

# **Phelps Fan**

EXPERIENCE AND EXCELLENCE SINCE 1915

## **Fan Vibration Checklist**

Your fan unit has been balanced per the following;

Balance: Impellers are balanced to within ANSI S2.19-1975 and 1940, grade 6.3 balance quality grade.

Vibration: For factory assembled units with motors mounted at factory that are 480 Volt 250HP and smaller, the complete assembled unit has been factory tested to insure that “filter-in” vibration velocity at the bearings does not exceed vibration limits as published in AMCA publication number 204-96 as approved by ANSI.

While the fan has been balanced to within the above referenced standards at the factory, it is beyond the manufacturers ability to control or warrant against many causes of excessive vibration levels for a given fan installation or foundation.

It is recommended that the user be highly familiar with the Fan O&M manual supplied with the equipment, which includes some further discussion regarding vibration.

The following check list of probable causes for excessive vibration should provide a useful tool in determining the cause of vibration for fan equipment:

- Fan unit dropped during shipment – bent shaft or bearing damage
- Loose anchor bolts, bearing bolts, or motor bolts
- Foundation structure is not adequate
- Fan is not shimmed and grouted properly
- Material build-up on impeller
- Fan wheel set-screws are loose
- Inlet orifice rubbing fan wheel
- Wear on wheel or bearings
- Duct work binding fan housing, or duct work not properly separated from fan housing with flexible inlet or discharge connections.
- Aerodynamic pulsation caused by system design.
- Fan out of balance – It is common for assembled units to require trim balancing to reduce vibration levels after installation. Qualified balance personnel should be made available at start-up for possible trim balancing of equipment.
- Improper alignment of coupling – couplings have been aligned at the factory, however provisions should be made at start-up to check coupling alignment after shipment and installation.
- Improper alignment of V-belt drive – Sheaves have been aligned at the factory, however provisions should be made at start-up to check alignment after shipment and installation.
- Improper V-belt tension – V-belt tension should be checked at start-up, and after the first few hours of rotation.
- Improper wheel rotation – insure that motor is wired for correct wheel rotation as indicated by rotation arrow on equipment.
- Shaft has been bent or distorted during high temperature shutdown.
- Defective motor
- Resonant frequencies of structural mounting supports
- Defective bearings or moisture in bearings – Request a copy of “Fan bearing failure checklist”

Every effort has been made to provide you with a quality product that will provide years of satisfactory operation. If after review of this checklist, the cause of excessive vibration cannot be found, in most cases, Phelps Fan will provide a qualified fan service technician to be dispatched upon receipt of a written “fault/no fault” purchase order. Start-up service can be purchased at time of order for the equipment.