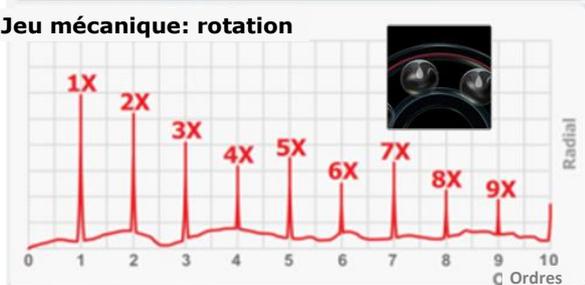
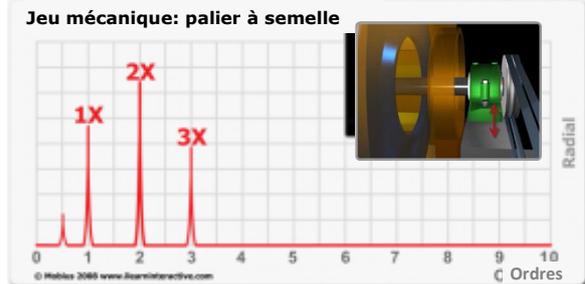
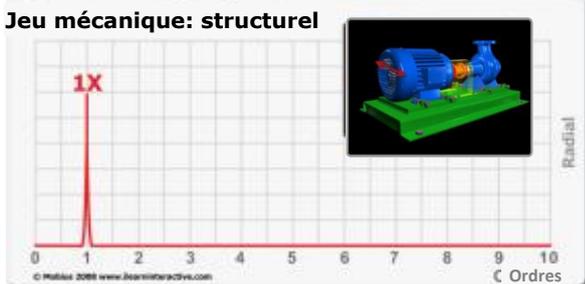
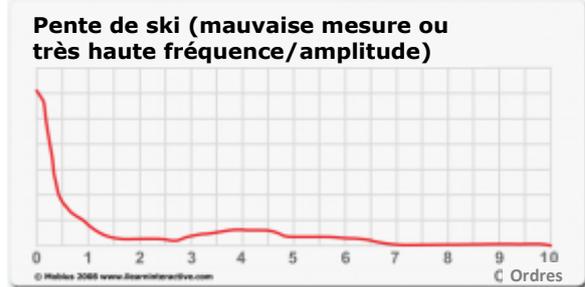
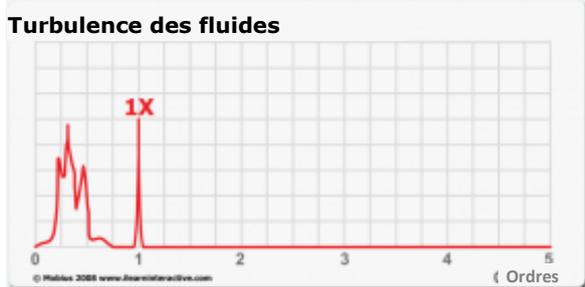
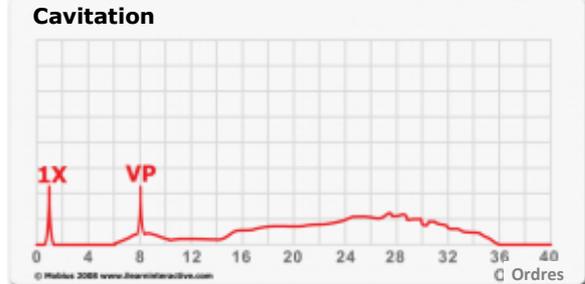
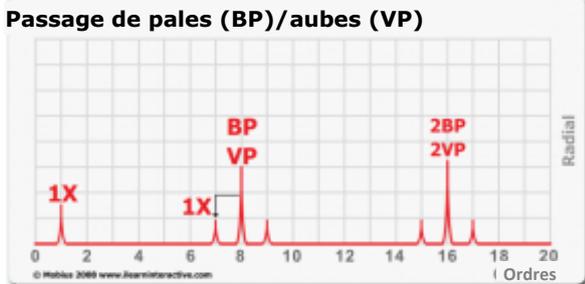
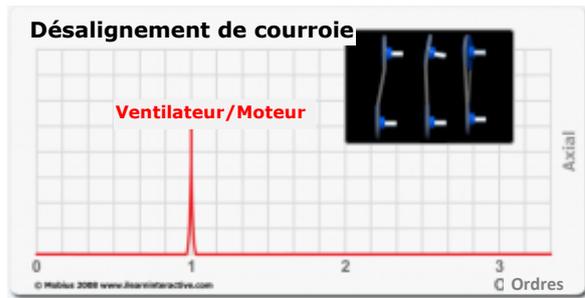
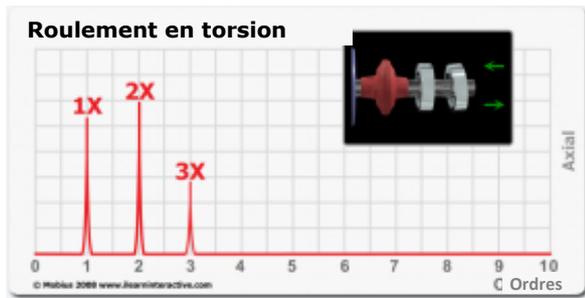


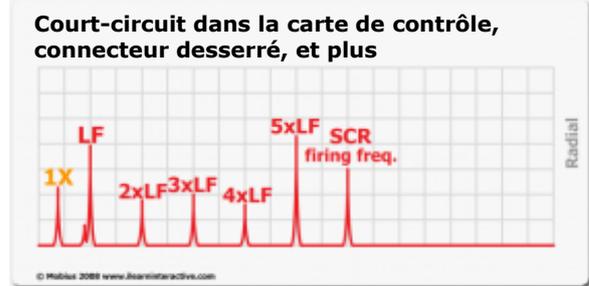
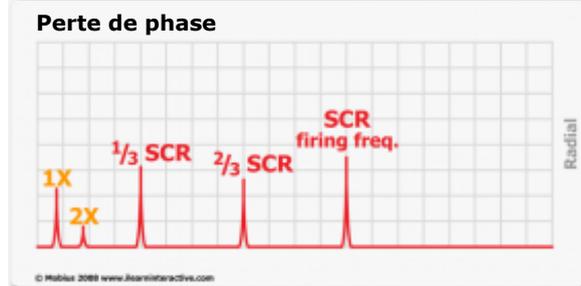
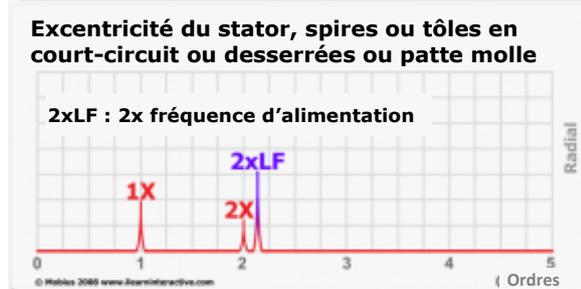
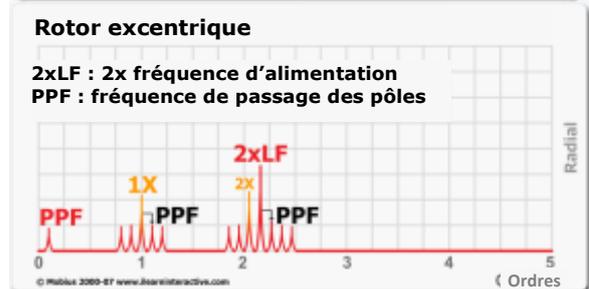
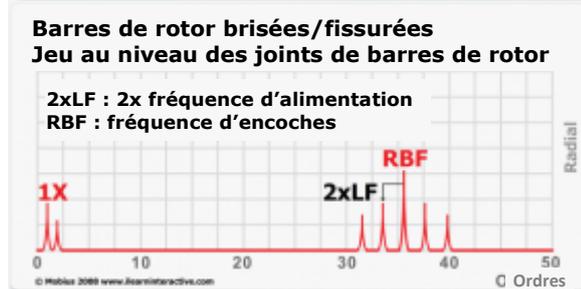
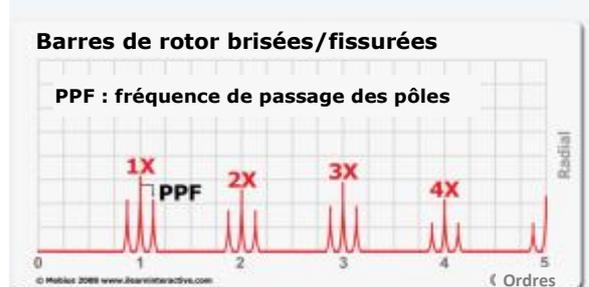
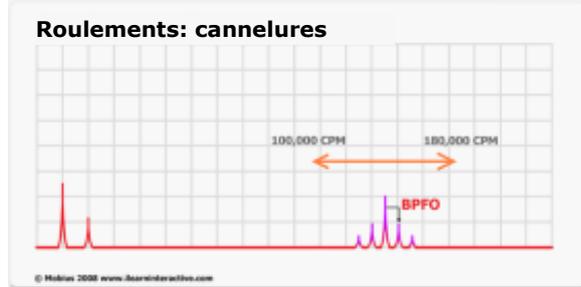
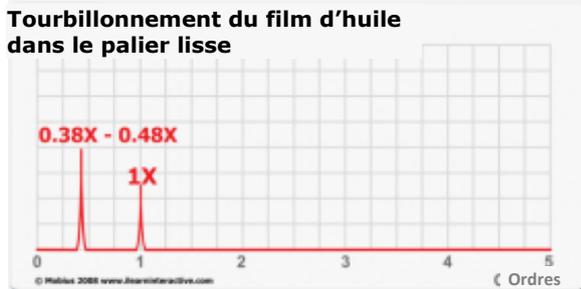
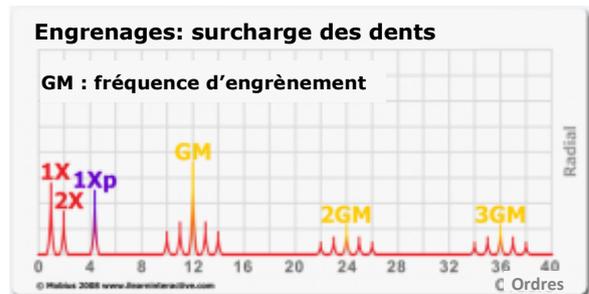
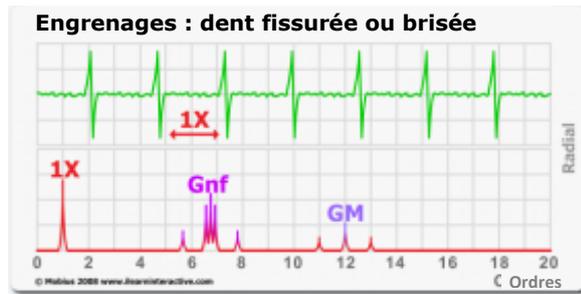
Régions d'efficacité des capteurs

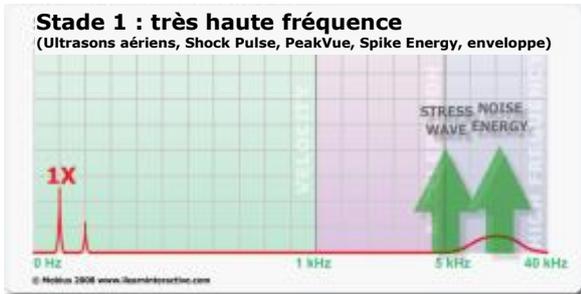
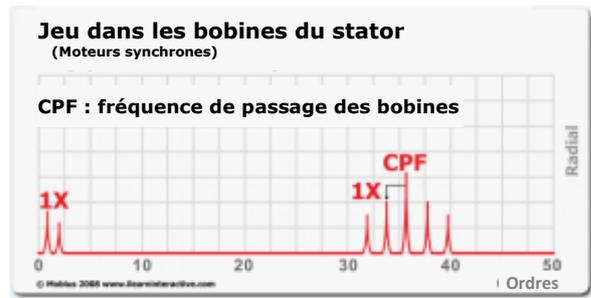
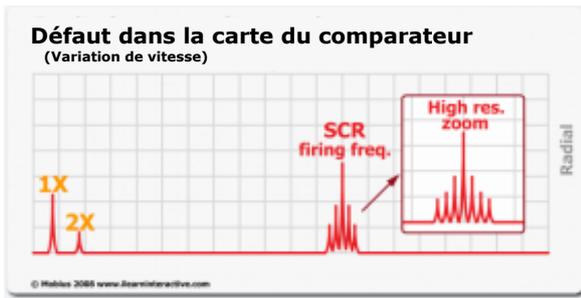


- 1 Accéléromètre piézo-électrique
- 2 Capteur de proximité à courant de Foucault
- 3 Capteur de vitesse électro-mécanique

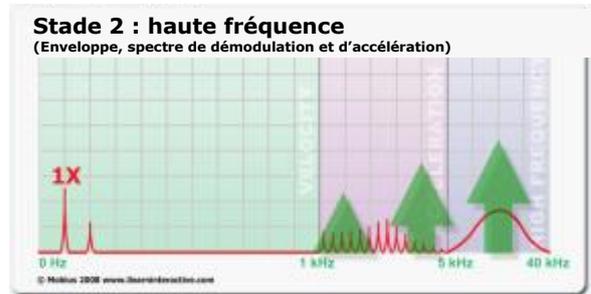




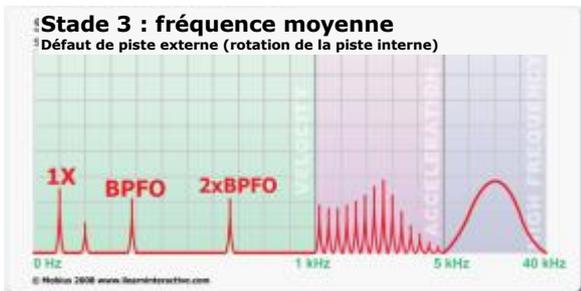




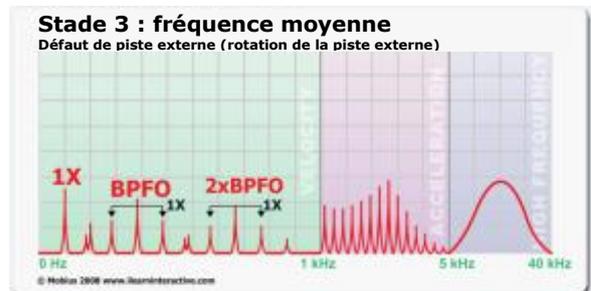
Stade 1: (Ultrasons aériens, Shock Pulse, PeakVue, Spike Energy, enveloppe)



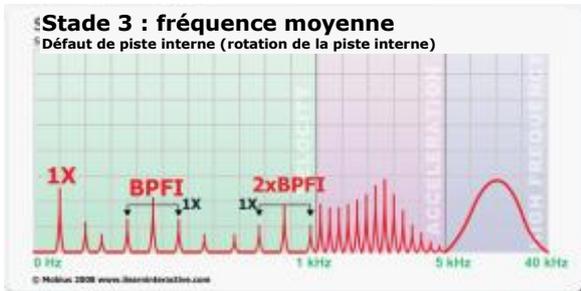
Stade 2: (Enveloppe, spectre de démodulation et d'accélération)



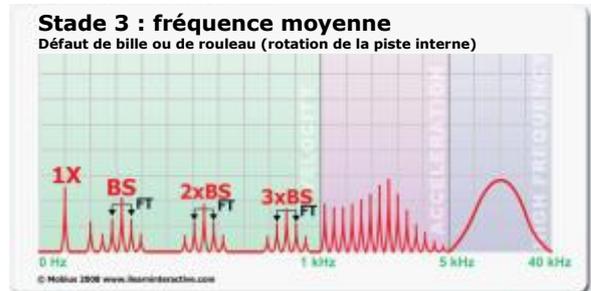
Stade 3: Défaut de piste externe (rotation de la piste interne)



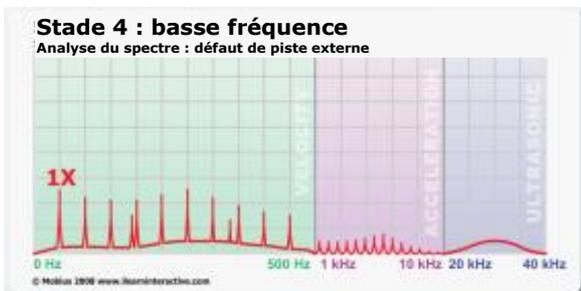
Stade 3: Défaut de piste externe (rotation de la piste externe)



Stade 3: Défaut de piste interne (rotation de la piste interne)



Stade 3: Défaut de bille ou de rouleau (rotation de la piste interne)



Stade 4

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