HI-SPEED INDUSTRIAL SERVICE

MILLINGTON, TN

October 13, 2020

Integrity Mechanical

Subject: Rhodes College Air Handler

Vibration data collected prior indicated the unit suffers from a resonance or critical at around 80% on the drive (732 RPM), which decreased at higher speeds. Balancing was performed at 100% on the drive (891 RPM). Results are in mils peak to peak. Total weight added in two planes is 182 grams. Other Possible issues of note are that the motor sheave is almost exactly half the size of the fan sheave, so the fan spins at the Motor first harmonic and subsequent odd motor harmonics as well as the fan sheave was found to be worn. Worst yet is that the fan shaft was inspected, and dial indicated near the middle and found to have a Total Indicated Run Out (TIR) of about 0.012". All of this can contribute to forcing frequencies which add up and influence the total vibration.

Balance Results are as follows:

Bearing	Vibration as found	Vibration as left
Inboard	1.94 mils pp	0.68 mils pp
Outboard	1.2 mils pp	0.77 mils pp

Recommendations

Re-measure fan shaft run out in multiple locations and doccument. Replace/repair bent fan shaft if confirmed out of tolerance. Replace worn fan sheave with like size or different to reduce harmonic issues. Re-balance if necessary.

Hi-Speed **Industrial Service** tests and inspects industrial machinery and equipment and makes recommendations concerning maintenance and repairs based on its experience in the field of industrial repair and maintenance. The information contained herein is provided as an opinion only, not as a guaranty or warranty of the matters discussed herein.

This completes our assessment of your equipment for this survey. Thank you for your business and don't hesitate to call if you have any comments or questions.

Sincerely,

David W. Shook
Senior Reliability Specialists
Hi-Speed **Industrial Service**
dshook@gohispeed.com