

Test Method to Obtain Lug-Up Torque Data for Heavy-Duty Truck and Bus Engines

- 1. Scope**—This SAE Recommended Practice applies to all forms of diesel and natural gas engines fueled by the combination of diesel fuel and natural gas.
 - 1.1 Purpose**—This document provides a method to determine the torque generating capability of an engine as it accelerates away from idle at a specified acceleration rate. The data is typically used to aid in the proper matching of the engine to the available torque converters of a torque converter equipped transmission. The goal is to achieve acceptable off-idle transient engine acceleration against the load of a torque converter equipped vehicle as it moves away from a stop.
- 2. References**
 - 2.1 Applicable Publication**—The following publication forms a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.
 - 2.1.1 SAE PUBLICATION**—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1995—Engine Power Test Code—Spark Ignition and Compression Ignition—Gross Power Rating
- 3. Procedure**—A dynamometer with automatic engine acceleration rate control is required. The test starts with the engine idling against a typical curb idle torque load of a stopped vehicle equipped with a torque converter transmission in gear. The throttle is then snapped open to wide open throttle. At the point that the throttle is snapped open, the dynamometer is to automatically control the rate of engine acceleration to 175 rpm/s. SAE J1995 gross torque versus engine rpm is then to be recorded until the engine approaches its high idle or no load rpm. It may be necessary to obtain the torque data via a driveline mounted torque meter between the engine and dynamometer in order to account for the torque required just to accelerate the inertia of the dynamometer.
- 4. Data Reporting**—The acceleration gross torque versus engine rpm data per this document is to be documented in writing for use by the industry.

PREPARED BY THE SAE TRUCK AND BUS ENGINE PERFORMANCE
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SAE TRUCK AND BUS POWERTRAIN COMMITTEE

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Rationale—Not applicable.

Relationship of SAE Standard to ISO Standard—Not applicable.

Application—This SAE Recommended Practice applies to all forms of diesel and natural gas engines fueled by the combination of diesel fuel and natural gas.

Reference Section

SAE J1995—Engine Power Test Code—Spark Ignition and Compression Ignition—Gross Power Rating

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