

Pump Vibration Levels

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Vibration levels can be used to monitor bearing condition and provide an excellent diagnostic tool for preventative maintenance. Both permanently mounted accelerometers and portable sensing units can be used to track changes in the vibration signal as the equipment ages. Once baseline measurements are established under normal operating conditions, routine monitoring can alert the operator to potential problems.

Typical baseline values

Vibration Limit (RMS Unfiltered)		Condition
0.25 inch/s	6.3 mm/s	For GIW 4 and 5 vane slurry pumps with following qualifiers: <ul style="list-style-type: none"> • Operation on clear water. • Operation within the preferred operating range. • Properly designed foundations. • Properly aligned couplings and/or sheaves. • Properly designed piping supports and/or isolation. • Acceptable piping loads according to applicable standards. • No cavitation or entrained air. • No natural frequency resonance in equipment outside the manufacturer's scope of supply.
0.30 inch/s	7.6 mm/s	For factory testing: Increased to allow for the less permanent and robust mounting arrangement
Review by GIW		<ul style="list-style-type: none"> • 3 Vane pumps • Large sphere clearance pumps • or if guarantees are to be given

Typical set points

As with temperature, vibration readings can be used to trigger alarms or pump shut down. Set points may need to be adjusted according to ambient conditions created by the operating environment. For medium duty conditions approximating the above qualifiers, the following set points would be typical. For duty specific recommendations, contact your GIW representative.

Vibration Limit (RMS Unfiltered)		Condition
0.25 inch/s	6.3 mm/s	Warning alarm to operator (vibration borderline): Pump inspection recommended Fault should be identified and monitored Shutdown not required..
0.35 inch/s	8.9 mm/s	Action alarm to operator (vibration high): Immediate pump inspection mandatory Fault should be identified and corrected Shutdown may be required depending on the nature of the fault
0.45 inch/s	11.4 mm/s	Trip alarm (vibration unacceptable): Fault must be corrected Pump shutdown mandatory