DANA SPICER® Off-Highway Products

Product Service Bulletin

PSB-0279E
September 2016

Re: Recommended Lubricants for Axles and Gear Boxes

Requirements:

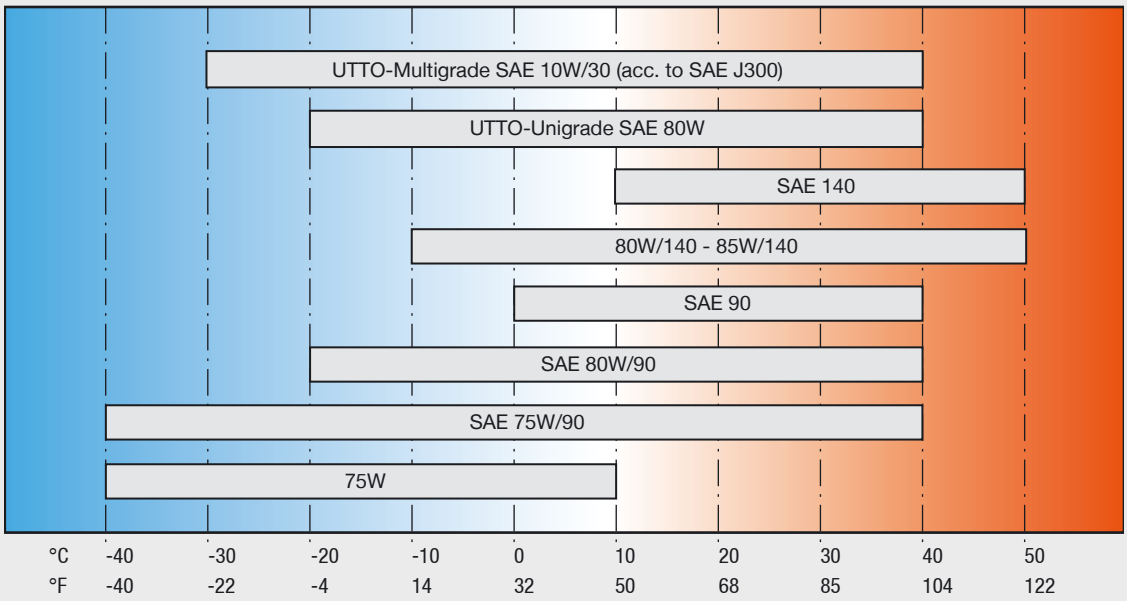
- Extreme pressure gear lubricant is recommended for use in all drive-steer and rigid drive axles and/or gear boxes except where explicitly stated differently by Dana Off-Highway Application Engineering.
- Preferred oil viscosity – Select highest oil viscosity compatible with the prevailing ambient temperature on the Oil Application Chart.
- Fire-resistant fluid – See Vehicle Original Equipment Manufacturer (OEM) recommendations.
- **Initial oil change interval:**
  The first oil change should occur at 100-250 hours or 1 years (whichever occurs first) to clean the axle and/or gear boxes of metal particles occurring during the break-in period.
- **Normal oil change intervals:**
  Oil change intervals for mineral-based lubricants in normal environmental and duty-cycle conditions are 1000 hours in all Off-Highway applications; in case of severe duty, extreme environments, high ambient temperature, pollution, intensive brake usage, change oil more frequently.
- **Extended oil change interval:**
  - Extended oil service life may result when using synthetic fluids. Appropriate change intervals should be determined for each application by measuring oil oxidation and wear metals over time to determine the baseline. Wear metal analysis can provide useful information but an axle and/or gear boxes should not be removed from service based solely on this analysis.
  - Vehicles which are prone to high levels of ingested water in the axle and/or gear boxes, or water as a result of condensation, should not use extended drain intervals.
- **Severe applications*** – 85W/140 or 80W/140 lubricants that meet the requirements of API GL5 or MIL-PRF-2105E.
- Steep grade applications – Grades of 15% or more for extended distances of 0.3 miles [0.5 km] must consult the Dana Off-Highway Application Engineering.
- When installing a new axle and/or gear boxes and/or performing maintenance (i.e. oil change), before operating the machine at full load / speed, warm-up the axle by operating the machine under light work and low speed conditions. This is particularly recommended when operating in low ambient temperatures.
- LS additives may be used to minimize chatter noise in limited-slip differentials or to reduce brake noise in oil-bath brakes. If LS additives are used, it is recommended that these properties are already in the oil as purchased from the oil manufacturer. The Technical Data Sheet for the oil will specify the compatibility with limited-slip differentials and/or wet disc brakes.

NOTE: Introducing LS additives to an oil may **NOT** result in the desired benefits of reducing chatter noise and could compromise the performance of the parking brake. See vehicle Original Equipment Manufacturer (OEM) recommendations for specific cases.
Brake performance must be checked after any axle maintenance. If performance is insufficient or noise is still occurring, flush with washing oil, refill with new oil, and check again.

- It is important to consult the applicable axle Service Manual as it may have unique lubrication requirements not outlined in this bulletin.
- Any deviation from the above requirements must have written approval from the Dana Off-Highway Application Engineering.

Oil Viscosity Application Chart

RECOMMENDED SAE J306 VISCOSITY GRADE BASED ON PREVAILING AMBIENT TEMPERATURE



*Axles with Hypoid Gears must use API GL5 and no Universal Tractor Transmission Oil [UTTO].
Axles and/or gear boxes with Non-Hypoid Gears can use API GL4 or API GL5.
Axles with USA serial numbers must use gear oil (no UTTO).
Axles with wet disc brakes or limited-slip (LS) differentials must have “LS” additives (If UTTO is being used, the “LS” additive is not necessary).

NOTE: This chart references temperature ranges for oils, not the axle and/or gear boxes. For axle specific temperature ranges, please refer to your Dana Off-Highway contact.

NOTE: This bulletin replaces all previously published axle lubricant guidelines.