



cincinnati fan

IMPORTANT

INITIAL UNIT STARTUP PROCEDURE **FOR ALL DIRECT DRIVEN FANS**

Be sure to read **ALL** of this manual and **ALL** of the **I.S.O.M.** (**Installation, Safety, Operation & Maintenance**) manual **BEFORE** attempting to install and operate this equipment.

INITIAL UNIT STARTUP

NOTICE: Failure to complete and document all the following pre-startup and both post-startup checks, listed in sections A (below) and B on page 3, could void all warranties.

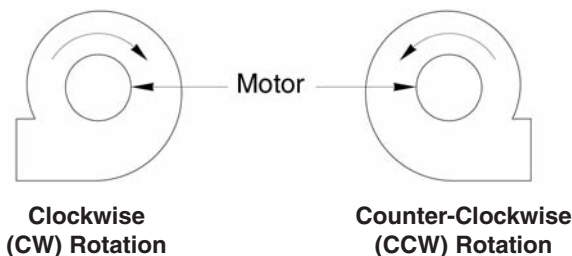
A. Pre-Startup & Post-Startup Checks: (Check blocks as each step is completed. Retain this for your records.)

A1. Pre-Startup Checks Completed By: _____ **DATE:** _____
A2. 8 Hour, Post-Startup Checks Completed By: _____ **DATE:** _____
A3. 3 Day, Post-Startup Checks Completed By: _____ **DATE:** _____

MAKE SURE POWER TO THE MOTOR IS LOCKED OUT BEFORE STARTING PRE-STARTUP OR POST-STARTUP CHECKS.

1. If possible, *CAREFULLY* spin the blower wheel by hand to ensure it rotates freely and no rubbing or clicking noise is heard.
2. Check all blower, foundation and duct work hardware to make sure it is tight.
3. Check all blower wheel set screws to make sure they are tight per **Table 1** on page 5 of the I.S.O.M. manual.
4. If the wheel has a taper-lock bushing, make sure the bolts are tightened per **Table 2** on page 5 of the I.S.O.M. manual.
5. Make certain there is no foreign material in the blower or duct work that can become a projectile.
6. Make sure any inspection doors in the duct work are securely bolted or locked.
7. Ensure all electrical power components are properly sized and matched for your electrical system.
8. Check that all required guards are properly secured.
9. Any dampers should be fully opened and closed to make sure there is no binding or interference.
10. If your blower is mounted on an elevated support structure, make sure the structure is welded at all the joint connections and the structure is properly braced to prevent "side sway".
11. Close any dampers to minimize load on motor. Especially on blowers with high temperature construction. **Never** subject a "cold" blower to a "hot" gas stream. If the blower will be handling "hot gases" greater than 150°F (65°C) it is imperative that the blower be subjected to a gradual rate of temperature increase, not to exceed 15°F/minute (8°C/minute). The same temperature limits are also important when the blower is experiencing a drop in temperature until the temperature drops down to 150°F (65°C). Only, when the entire blower has reached an equilibrium temperature of 150°F (65°C), or less, should the power be turned off.
12. Make sure the power source connections to the blower motor are per the motor manufacturers instructions.
13. Make sure the blower wheel is stationary prior to startup. **Starting a blower with a wheel that is rotating backwards can cause wheel damage.**
14. Apply power to the blower motor momentarily (i.e. "bump start") to check for proper blower wheel rotation. If the blower is rotating in the wrong direction, reconnect the motor leads per the motor manufacturers wiring schematic. **Blower rotation is determined by viewing the blower from the motor side of the blower, NOT from the inlet side.** After reconnecting the leads, repeat this step. **See Fig. 1 below.**

Fig. 1



15. Apply power to the blower motor and let it come up to full speed. **Turn off the power.** Look and listen for any unusual noise or mechanical abnormality while the blower wheel is still spinning. If any are noticed, lock out the power, wait for the blower wheel to come to a complete stop, locate the cause and correct it.
16. Unlock power and start the blower.
17. Measure, record and keep the following motor data for future reference and comparison:
(Single phase motors will only have L1 and L2 leads)

Amperage draw on each motor lead: L1 _____ L2 _____ L3 _____
 (Running amps **SHOULD NOT** exceed the motor nameplate amps for the voltage being operated on)

Voltage coming to motor leads: L1 _____ L2 _____ L3 _____
 (Should be about the same input voltage on all leads)

B. Vibration:

The blower was balanced at the factory to comply with ANSI/AMCA Standard 204-05, Category BV-2. However, rough handling in shipment and/or erection, weak and/or non-rigid foundations, and misalignment may cause a vibration problem after installation. After installation, the vibration levels should be checked by personnel experienced with vibration analysis and vibration analysis equipment.

NOTE:

The blower **SHOULD NOT** be operated if the vibration velocity of the fan exceeds **0.50 inches per second, filter out**, if the blower is rigidly mounted. If the blower is mounted on isolators or on an isolator base, it **SHOULD NOT** be operated if the vibration velocity of the blower exceeds **0.75 inches per second, filter out**.

Vibration readings for direct driven blowers should be taken on the motor at the top, sides and end as per **Fig. 2** below. After you have taken your vibration readings, write them down in the spaces below and keep for future comparison.

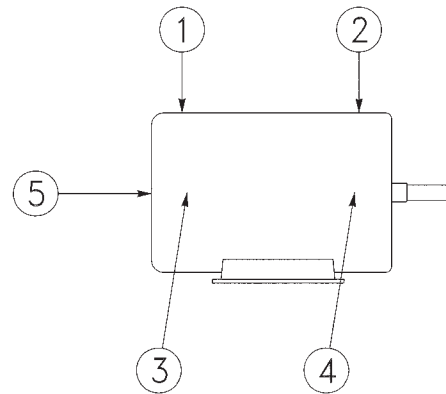
⚠ DANGER

If the blower is going to be conveying material, it is the users responsibility to periodically turn the blower off and lock out the power. The blower wheel should then be checked for material build-up and/or erosion. If material has built up on any parts of the wheel, it **MUST** be removed and cleaned before it is put back into service. If any parts of the wheel have been eroded, the wheel **MUST** be replaced. Failure to perform this inspection can cause excessive vibration that will damage the blower and/or motor bearings. When vibration becomes excessive, it will lead to complete blower failure that could cause property damage, severe personal injury and death. The user must determine the frequency of this inspection based on the actual circumstances of their operation, **BUT** checking the vibration readings should **NEVER** exceed a 12 month period. For the AMCA/ANSI standard for vibration limits, see Fig. 3 on page 4.

Fig. 2

VIBRATION METER PROBE POSITIONS				
For Arrangement 4 Blowers				
1	2	3	4	5

A					
B					
C					



A Pre-Startup Readings taken by: _____ Date: _____

B 8 Hour Post-Startup Readings taken by: _____ Date: _____

C 3 Day Post-Startup Readings taken by: _____ Date: _____

Fig. 3 Vibration Severity Chart

