# **SECTION 24: LUBRICATION**

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### 1. LUBRICATION

The efficiency and life expectancy of mechanical equipment is largely dependent on proper lubrication and servicing. All mechanical components rely on a lubricating film between moving parts to reduce friction, prevent wear and oxidation. Proper lubrication also helps cool the parts and keep dirt particles away from mating surfaces. Efficient lubrication depends upon using the right type of lubricant, at specified intervals and by filling to correct capacities. Past experience shows that many service problems can be traced to an improper lubricant or to incorrect lubrication procedures.

A comprehensive maintenance and lubrication program is important to ensure the long service life this vehicle was designed for and to avoid costly repairs and associated downtime caused by premature part failure.

A lubrication schedule is included in this section to give the location of key service points on the vehicle as well as the lubricant specifications for each component to be serviced. Specific instructions on how to check and service different components are covered in their respective sections in this maintenance manual.

The recommended lubrication intervals are based on normal operating conditions and mileage accumulation.

Shorten the intervals if your vehicle operates in more severe conditions. Severe conditions include heavy towing, high vehicle weight or operation in mountainous areas. Some parts and equipment referred to in this section may not be installed on your vehicle. Check your vehicle's "Coach Final Record" for equipment list.

Dispose of used lubricants and filters in an environmentally safe manner, according to federal and/or local recommendations.

### 2. LUBRICATION AND SERVICE SCHEDULE

Following this service schedule is the most economical and easiest way to ensure your vehicle performs at its best, safest and longest. Also, unscheduled maintenance will be minimized since inspection should expose potential problems before they become major ones.

#### 2.1 FLEXIBLE HOSE MAINTENANCE

The performance of engine and equipment are greatly related to the ability of flexible hoses to supply lubricating oil, air, coolant, and fuel oil.

Maintenance of hoses is an important step to ensure efficient, economical, and safe operation of the engine and related equipment.

#### 2.1.1 Hose Inspection

Check hoses daily as part of the pre-starting inspection. Examine hose for leaks, and check all fittings, clamps, and ties carefully. Ensure that hoses are not resting on or touching shafts, couplings, heated surfaces including exhaust manifolds, any sharp edges, or other obviously damaging areas. Since all machinery vibrates and moves to a certain extent, clamps and ties can fatigue with time. To ensure proper support, inspect fasteners frequently and tighten or replace them as necessary.

#### 2.1.2 Leaks

Investigate leaks immediately to determine if fittings have loosened or cracked, and also if hoses have ruptured or worn through. Take corrective action immediately. Leaks are not only potentially detrimental to machine operation, but can also result in added expenses caused by the need to replace lost fluids.



### **WARNING**

Personal injury and/or property damage may result from fire due to the leakage of flammable fluids, such as fuel or lube oil.

#### 2.1.3 Service life

The limited service life of a hose is determined by the temperature and pressure of the gas or fluid within it, the time in service, its installation, the ambient temperatures, amount of flexing, and the vibration it is subjected to. With this in mind, it is recommended that all hoses be thoroughly inspected at least every 500 operating hours or after 15,000 miles (24 000 km). Look for surface damage or indications of damaged, twisted, worn, crimped, brittle, cracked, or leaking lines. Hoses having a worn outer surface or hoses with a damaged metal reinforcement should be considered unfit for further service.

It is also recommended that all hoses in this vehicle be replaced during major overhaul and/or after a maximum of five service years. Quality of replacement hose assemblies should always be equal to or superior to those supplied by the Original Equipment Manufacturer.

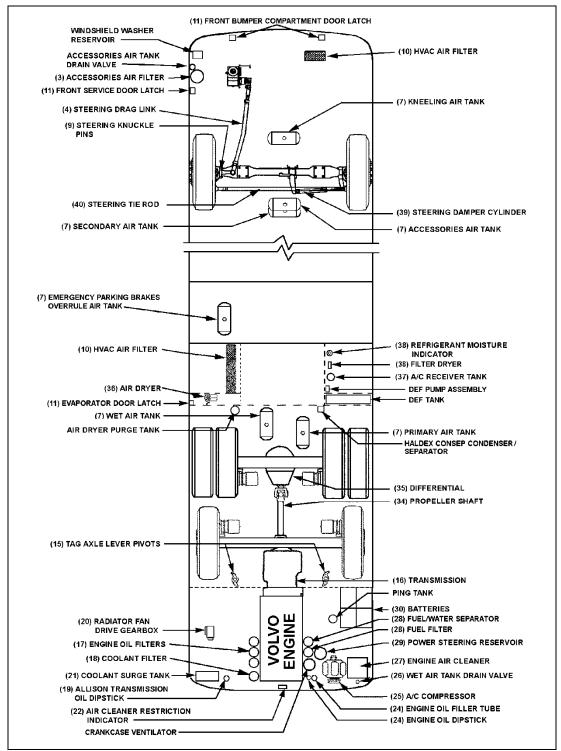


FIGURE 1: LUBRICATION AND SERVICING POINTS, I-BEAM AXLE FRONT SUSPENSION VEHICLES 24030\_1

### 2.2 LUBRICATION AND SERVICING SCHEDULE

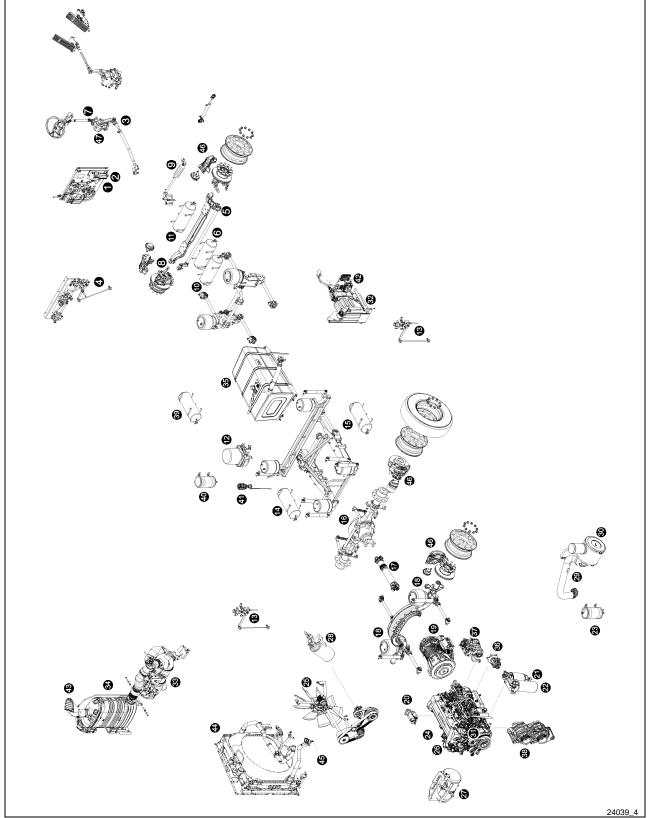


FIGURE 2: COMPONENTS IDENTIFICATION (COMPONENTS REPRESENTATION MAY DIFFER SLIGHTLY FROM AN ACTUAL VEHICLE)

### **SECTION 24: LUBRICATION**

	0.5	
Accessories air tank drain cock	25	Cooling fan gearbox
Accessories air filter	26	Allison transmission oil dipstick
Steering drag link	27	Engine coolant surge tank
Height control valve (front)	28	Coolant filter & conditioner
Steering tie rod	29	Engine air filter restriction indicator
Accessories air tank	30	Engine air filter
Steering column U-joints	31	Engine oil dipstick and filler tube
Steering knuckle pins	32	DEF tank
Steering damper cylinder	33	Diesel particulate filter (DPF)
Secondary air tank	34	SCR catalytic converter
Kneeling air tank	35	Diesel fuel tank
Air dryer	36	Power steering pump
Height control valve (rear)	37	Air compressor
Wet air tank	38	Alternators
Primary air tank	39	Emergency / parking Brakes Overrule Control Valve
Differential	40	Air dryer purge tank
Propeller shaft	41	Haldex Condenser / Separator
Tag axle lever pivot	42	DEF pump
Transmission	43	Diffuser assembly
Starter	44	Radiator core & Charge Air Cooler (CAC)
Primary fuel filter	45	Cooling system drain plug
Secondary fuel filter	46	Brake caliper
Power steering fluid tank	47	Steering gear
Engine oil filter		
	Steering drag link Height control valve (front) Steering tie rod Accessories air tank Steering column U-joints Steering knuckle pins Steering damper cylinder Secondary air tank Kneeling air tank Air dryer Height control valve (rear) Wet air tank Primary air tank Differential Propeller shaft Tag axle lever pivot Transmission Starter Primary fuel filter Secondary fuel filter Power steering fluid tank	Accessories air filter 26 Steering drag link 27 Height control valve (front) 28 Steering tie rod 29 Accessories air tank 30 Steering column U-joints 31 Steering knuckle pins 32 Steering damper cylinder 33 Secondary air tank 34 Kneeling air tank 35 Air dryer 36 Height control valve (rear) 37 Wet air tank 38 Primary air tank 39 Differential 40 Propeller shaft 41 Tag axle lever pivot 42 Transmission 43 Starter 44 Primary fuel filter 45 Secondary fluid tank 47

### IMPORTANT NOTE

Refer to the manufacturers documentation included in this maintenance manual for specific manufacturer's maintenance requirements.

A Lubrication and Servicing Schedule is included in this section to emphasize key service and lubrication points on the vehicle. Other maintenance requirements and specific instructions on how to check and service different components are covered in their respective sections in this maintenance manual.

#### 3. SECTION CHANGE LOG

DESCRIPTION				
1	Item numbers added in figure 2	12 Oct. 2016		
2				
3				
4				
5				
6				