

## SERVICE CALL



### Cooling Tower Maintenance -

Cooling towers must be regularly maintained to ensure clean, efficient operation. It is very important to apply water treatment chemicals in accurate amounts at appropriate intervals, based on your system's specific retention time. Don't wait until you see evidence of microbiological growth! If biocide treatment is not automated on your system, check with MSC to see if it can be retrofitted.



### Maximize Chiller Efficiency -

Maximize chiller efficiency by following a few best-practices. Raise chilled-water temperature and establish a reset schedule; reduce condenser water temperature to lowest recommended by manufacturer; purge air from refrigerant and repair leaks; take advantage of free cooling; make sure hot-gas bypass and unloader operate properly; maintain appropriate refrigerant levels; keep a daily log and compare readings to pinpoint trouble spots and identify energy-saving opportunities.

## UNDERSTANDING THE HCFC PHASE-OUT

In January 2012, the EPA issued a proposal calling for a significant reduction in the amount of HCFCs that will be allowed to come to market from amounts previously announced in January 2010. This has led to widespread confusion, fear of product shortages, and a steep rise in prices. Fortunately, MSC customers who are still using HCFCs will experience minimal impact.

Under the 2010 phase-out rules, the industry anticipated that 90 million pounds of virgin R-22 would be allowed to enter the market in 2012. The EPA is now proposing that the 2012 allowance be reduced to 55 to 80 million pounds – a decrease of 11% to 45%. Until the rule is finalized, which will not occur until May at the earliest, producers and importers cannot exceed a total of 55 million pounds combined. As a result, producers have placed purchase restrictions on R-22 and prices have more than doubled.

Though the steep price increase unfortunately necessitates that a portion of the cost be passed along to our HCFC users, further effects on MSC customers will be minimal. When the EPA phase-out timeline was announced, MSC anticipated that unforeseen disruptions in the supply chain could possibly occur. Thorough preparations have been made to ensure that our supply of R-22 is more than sufficient, and that customers are adequately protected from shortages during the phase-out process.

MSC is closely monitoring the situation as further information from the EPA becomes available. As always, customers have our assurance that, as this fluid situation progresses, we will take immediate, proactive steps when necessary to ensure that the HCFC phase-out will continue to proceed as painlessly as possible.



## VFDs IN THE FIELD

**Most HVAC supply fans, return fans, exhaust fans and pumps are controlled by variable frequency drives, or VFDs.** One way to keep VFDs running properly is by controlling them with a combination of hard-wired I/O and network communication.

A VFD serial communication port interfaces with different communication protocols such as Modbus, Ethernet, and other networks. However, networks can sometimes be unreliable, and nuisance loss of communication can cause drive shutdown. Hard-wired I/O allows reliable start, stop and speed control, while network communication reads all other drive parameters such as voltage, temperature, amperage, run time, etc.

VFDs should be programmed carefully. A number of options need to be considered, such as ramp time from zero to setpoint (usually 60-90 seconds). Also consider other important program options such as dynamic braking to slow and stop the motor, auto restart in case of power failure, and "catch-on-the-fly" features for brownout or momentary power loss. Ideally, all of your drives should have the same program setup. If not, it is recommended that they be reviewed and programmed with what serves your preferred functionality.

When starting a drive, check rotation in the drive and bypass modes (if your drive has full bypass) as differing rotations can cause problems. Also make sure the drive and motor can work together, that amperage is correct, and avoid blowing fuses or tripping the drive on inrush current.

When making changes to VFDs in the field, consider features such as a permissive run relay that will prevent a drive from starting a fan until all dampers are open. This can prevent damper or ductwork collapse. If you have HOA (hand-off-auto control), you might want to be alerted when your drive has switched from auto mode to hand mode. This can create havoc on process systems and you can spend a lot of time trying to figure out what went wrong. This is especially true on building or process space pressurization.

Combining hard-wired I/O and network communication and paying close attention to drive settings are key to preventing VFD problems and physical damage. **A knowledgeable service contractor like MSC can help make sure your VFDs are correctly set up and running properly.**

## Spring Time PM

The past winter was certainly a mild one, but that doesn't mean that you should forego your spring preventive maintenance program. Prepare for the upcoming cooling season by cleaning your air handlers, coils, filters and ductwork, and verify that air flow and cooling is running properly. This is the swing season, when we run cooling during the day and heat at night, so make sure your economizer cycles are working correctly. Other things you can do to make sure your systems are performing optimally:

- \*\*Check occupied/unoccupied modes
- \*\*Check sequence of operation
- \*\*Make repairs that have been lingering
- \*\*Check for duct leakage
- \*\*Air and water balancing
- \*\*Retro-commissioning

