

TITLE

Main Air Blower Motion Amplification Study, Lucite Fite Road Memphis, TN

1: Executive Summary

Hi-Speed Industrial Service was called in on March 26, 2021 to use its Motion Amplification Technology to help determine if excessive vibration is present in the blower section of the Main Air Blower.

2: Methodology of Data Acquisition

Video was taken at side view of the blower bearing assembly and base plate and at each foot of the volute housing.

3: Data Analysis & Results

Click on picture to open video link (may need to change quality to 1080p in video settings)



Main Air Blower

Figure 1: Motion Amplification, Side View Blower Bearing Assembly/Baseplate



Figure 2: Motion Amplification, Volute Left Foot



Figure 3: Motion Amplification, Volute Right Foot

4: Conclusion(s) and Recommended Corrective Action(s)

Motion amplification video of the Main Air Blower did not show any excessive movement at 1 x rpm of the blower. Overall casing vibration varied from .04 to .08 ips-pk or less than 1 mil pk-pk. Onboard proximity probes are installed on this unit and were showing .7 mil and 1.7 mil pk-pk. We performed a quick analysis while on site and relative vibration was much lower. The proximity probes will read higher amplitudes as they measure absolute displacement of the blower shaft; however, casing vibration was .4 mil pk-pk or less. We recommend inspecting the shaft ensuring there are not scratches, knicks, or dings on the shaft. Also ensure probes gap voltage is set properly.

If no issues are found with probes and vibration persists, then blower wheel may have imbalance and or excessive bearing clearances.

This concludes our assessment of the Turbine Main Air Blower. Please feel free to contact us for any questions or comments.

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