Accelerometer mounting and installation techniques
Wilcoxon Research® products

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Mounting considerations

- Is the location for monitoring in a safe, accessible location?
- Can the accelerometer be permanently mounted?
  - Can the machine be faced properly?
- Mounting location
  - Where is the best location?
  - Are there obstacles?
- What are the frequencies of interest?
Accelerometer mounting options

» Hardware selection
» Mounting location
» Surface preparation
» Mounting resonance
Mounting technique determines mounted resonance

![Graph showing relative sensitivity vs frequency for different mounting techniques.]

1. Probe tip
2. 2 pole magnet
3. Flat magnet
4. Adhesive mounting pad
5. Adhesive
6. Stud
Probe tips

- Use on difficult to reach areas and aluminum motor frames
- Do not use for measurements less than 10 Hz
- Mounted resonance 800 – 1,500 Hz
Magnets for curved surfaces

» Use on irregular and curved surfaces
» Made of SmCo26 (samarium cobalt)
» Includes 1/4-28 stud
» Mounted resonance 3,000 – 7,000 Hz
Magnets for flat surfaces

- Use on flat surfaces or magnet pads
- Magnet made of rare earth material
- Some have an integral 1/4-28 mounting stud, others have a 1/4-28 tapped hole
- Other stud sizes are available
- Mounted resonance 5,000 - 10,000 Hz
Adhesive mounting pads

» Provides adequate frequency response
» Models available for most common thread sizes
» Models available with tapped holes for use with captive screw accelerometers

Wilcoxon SF8 mounting pad
Adhesive mounting

» Spot face surface
» Abrade surface
» Clean surface
» Use proper adhesive
  - VersiLock® 406 / Cat 19
  - Loctite® Depend
  - Loctite® Liquid Metal
» Use proper mix ratios
Mounting studs

- Provides highest frequency response
- Various stud sizes are available
- Captive screws with are available with various mounting threads
Stud mounting

- Tap drill hole to proper depth
- Spot face surface perpendicular to hole
- Tap proper threads
- Ensure flatness, surface texture and perpendicularity
Advantages of permanently mounted sensors

- Safety
- Convenience
- Repeatability of data
- Faster data collection
- Reduces auto collection errors
Coupling fluids

- Coupling fluids should be used between the sensor and mounting surface interfaces
- Coupling fluids include:
  - Silicone grease
  - Oil
  - Petroleum jelly / beeswax
Mounting responses

Probes: tip, flat magnet, curved surface magnet
Mounting resonance

- Mounting resonance can amplify high frequency signals and increase overload
- Mounting resonance can appear to be severe rolling element and gear mesh faults
Mounting location

» Mount in the load zone
» Mount as close to the point of interest
» Use low profile, side exit sensors for confined areas
  – Allows for neat cable routing
Permanent monitoring solutions
Switchboxes

» Provide connection centers for terminating cables
» Connections to portable data collectors.
» Used in most industrial applications
Thank you