



# SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J2075

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## Alternator Remanufacturing/Rebuilding Procedures Includes Passenger Car, Heavy Duty, Industrial, Agricultural, and Marine

### 1. *Scope*

- 1.1 These remanufacturing procedures are recommended minimum guidelines (with the understanding that being more critical is acceptable) for use by remanufacturers/rebuilders of alternators to promote consistent reliability, durability, and safety of remanufactured alternators. Installation of remanufactured or rebuilt products is often an economical way to repair an application even though the products may not be identical to original equipment parts. Before processing any part, a remanufacturer/rebuilder should determine if the original design and present condition of the core are suitable for remanufacturing/rebuilding so as to provide durable operation of the part as well as acceptable performance when installed on the application. The remanufacturer/rebuilder should also consider the safety aspects of the product and any recommendations of the original manufacturers related to remanufacturing or rebuilding this product.
- 1.2 While these procedures are meant to be universal in application, various product types have unique features of dimension and design which may require special remanufacturing/rebuilding processes and tests that are either not covered by or are exceptions to these procedures.
- 1.3 **Rationale**—The Service Development Technical Committee requests that this document be re-classified as “Noncurrent.” The reason for the change of designation is that we no longer have any members with expertise to maintain the document.

### 2. *References*

- 2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest version of SAE publications shall apply.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J56—Road Vehicles—Alternators with Regulators—Test Methods and General Requirements  
SAE M-105—SAE Glossary of Automotive Terms, Edition 2, June 1992

2.1.2 FEDERAL TRADE COMMISSION PUBLICATION—Available from the Superintendent of Documents, U. S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320.

“Federal Trade Commission Guides for the Rebuilt, Reconditioned and Other Used Automotive Parts Industry” 16CFR20- 2/27/79 Para 20.0, 20.1, 20.2, 20.3

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3. **Definitions**—Drawings shown in this Recommended Practice are intended for illustration only and not meant to depict any specific unit manufacturer.
- 3.1 **Heavy-Duty (Class 8) Trucks**—A truck or tractor rated by the manufacturer and certified to the US federal government to be for operation at a gross vehicle weight or a gross combination weight of 14 969 kg (33 001 lbs) and over
- 3.2 **Medium-Duty (Class 6 and 7) Trucks**—A truck or tractor rated by the manufacturer and certified to the US federal government to be for operation at a gross vehicle weight or a gross combination weight of 8846 kg (19 501 lbs) to 14969 kg (33 000 lbs).
- 3.3 **Primary Air Gap**—In a magnetic circuit, primary air gap is defined as an air gap that is designed into the circuit, e.g.,- pole shoe to armature air gap.
- 3.4 **Ground Test**—This is a test to determine insulation integrity.
- 3.5 **Proper Soldering Techniques**—Make all soldered/welded connections using a non-corrosive method. Using any corrosive flux such as acid-core solder can cause deterioration of electrical connections and eventual failure of the alternator. A sound mechanical connection must be made prior to soldering.
- 3.6 **DE: Drive End**—This refers to the end of the alternator from which the rotor is driven. Typically the pulley or gear is at this end of the alternator.
- 3.7 **RE: Rectifier End**—This is typically the end of the alternator that the rectifier bridge resides at. Usually it is the opposite of the Drive End.
- 3.8 **SRE: Slip Ring End**—Usually the same as the RE.
- 3.9 **Turns**—Refers to the number of wraps of wire in a loop, around a spool.
- 3.10 **Slot Fill**—Refers to the volume of wire placed within any given slot of the stator.
- 3.11 **Delta Wound**—A manner of winding a stator such that either end of each of three (typical) stator legs is connected together. Each pair of ends are usually connected to the rectifier bridge. See Figure 1.

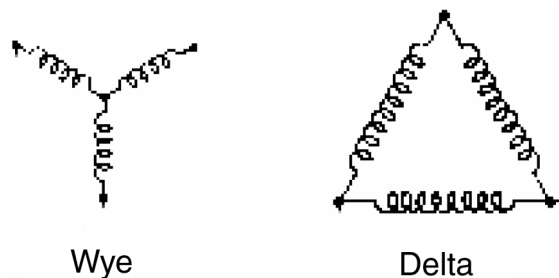


FIGURE 1—TYPICAL STATORS

- 3.12 **Wye Wound**—A manner of winding a stator such that one end of each of three (typical) stator legs is connected together. The remaining ends are typically connected to the rectifier bridge. The three ends that are connected together may or may not be connected to the rectifier bridge. See Figure 1.

**3.13 Serpentine Pulley**—A multi grooved pulley design that uses a flat belt designed with many small vees on the drive/driven surface. See Figure 2.



FIGURE 2—TYPICAL SERPENTINE PULLEY

**3.14 Grooved Pulley**—A typical Vee groove design. May have multiple grooves. See Figure 3.

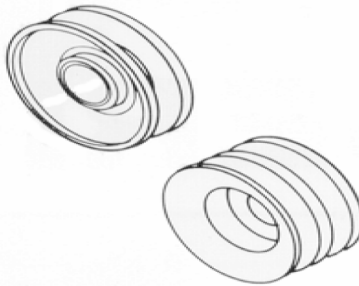


FIGURE 3—TYPICAL GROOVED PULLEY

**3.15 Rebuilt/Remanufactured**—See SAE Glossary for definitions.

**3.16 Lateral Runout**—Total Indication Movement (TIM) when measuring the movement of one face of the pulley groove in the axial direction of the pulley when the pulley is rotated one revolution.

#### **4. Remanufacturing Procedure**

**4.1** This SAE Recommended Practice provides a procedure for remanufacturing/rebuilding alternators, similar to the alternator shown in Figure 4.

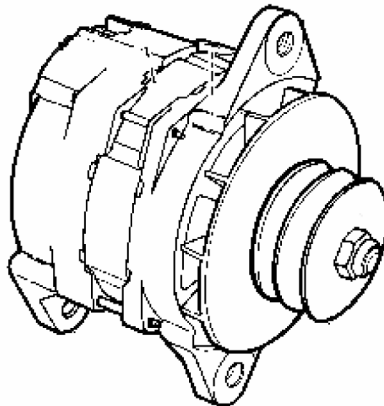


FIGURE 4—ALTERNATOR ASSEMBLY