



Heavy Duty Transmissions and Differentials: What lubricants should I be using?

There has been much confusion in recent years regarding the correct type of lubricant to be used in recent year truck transmissions and differentials. Some OEM's recommend motor oil, some EP type gear oil, some Caterpillar TO-4 type fluids, some synthetic, some petroleum-based. Truck owners face two primary questions in choosing a transmission or differential lubricant. (1) What is the correct type of lubricant, i.e. EP gear lube, motor oil, straight mineral gear lubricant, etc. and (2) what viscosity grade of that lubricant is appropriate for the application. Regarding the first question, some clarifications of the terms used in manuals and service bulletins would assist truck owners in choosing the correct lubricant recommended by the OEM:

API GL-1 - This is a straight mineral type gear oil containing rust and oxidation inhibitors, but not containing extreme-pressure (EP) additives. These lubricants are generally recommended for use in the transmission, because EP additives can attack copper and brass transmission components.

API GL-5 - This is the API specification describing an "EP" type gear lubricant. GL-5 gear lubricants are almost always recommended for truck differentials. Some OEM's also recommend this type of lubricant for the transmission.

API MT-1 - This is an API Category which contains upgraded performance requirements from the GL-5 type lubricants. MT-1 designates the type of service requirements of non-synchronized manual transmissions in heavy-duty trucks and buses. Not all GL-5 lubricants meet the requirements of API MT-1.

SH/CD, SH/CE, SH/CF - These are API specifications describing high-detergent engine oil such as Gibraltar Super S-3.

The correct viscosity to be used is dependent on several factors such as the make of the transmission, the service type and the ambient temperatures in the geographical area

where the equipment will operate. Generally OEM's provide a list of several different viscosity grades to be used on their particular component depending on the ambient temperatures.



SAE 90 v. SAE 50? Confusion can arise from the fact that The Society of Automotive Engineers (SAE) has two separate viscosity classification systems for gear oil and engine oil. An SAE 50 engine oil is approximately the same viscosity as an SAE 90 gear oil. Therefore, when an OEM manual says to use either SAE 90 GL-1 Gear Oil or SAE 50 Engine Oil, they are not giving you a choice of two different viscosity grades, but rather a choice of two different oil types. The Viscosity Classification Chart on the reverse of this page should help clarify the different viscosity classification systems and their relationship to each other.

David Weber Oil Co. has been a leading manufacturer and supplier of heavy duty automotive and industrial lubricants for over half a century. We maintain our manufacturing facility and corporate offices in Carlstadt, New Jersey.

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