

**Information Sheet # 10**

Your Reliable Guide for Power Solutions

**UL REBUILT EQUIPMENT CERTIFICATION  
Programs and Green Construction Initiatives**

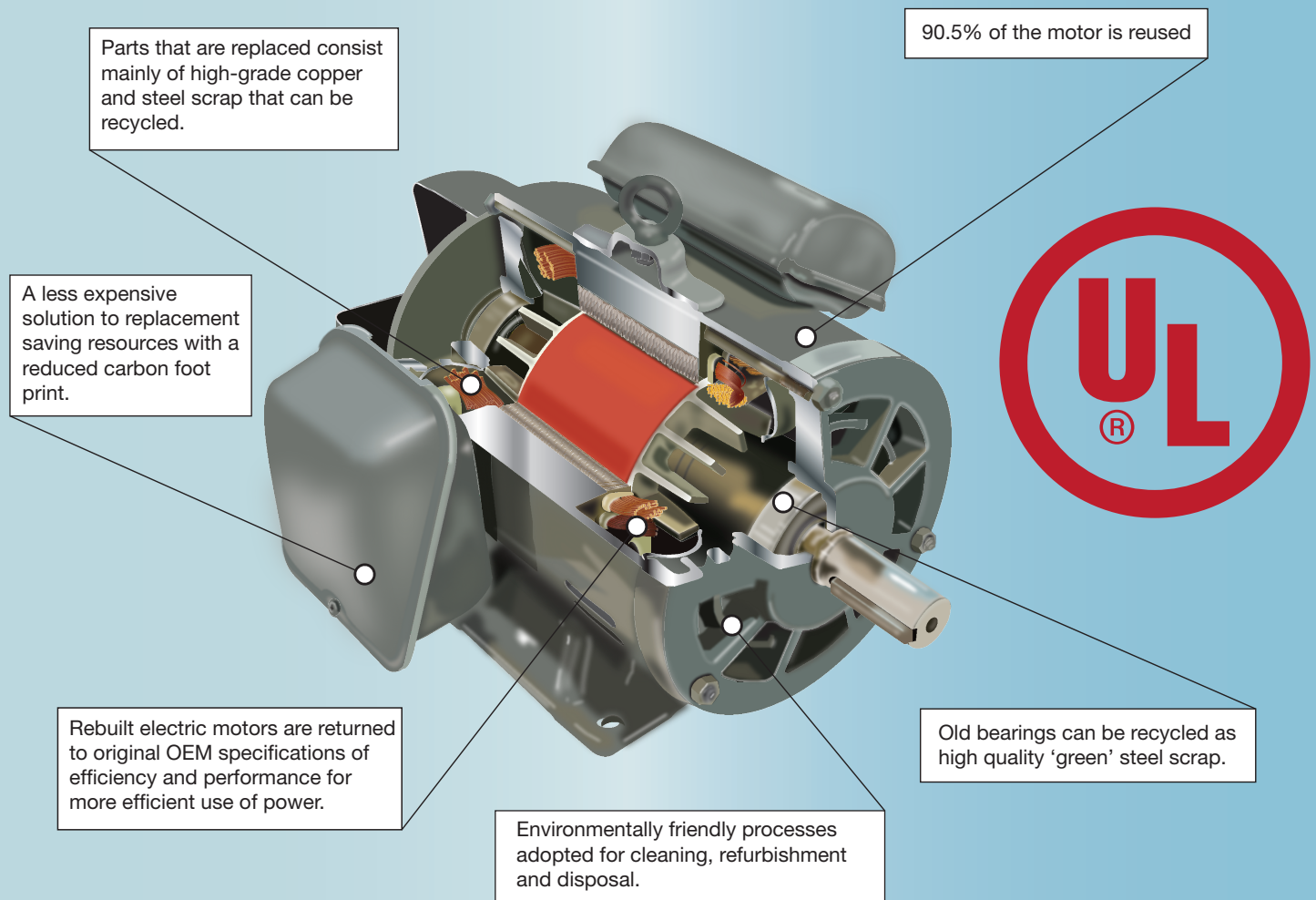
**1.0 Introduction:**

All businesses are very conscious of how their activities and products impact the environment. Leading businesses engaged in electrical equipment rebuild, repair and maintenance are at the forefront of adopting and supporting green construction initiatives. Rebuilding can be a less expensive and a more environmental solution to replacement, see *figure 1*. Underwriters Laboratories (UL) in recognition of the increased concerns about the environment and current economic conditions have developed programs to determine the suitability of equipment rebuilt under a more structured equipment rebuilding program.

*This information sheet discusses how a rebuilt product uses best practices to ensure rebuilt equipment certification programs address both green construction and safety concerns.*

Figure 1

**Rebuilt to UL 674 is a Greener Solution than Replacement**



To fulfill our commitment to be the leading supplier, the Layco Electric Innovations team ensures they are always up-to-date with the current industry standards as well as industry trends. As a service, our **Information Sheets** are circulated on a regular basis to existing and potential power customers to maintain their awareness of changes and developments in standards, codes and technology within the power and motor control industry.

## 2.0 Rebuilt Equipment Certification Programs:

The UL listing mark on a new piece of equipment was a testimony to the piece being manufactured to recognized safety requirements for the suitable installation and use in accordance with specific model codes. However, as it was not practical to undertake a Field Evaluation to determine if a rebuilt product still complies with UL safety requirements, without making a separate evaluation of each equipment installation, UL has developed programs to ensure rebuilt equipment, such as electrical apparatus, meet UL codes:

### 2.1 Determining UL Acceptance of a Rebuild Program:

In order for a rebuilt product to be considered for certification, UL first needs to establish the feasibility of determining compliance of the product with all the applicable product safety requirements. Concerns that need to be addressed include the potential effects of deterioration due to normal use and aging or damage caused by fire, flood, seismic, wind or electrical faults.

These programs require the equipment rebuilder to comply with the following requirements:

- The original UL Mark must be removed from the equipment being rebuilt, or permanently defaced.
- The equipment can only be modified using materials and procedures that are suitable for the application.
- Production line testing may be conducted to verify that the rebuilt equipment complies with specified performance requirements.
- Rebuilt equipment complying with all program requirements are plainly and permanently marked with the name of the rebuilder and a UL Mark containing the term "Rebuilt," or other terminology suitable for the product category.
- The rebuilt equipment shall be subjected to the same requirements as newly constructed equipment.

### 2.2 Product Categories UL Has Chosen Not to Establish Rebuilding Programs:

UL has chosen not to establish equipment rebuilding programs due to safety considerations that cannot be adequately addressed. For example, UL does not have a certification program for rebuilding or refurbishing molded case circuit breakers.

### 2.3 Examples of Established UL Rebuilding Programs:

Over the years UL has created certification programs for rebuilt cooking appliances, refrigerators, vending machines, uninterruptible power supplies, motor controllers, motors for use in hazardous locations, office furnishings and electric signs, to name a few. The guide information for each product category with a rebuilt certification program references the existence of such a program and identifies the applicable UL Mark for rebuilt products.

## 3.0 Evaluation of Rebuilt Equipment:

In order to receive UL certification for rebuilding equipment the facility has to pass an initial investigation to demonstrate compliance with all program requirements. These programs typically verify the following criteria:

- Determine that the materials to be used are acceptable.
- Establish that a minimum amount of measurement and testing equipment is available to perform the required inspections.
- Review the machining and manufacturing equipment to verify that they are suitable for the type of rebuilding work that may be necessary.
- Explain the requirements of the program, including the methods and procedures to be employed during the rebuilding process.

Once equipment rebuilders demonstrate compliance with all program requirements, they obtain certification under the specific rebuilt equipment program. Equipment rebuilding facilities are also covered under UL's factory surveillance program to verify ongoing compliance with program requirements.

## 4.0 Rebuilt Hazardous Location Motors:

When rebuilding equipment under the program for rebuilding electric motors and generators there is a provision for motors and generators for hazardous locations. The motor to be rebuilt is required to have been UL Listed for use in hazardous locations when new. Under this program, a motor can only be rebuilt for any one, or for any combination of the hazardous location classes and groups for which it was originally UL Listed. Certain types of motors are not eligible to be rebuilt unless the original equipment manufacturer's information is available.

## 5.0 Rebuilt Testing Requirements:

All motors and auxiliary electrical circuits are required to be subjected to a dielectric voltage withstand test, using test equipment that is calibrated at least annually. The program requires the rebuilding facility to inspect motors for damage or changes that may affect their operation in a hazardous location. All damage must be repaired, and changes that could adversely affect the motor performance with regard to hazardous locations are not permitted.

## 6.0 Green Technology Rebuilding Requirements:

The UL rebuilding program ensures approved rebuilders are adopting the latest electrical apparatus environmentally friendly methods for cleaning and rewinding equipment, including the correct disposal of any material used in the process. For more information, consult the guide information for Motors and Generators, Rebuilt for Use in Hazardous Locations (PTKQ) or [www.ul.com/hazloc/rebuilt.htm](http://www.ul.com/hazloc/rebuilt.htm).



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