



## Re: Recommended Lubricants for Axles

### Requirements:

- Axle lubricant must be qualified by one of the following specifications in order of preference\*:
  - API GL-5/MT-1
  - SAE J2360
- Extreme pressure gear lubricant is recommended for use in all drive-steer and rigid drive axles 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 2 years (whichever occurs first) to clean the axle 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 and 10,000 miles in on-highway applications. Severe duty usage, sustained operating temperature, or very dusty atmospheric conditions will result in accelerated deterioration or contamination.
- 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 should not be removed from service based solely on this analysis.
  - Vehicles which are prone to high levels of ingested water in the axle, or water as a result of condensation, should not use extended drain intervals.
- Severe applications\* – 85W140 or 80W140 lubricants that meet the requirements of API GL-5 or MIL-PRF-2105E. Before using a synthetic lubricant in severe applications, the customer must check with the lubricant supplier on the issue of high-pressure lubricant applications.
- 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.
- Vehicle warm-up procedure should be utilized when machine is at temperatures lower than oil operating range.

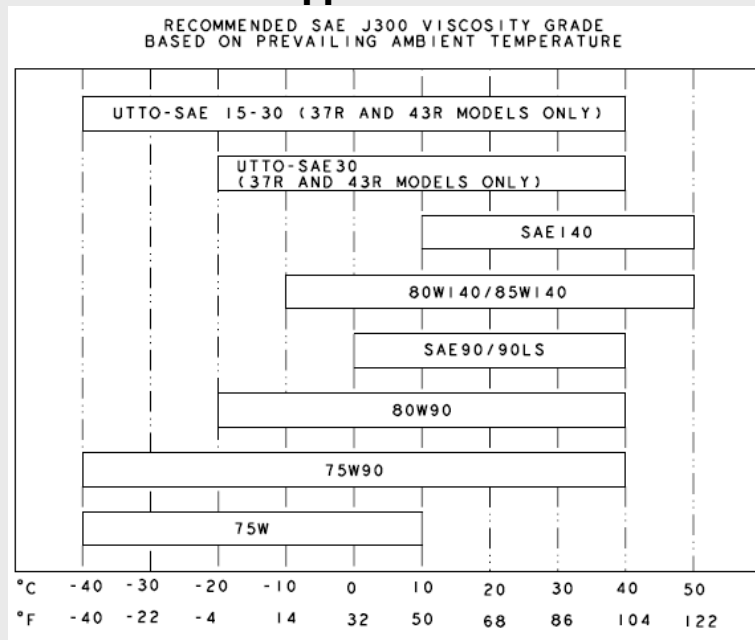
- Friction modifiers for Posi-torq (limited slip) differentials can be used to minimize operational noise or in liquid-cooled brakes to reduce brake noise. 2% to 5% by weight is recommended.



**DANGER:** After the additives are placed into the oil, verify service brake and parking brake performance after a few hours of work. Also verify brake noise has been eliminated. If brake 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 Application Chart



\*Axles with Hypoid Gears must use API GL5 and no Universal Tractor Transmission Oil [UTTO]  
 Axles 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).

For Additional Information Contact:

Dana Off-Highway – North America	Dana Off-Highway – Italy	Dana Off-Highway – Belgium
419-887-6445	+39-0464-580120	+32-50-402441
	+39-0464-580202	+44-1788-545391

Dana Off-Highway – China	Dana Off-Highway – Korea
+86-21-33325000	+82-2-701-7431

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