

# Vibration Tester

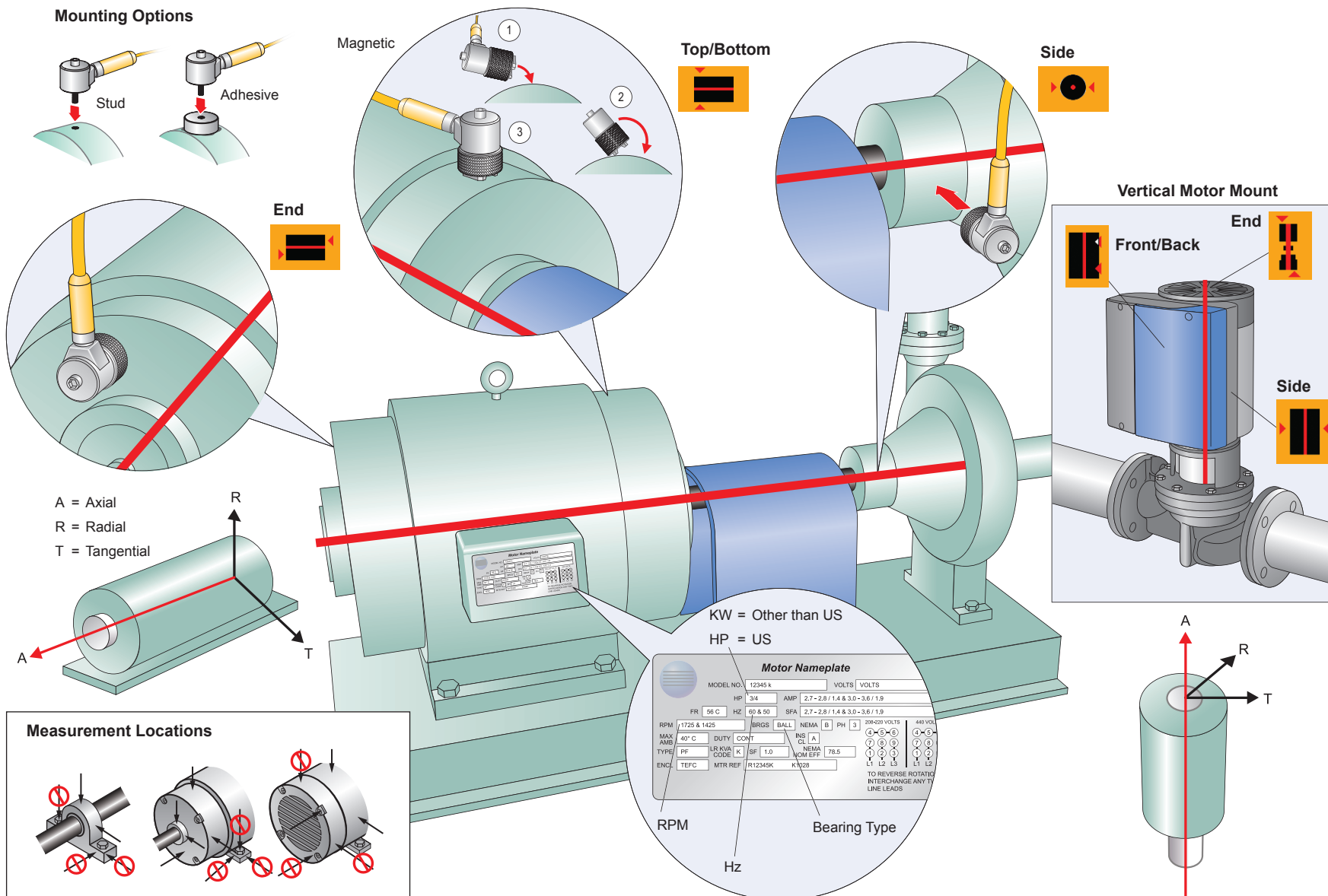
FLUKE®

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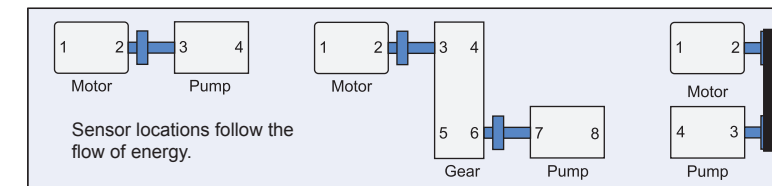
Quick Reference Guide



## Sensor Placement and Orientation



## Sensor Location Numbering



## Measurement Tips

- If the driving motor has >40 HP (30 kW) and is >40 inches (102 cm), take two measurements from each component in the drive train. If not, one measurement per component is sufficient.
- Place the triaxial Sensor on a solid metal surface (not fan shrouds or cooling fins) as close to the machine bearings as possible. Use the same locations and Sensor orientations over time to ensure consistent diagnoses.
- Attach the Sensor to a clean, flat, bare metal surface if possible.
- Sensor cable position should be parallel or perpendicular to the drive shaft whenever possible.
- Hold the Sensor firmly and carefully roll the Sensor onto the test surface to minimize the potential for impact.

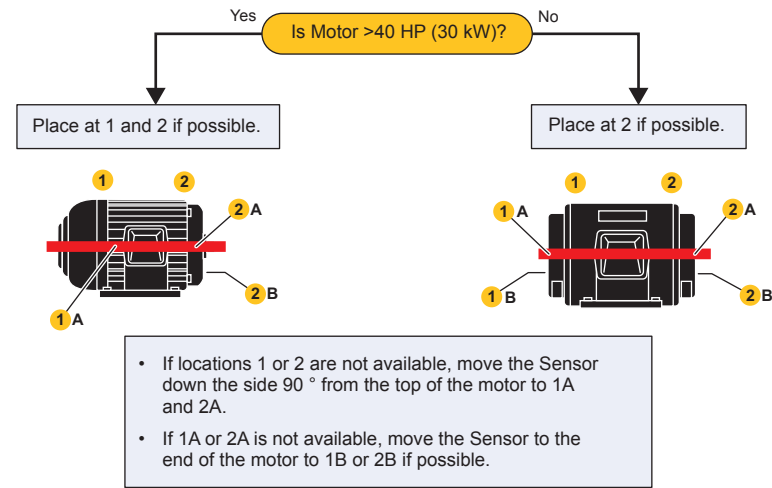
## Severity Scale



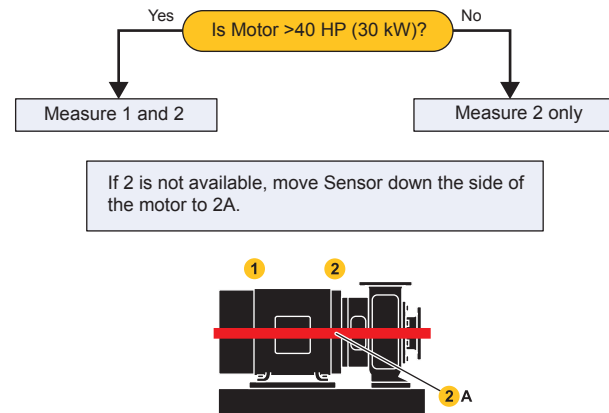
<b>Slight</b>	No repair action is recommended. Retest the machine and monitor the condition after maintenance.
<b>Moderate</b>	(Months, even up to a year) – No immediate repair action is required. Increase the frequency of measurements and monitor the condition of the machine.
<b>Serious</b>	(Weeks) – Take maintenance action during the next planned downtime or maintenance period.
<b>Extreme</b>	(Days) – Immediate action is required. Consider shutting down the equipment and taking repair action now to avoid failure.

## Motor Input (Driver)

### Coupled Motors



### Motor Close-Coupled Pumps and Fans

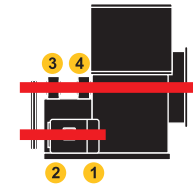


## Transmission

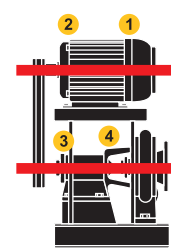
### Belt/Chain Driven Machines

Locate Sensor on each pillow block fan bearing or bearing housing (pump) at 3 and 4.

#### Typical Belt-Driven Horizontal Fan



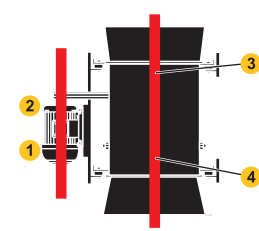
#### Typical Belt-Driven Pump



Locate Sensor at 4.

Note: Threaded rod or welded struts holding the motor and fan should extend to ducting. Place the Sensor on the structural rods or struts.

#### Typical Axial Flow Fan

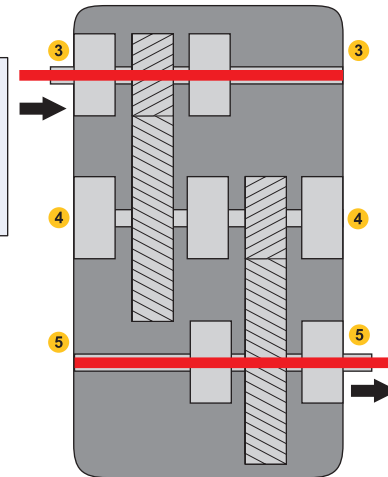


### Gearbox

#### Double-Reduction Gear Internal View

Preferred locations:

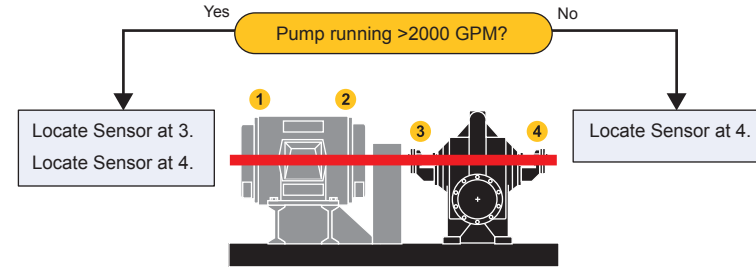
- 1st bearing on the input shaft, preferably thrust bearing at 3.
- Last bearing on the output shaft at 5.



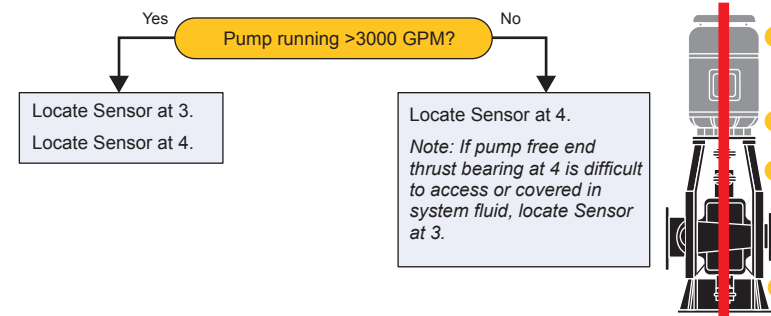
## Driven Components

### Centrifugal Pumps

#### Typical Horizontal Pump



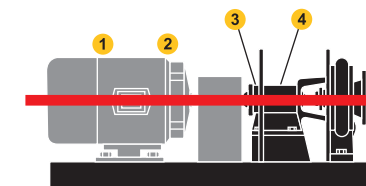
#### Typical Vertical Pump



### Overhung Coupled Pumps - Horizontal

Preferred pump locations:

- Place the Sensor as close to the bearing as possible, preferably on top at 3 and 4.
- If 3 is not accessible, then measure at 4.

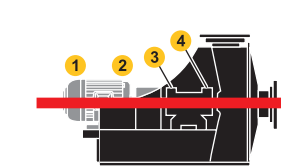


### Fans

#### Typical Gland Exhaust Fan

Preferred location at 3 and 4

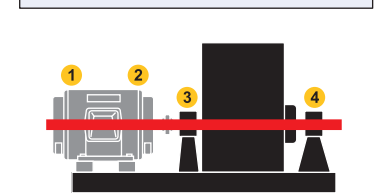
Note: If top of housing is inaccessible, select position on the side of housing.



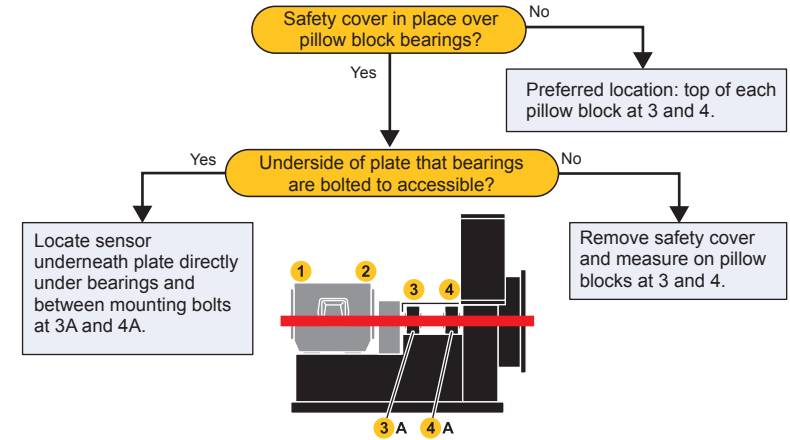
#### Typical fan with pedestal bearings

Preferred locations at 3 and 4

Note: Greater vibration isolation due to longer shaft and pedestal bearings requires measurement at both fan bearing locations.



#### Typical ventilation fan / forced shaft blower



### Compressor Single Stage (Screw)

Preferred locations at 3 and 4 are at the top of the drive shaft (male screw) as close to the bearings as possible.

