Dry ice is a relatively new alternative to grit or solvent cleaning of electrical equipment. It is often not feasible to have a motor taken out of service and sent to a shop for cleaning, either due to shear size or difficulty in dismantling the machine.

Transportation to and from the service center can also add considerable downtime that can be very costly. Dry ice is a practical alternative. Dry ice cleaning can be done on site with minimal downtime. It is possible to clean the external parts of a motor with dry ice without any interruption of service.

Process Makes Cleanup Easier
The process of dry ice cleaning is relatively simple. Dry ice, or solid carbon dioxide, is propelled onto the motor winding at a high velocity. The pellets are solid and hard enough to loosen dirt. One of the disadvantages to cleaning with solvents, sand, corn cob grit, or glass beads is the leftover material, which can be difficult to clean up and often hazardous. Upon impact, the dry ice melts and changes from the solid form to carbon dioxide gas, leaving only the dirt removed from the motor to clean up.

There are a number of advantages to dry ice cleaning. Dry ice cleaning is not as abrasive as traditional methods since the pellets change to gas as soon as they hit the dirt, before coming into contact with the winding. In addition, the process almost eliminates dirt and grit from getting further imbedded into the winding. Dry ice cleaning is also faster and more efficient than cleaning by hand.

Reduce Or Eliminate Solvents
Hazardous waste disposal will always be an issue in the motor repair business, but the use of dry ice can reduce or eliminate solvent use on site. As environmental regulations become more stringent, many users look for new ways to reduce hazardous waste.

Typically, insulation resistance and polarization index tests are performed on the motor winding both before and after cleaning. In many situations, there is a dramatic improvement seen in the insulation after the winding has been cleaned with dry ice. You could at least expect the improvement to be comparable to the standard steam cleaning and bake drying process.

Drawbacks To Consider
There are definitely drawbacks to dry ice cleaning. One, of course, is the cost. It is fairly expensive to get the equipment and training necessary for the process.

Equipment includes a pressure source (liquid nitrogen), a machine to grind the dry ice into pellets, a way to transport the materials, and the dry ice itself. Training and certification are also expenses, but are not difficult to obtain. In addition, the cleaning process is very noisy, requiring hearing protection to all present during the process.

Steam Cleaning Still Popular
Steam cleaning and grit blasting are the most commonly used ways to clean motors in repair facilities today. However, as more and more of your customers look for ways to reduce downtime and waste, and as new technologies emerge, dry ice cleaning (or some other new method) could become a preferred method of cleaning electrical equipment.