

SERVICE CALL



Spot Cooling Popularity -

Many companies operate with small designated rooms with critical loads such as computer rooms, IT closets, UPS systems, electrical closets, special vendor equipment. Small split systems are an economical solution as the primary or secondary cooling source. However they are often forgotten as they are tucked away. Be sure to maintain and alarm these systems and room temperature as overheating critical loads can be a show stopper.



MSC is now ISnet A Rated -

Safety is a concern for everyone. Having a quality safety program and plan is essential. More importantly is training, tool box talks and fresh reminders on safety awareness. MSC has received an ISnet A rating which lets our customers and future customers know that safety is our first priority.

All PM Programs are NOT Created Equal

HVAC preventive maintenance is a subject that has been covered in past issues of MSC Tech, but the importance of a good, comprehensive PM program is something that we cannot stress enough. There are numerous benefits: maximal equipment life span, reduced emergency calls, minimized down time, significant energy savings, and a comfortable, healthy environment for building occupants.

Perhaps you already know that a quality PM program is essential, but take note: **“quality” is the operative word.** Comparing a low-budget annual belt-and-filter change to a comprehensive PM program is akin to comparing the proverbial apples to oranges, so you should expect to pay a bit more. PM is not the place to cut corners and save money. Poorly maintained systems invariably cost far more in the long run – well into the tens of thousands – not to mention the loss of income that comes with increased downtime. Always opt for a reputable contractor whose PM program includes all manufacturer-recommended maintenance tasks as well as a system operation analysis to identify potential issues and improve performance. Many contractors represent a lower-cost PM program as a comparable product, but building operators are consistently surprised by their obvious inadequacies when shown a side-by-side comparison with a quality plan. Decision makers who choose to go with the cheap plan to “save money” should be prepared to be called on the carpet when the final bills and downtime are added up.

Check and double check your contractor’s credentials, and *always make sure they actually provide the maintenance services you pay for.* Unfortunately, it is not uncommon for MSC to be called in to address issues where a PM program is supposedly in place, only to find evidence to the contrary. At best, the maintenance is insufficient or improperly performed, or the wrong materials are used. In the worst cases, what we find is downright shocking. On one recent call, we discovered that our client had fallen victim to a particularly unscrupulous contractor with whom they had an ongoing PM contract. Though the contractor regularly showed up – and was paid – on schedule, we found the bolts to the unit access door rusted shut; it obviously had never even been opened. Such cases always require considerable effort and expense to correct the problems caused by these contractors’ so-called PM programs.

MSC is a true HVAC and controls service company specializing in maintenance, diagnostics, and repair. To find out more about our comprehensive Preventive Maintenance Program please visit our website at www.mscnj.com or call MSC today.

Common Causes of Centrifugal Fan Vibration

Vibration in a centrifugal fan can cause a host of problems that, if left unchecked, can lead to issues ranging from periodic downtime to catastrophic failure. Here are some of the more common causes of centrifugal fan vibration:

Rotor imbalance is caused by a number of conditions. Imbalance can occur when particulates cause rotor wear or buildup on the fan wheel, and high air stream temperatures can cause uneven growth of a rotor. Periodic cleaning and field balancing will minimize vibration due to these conditions. Also, manufacturing issues can occasionally cause an uneven distribution of mass in the fan rotor.

Loose mechanical connections between bearing caps, bearing pedestals or foundations can lead to excessive vibrations levels or exacerbate an existing imbalance problem. Looseness between the rotor shaft and fan shaft can also cause vibration.

Excessive vibration from a cracked shaft or rotor can lead to catastrophic failure. Cracks can be detected through visual inspection or vibration trending analysis.

Misalignment between a drive motor shaft and a fan shaft is a common source of vibration. This can be caused by a bent shaft, improperly seated or worn bearings, or faulty installation of new equipment. Improper lubrication (using the wrong type, or lack thereof) can overheat bearings and cause warping in the shaft.

Resonance is the tendency for a vibration to occur at a particular frequency. Two types of resonance that can affect a centrifugal fan are critical speed and structural resonance. Most fans are designed to operate below critical speed, but if a fan is operated above critical speed, the vibrations that occur while passing through the resonance band can lead to severe damage to bearings, seals, etc. Similarly, operating at the structural resonance point should also be avoided. Structural resonance is somewhat difficult to predict, as it varies from unit to unit, but can be easily identified through vibration analysis.

Other conditions that can cause centrifugal fan vibration include a skewed fan wheel, dynamic forces produced by motors, gearboxes and belts, and loose rotors due to thermal expansion differential between the fan wheel hub and the shaft.

MSC is an expert in fans and motors. Please call us if you have questions regarding centrifugal fan maintenance, vibration, or vibration analysis.

Problems & Plans

A new customer was referred to MSC with reoccurring HVAC problems that they were having in a large facility.

The problems were freezestat trips on many of the air handlers. Any number of items can cause freezestat trips stratification, preheat temperature, preheat control valve positioning, preheat system functionality, preheat system flow, accuracy of instruments and sequence of operation. Like any problem you need to take vital signs and begin to drill down from their. In most cases its never one issue causing the problem but a combination.

You can't fix your problems until you uncover the truth. Then make a remediation plan that works.

