



# Air Conditioning Start-up Checklist

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering and technology, all working together to drive innovation in a modern world.

This convenient Air Conditioning Checklist has been designed to help maximize reliability, economy, and fuel conservation in the operation of this equipment.

Information from our files indicates that a great many failures take place at start-up or early in the cooling season because of inoperative controls or safety devices. Most of these accidents could have been prevented if a little more attention had been paid to readying the equipment for service. We therefore recommend that the following measures be taken to ensure a trouble-free cooling season and reduce the likelihood of equipment malfunction.

The tips offered here are intended to complement and not replace the recommendation of the equipment manufacturer.

## Compressors

- Energize the crankcase heaters for at least eight hours before start-up. Crankcase heaters should be left energized for the rest of the season so that whenever the compressor is idle, the heater will prevent refrigerant "migration" to the crankcase.
- Test the lubricating oil for color and acidity, and check crankcase oil level.

## Motors

- Check the air passages of open motors for cleanliness and obstructions.
- Check the condition of and lubricate bearings.
- Take insulation resistance readings. If the readings indicate less than one megohm resistance, don't start the motor. Check for the cause of the low resistance.

## Motor controls

- Inspect starter contacts for deterioration from short cycling, arcing, or corrosion.
- Check terminal connections for tightness.
- Examine the overload protection for proper size.
- Check mechanical linkages for binding and excessive looseness.
- Check timing devices for correct operating sequence.
- Operating and safety controls
- Determine that the controls are properly calibrated and in working order particularly thermostatic controls, oil pressure safety switches and flow switches.

## Refrigerant circuits

- Be sure the circuit is equipped with a moisture indicator and if moisture is indicated, install new liquid line filter/drier cores. Determine and correct the source of the moisture.
- Check the expansion valve for proper operation and superheat settings over the full range of operation.

## Condensers and evaporators

- Ensure that proper cleaning of heat transfer surfaces for the type of unit in use has been completed prior to operation.
- Cooling towers: Check the baffles for tightness and soundness. Clean the baffles, sump and the spray nozzles. Check the make-up water valve for proper operation.

## Pumps

- Check the bearings, packings, shaft couplings, and seals. Lubricate bearings.

## Fans

- Check for broken, cracked, bent or loose blades. Check hubs, fan shaft and bearings.
- Check the belt condition and belt tension.
- Replace air filters.

## Piping

- Check all piping supports for signs of distress.
- Check for external damage and excessive vibration.