



## **L-LINE AND A-LINE MAINTENANCE MANUAL**

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**Models: L7500  
L7501  
L8500  
L8511  
L8513  
L9500  
L9501  
L9511  
L9513  
L9522  
A9500  
A9522**

## Foreword

Scheduled maintenance provides a key element for the safe operation of your vehicle. A proper maintenance program also helps to minimize downtime and to safeguard warranties. This maintenance manual provides information necessary for years of safe, reliable, and cost-efficient vehicle operation.

**IMPORTANT:** The maintenance operations in this manual are **not all-inclusive**. Also refer to other component and body manufacturers' instructions for specific inspection and maintenance instructions.

Perform the operations in this maintenance manual at scheduled intervals. Perform the pretrip and post-trip inspections, and daily/weekly/monthly maintenance, as outlined in the vehicle driver's manual. Major components, such as engines, transmissions, and rear axles, are covered in their own maintenance and operation manuals, that are provided with the vehicle. Perform any maintenance operations listed at the intervals scheduled in those manuals. Your Sterling Dealership has the qualified technicians and equipment to perform this maintenance for you. They can also set up a scheduled maintenance program tailored specifically to your needs. Optionally, they can assist you in learning how to perform these maintenance procedures.

**IMPORTANT:** Descriptions and specifications in this manual were in effect at the time of printing. Daimler Trucks North America LLC reserves the right to discontinue models and to change specifications or design at any time without notice and without incurring obligation. Descriptions and specifications contained in this publication provide no warranty, expressed or implied, and are subject to revision and editions without notice.

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## Environmental Concerns and Recommendations

Whenever you see instructions in this manual to discard materials, you should attempt to reclaim and recycle them. To preserve our environment, follow appropriate environmental rules and regulations when disposing of materials.

## NOTICE: Parts Replacement Considerations

Do not replace suspension, axle, or steering parts (such as springs, wheels, hubs, and steering gears) with used parts. Used parts may have been subjected to collisions or improper use and have undetected structural damage.

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**Daimler Trucks North America LLC  
Service Systems and Documentation (POC-SSD)  
P.O. Box 3849  
Portland, OR 97208–3849**

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## Descriptions of Service Publications

Daimler Trucks North America LLC distributes the following major service publications in paper and electronic (via ServicePro®) formats.

<b>Workshop/Service Manual</b>	Workshop/service manuals contain service and repair information for all vehicle systems and components, except for major components such as engines, transmissions, and rear axles. Each workshop/service manual section is divided into subjects that can include general information, principles of operation, removal, disassembly, assembly, installation, and specifications.
<b>Maintenance Manual</b>	Maintenance manuals contain routine maintenance procedures and intervals for vehicle components and systems. They have information such as lubrication procedures and tables, fluid replacement procedures, fluid capacities, specifications, and procedures for adjustments and for checking the tightness of fasteners. Maintenance manuals do not contain detailed repair or service information.
<b>Driver's/Operator's Manual</b>	Driver's/operator's manuals contain information needed to enhance the driver's understanding of how to operate and care for the vehicle and its components. Each manual contains a chapter that covers pretrip and post-trip inspections, and daily, weekly, and monthly maintenance of vehicle components. Driver's/operator's manuals do not contain detailed repair or service information.
<b>Service Bulletins</b>	Service bulletins provide the latest service tips, field repairs, product improvements, and related information. Some service bulletins are updates to information in the workshop/service manual. These bulletins take precedence over workshop/service manual information, until the latter is updated; at that time, the bulletin is usually canceled. The service bulletins manual is available only to dealers. When doing service work on a vehicle system or part, check for a valid service bulletin for the latest information on the subject.  <b>IMPORTANT:</b> Before using a particular service bulletin, check the current service bulletin validity list to be sure the bulletin is valid.
<b>Parts Technical Bulletins</b>	Parts technical bulletins provide information on parts. These bulletins contain lists of parts and BOMs needed to do replacement and upgrade procedures.
Web-based repair, service, and parts documentation can be accessed using the following applications on the AccessSterling.com website.	
<b>ServicePro</b>	ServicePro® provides Web-based access to the most up-to-date versions of the publications listed above. In addition, the Service Solutions feature provides diagnostic assistance with Symptoms Search, by connecting to a large knowledge base gathered from technicians and service personnel. Search results for both documents and service solutions can be narrowed by initially entering vehicle identification data.
<b>PartsPro</b>	PartsPro® is an electronic parts catalog system, showing the specified vehicle's build record.
<b>EZWiring</b>	EZWiring™ makes Sterling, Freightliner, Freightliner Custom Chassis Corporation, Thomas Built Buses, and Western Star products' wiring drawings and floating pin lists available online for viewing and printing. EZWiring can also be accessed from within PartsPro.

## Descriptions of Service Publications

Warranty-related service information available on the AccessSterling.com website includes the following documentation.

### **Recall Campaigns**

Recall campaigns cover situations that involve service work or replacement of parts in connection with a recall notice. These campaigns pertain to matters of vehicle safety. All recall campaigns are distributed to dealers; customers receive notices that apply to their vehicles.

### **Field Service Campaigns**

Field service campaigns are concerned with non-safety-related service work or replacement of parts. All field service campaigns are distributed to dealers; customers receive notices that apply to their vehicles.

## Page Description

For an example of an *L-Line and A-Line Maintenance Manual* page, see [Fig. 1](#).

The diagram shows a page from a maintenance manual. At the top, the title 'Frame and Fifth Wheel' is centered, with a group number '31' on the right. Below the title is a section header '31-01 Fifth Wheel Inspecting'. A 'WARNING' box follows, containing safety instructions. Below the warning is the manufacturer name 'FONTAINE' and a list of 7 steps. A second 'WARNING' box is present, followed by step 8. To the right of the main text is a list of steps 8.1 through 10. Below these is the manufacturer name 'HOLLAND' and a list of steps 1 through 7.2. At the bottom left, the release date '08/25/98' is shown. At the bottom right, the page number '31/1' is shown. Callouts A through E point to specific parts of the page: A points to the group number '31', B points to the title 'Frame and Fifth Wheel', C points to the group number '31', D points to the release date '08/25/98', and E points to the page number '31/1'.

**Frame and Fifth Wheel** **31**

**31-01 Fifth Wheel Inspecting**

**WARNING**

All fifth wheel maintenance, adjustment, and rebuilding must be done only by a qualified mechanic. Improper or incomplete procedures could result in a possible disengagement of the trailer from the tractor, which could result in personal injury or property damage.

Parts are under spring compression. Wear safety goggles while servicing the fifth wheel. Failure to do so can result in personal injury, due to parts ejecting with force.

**FONTAINE**

1. Disconnect the tractor from the trailer. For instructions, see the vehicle driver's manual.
2. Thoroughly clean the fifth wheel.
3. Look for cracks in the fifth wheel assembly, mounting brackets, and mounting parts.
4. Check the jaw and stationary jaw for mushrooming, and check that the serrations at the jaw and wedge are in good condition.
5. Test the safety lock latch for free operation.

NOTE: The safety lock latch is located at the front of the fifth wheel on the top plate.

6. Visually check for loose nuts or bolts (see Fig. 1) on the fifth wheel and on the mounting. Set a torque wrench to the maximum torque value for the bolt being checked, and confirm that the torque is to specification. Do not loosen the bolt to check the torque value. See **Group 00** in this manual for bolt torque specifications.
7. Visually check all springs to see if they are securely fastened, and are not deformed.

**WARNING**

Do not disassemble the fifth wheel to inspect the springs. The springs are under extreme pressure, and could cause serious injury.

8. Check wedge adjustment.

8.1 Open the kingpin lock, and vertically insert a two-inch-diameter shaft.

8.2 Release the lock by tripping the release latch at the bottom of the throat.

8.3 Adjust the wedge stop at the end of the wedge to approximately 1/4-inch (6-mm) clearance by turning the wedge stop rod located on the right side of the top plate.

9. Replace cracked, worn, or damaged parts with new parts. Replace all loose mounting bolts with 5/8-11 SAE grade 8 bolts, grade C locknuts, and hardened washers. Do not re-use bolts, nuts, and washers on fifth wheel mountings.

10. After inspecting the fifth wheel, lubricate all moving parts with a chassis or multipurpose grease. Apply a generous coating of grease to the top plate to fill the grooves, or depressions, on the top plate. See **Maintenance Operation 31-02** for lubrication instructions.

**HOLLAND**

1. Disconnect the tractor from the trailer. For instructions, see the vehicle driver's manual.
2. Thoroughly steam-clean the fifth wheel.
3. Check for loose nuts or broken bolts on the fifth wheel assembly.
4. Inspect for cracks or wear on the mounting bolts.
5. Visually inspect for improper locking action and for cracks or wear on the jaw locking mechanism.
6. Check the depth of the grease grooves. If the depth of the grooves is 1/8 inch or less, replace the fifth wheel top plate. See **Group 31** in the vehicle workshop manual.
7. Check the condition of the X-pattern cast into the underside of the fifth wheel top plate. See Fig. 2. The fifth wheel top plate must be removed to check the X-pattern.
  - 7.1 Remove the roll pins from the bushing pins. Remove the bushing pins from the slide mount. Using a hoist, lift the fifth wheel top plate off of the vehicle.
  - 7.2 Turn the fifth wheel top plate over with the locks open. Check the condition of the X-pattern in the pockets. If the X-pattern

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A. Maintenance Operation Number consists of the Group Number followed by the Sequence Number  
 B. Group Title  
 C. Group Number  
 D. Release Date  
 E. Group Number/Page Number

**Fig. 1, Example of an L-Line and A-Line Maintenance Manual Page**

<b>Group No.</b>	<b>Group Title</b>
00 .....	General Information
01 .....	Engine
09 .....	Air Intake
13 .....	Air Compressor
15 .....	Alternators and Starters
20 .....	Engine Cooling/Radiator
25 .....	Clutch
26 .....	Transmission
31 .....	Frame and Fifth Wheel
32 .....	Suspension
33 .....	Front Axle
35 .....	Rear Axle
40 .....	Wheels and Tires
41 .....	Driveline
42 .....	Brakes
46 .....	Steering
47 .....	Fuel
49 .....	Exhaust
54 .....	Electrical, Instruments, and Controls
72 .....	Doors
83 .....	Heater and Air Conditioner
88 .....	Hood, Grille, and Cab Fenders

<b>Title of Maintenance Operation (MOP)</b>	<b>MOP Number</b>
Determining Scheduled Maintenance Intervals. . . . .	00-01
Initial Maintenance (IM) Operations. . . . .	00-06
Lubrication and Fluid Level Check . . . . .	00-04
M1 Maintenance Interval Operations Table . . . . .	00-07
M2 Maintenance Interval Operations Table . . . . .	00-08
M3 Maintenance Interval Operations Table . . . . .	00-09
M4 Maintenance Interval Operations Table . . . . .	00-10
Maintenance Operation Sets Table . . . . .	00-05
Maintenance Service Table. . . . .	00-02
Metric/U.S. Customary Conversion Tables. . . . .	00-13
Noise Emission Controls Maintenance. . . . .	00-11
Torque Specifications Tables. . . . .	00-14
Vehicle Maintenance Schedule Tables. . . . .	00-03
Verification of Inspections Log. . . . .	00-12

## Determining Scheduled Maintenance Intervals

Performing regular maintenance on your Sterling vehicle will help ensure that your Sterling vehicle delivers safe reliable service and optimum performance for years to come. Failure to follow a regular maintenance program can result in inefficient operation and unscheduled down time.

To determine the correct maintenance intervals for your vehicle you must first determine the type of service or conditions the vehicle will be operating in. Generally, most vehicles operate under conditions that fall within one of the three types of service described. Before placing your new vehicle in service, determine the type of service (Service Schedule I, II, or III) that applies to the intended use of the vehicle. After determining the vehicle's type of service, refer to the service schedule table or the vehicle maintenance schedule table, to determine how often maintenance should be performed.

When the vehicle reaches the distance given for a maintenance interval, see the "Maintenance Interval Operations Table" for a list of the maintenance operations to be performed at that maintenance interval. Use the maintenance operation reference numbers to find detailed instructions in the manual on each operation.

### Types of Service

**Service Schedule I** (severe service) applies to vehicles that annually travel less than 6000 miles (10 000 kilometers) *or* that operate under severe conditions. Examples of Schedule I (severe service) usage include: operation on extremely poor roads or where there is heavy dust accumulation; constant exposure to extreme hot, cold, salt-air, or other extreme climates; frequent short-distance travel; construction-site operation; city operation (fire truck); or farm operation.

**Service Schedule II** (short-haul transport) applies to vehicles that annually travel less than 60,000 miles (100 000 kilometers) and operate under normal conditions. Examples of Schedule II (short-haul transport) usage are: operation primarily in cities and densely populated areas; local transport with infrequent freeway travel; or high percentage of stop-and-go travel.

**Service Schedule III** (long-haul transport) is for vehicles that annually travel *more than* 60,000 miles (100 000 kilometers) with minimal city or stop-and-go operation. Examples of Schedule III (long-haul transport) usage are: regional delivery that is mostly freeway miles; interstate transport; or any road operation with high annual mileage.

**NOTE:** Maintenance instructions in this manual are based on average vehicle use and normal operating conditions. Unusual vehicle operating conditions may require service at more frequent intervals.



## Maintenance Service Table: 00–02

Maintenance Service Table					
Service Schedule	Maintenance Interval Operation	Maintenance Intervals			
		Frequency	Miles	km	Hours
<b>Schedule I*</b> — (severe service) vehicles that annually travel up to 6000 miles (10 000 km)	Initial Maintenance (IM)	first	1000	1600	100
	Maintenance 1 (M1)	every	1000	1600	100
	Maintenance 2 (M2)	every	5000	8000	500
	Maintenance 3 (M3)	every	10,000	16 000	1000
	Maintenance 4 (M4)	every	20,000	32 000	2000
<b>Schedule II†</b> — (short-haul transport) vehicles that annually travel up to 60,000 miles (100 000 km)	Initial Maintenance (IM)	first	9500	15 000	—
	Maintenance 1 (M1)	every	9500	15 000	
	Maintenance 2 (M2)	every	37,500	60 000	
	Maintenance 3 (M3)	every	75,000	120 000	
	Maintenance 4 (M4)	every	150,000	240 000	
<b>Schedule III†</b> — (long-haul transport) vehicles that annually travel over 60,000 miles (100 000 km)	Initial Maintenance (IM)	first	12,500	20 000	—
	Maintenance 1 (M1)	every	12,500	20 000	
	Maintenance 2 (M2)	every	50,000	80 000	
	Maintenance 3 (M3)	every	100,000	160 000	
	Maintenance 4 (M4)	every	300,000	480 000	

\* For Schedule I (severe service) vehicles equipped with an hourmeter, use maintenance intervals based on hours of operation rather than distance traveled.

† Use Schedule I (severe service) maintenance intervals for vehicles that operate under severe conditions, such as extremely poor roads, heavy dust accumulation, extreme climate, frequent short distance travel, construction-site operation, city operation (garbage truck), or farm operation.

**Table 1, Maintenance Service Table**

## General Information

00

## Vehicle Maintenance Schedule Tables: 00–03

1st through 35th Vehicle Maintenance Intervals for Service Schedule I					
Maint. Number	Required Maintenance Operation Interval	Service Date	Service I		
			Miles	km	Hours
1st	Initial Maintenance (IM) and M1		1000	1600	100
2nd	M1		2000	3200	200
3rd	M1		3000	4800	300
4th	M1		4000	6400	400
5th	M1 and M2		5000	8000	500
6th	M1		6000	9600	600
7th	M1		7000	11 200	700
8th	M1		8000	12 800	800
9th	M1		9000	14 400	900
10th	M1, M2 and M3		10,000	16 000	1000
11th	M1		11,000	17 600	1100
12th	M1		12,000	19 200	1200
13th	M1		13,000	20 800	1300
14th	M1		14,000	22 400	1400
15th	M1 and M2		15,000	24 000	1500
16th	M1		16,000	25 600	1600
17th	M1		17,000	27 200	1700
18th	M1		18,000	28 800	1800
19th	M1		19,000	30 400	1900
20th	M1, M2, M3 and M4		20,000	32 000	2000
21st	M1		21,000	33 600	2000
22nd	M1		22,000	35 200	2200
23rd	M1		23,000	36 800	2300
24th	M1		24,000	38 400	2400
25th	M1 and M2		25,000	40 000	2500
26th	M1		26,000	41 600	2600
27th	M1		27,000	43 200	2700
28th	M1		28,000	44 800	2800
29th	M1		29,000	46 400	2900
30th	M1, M2 and M3		30,000	48 000	3000
31st	M1		31,000	49 600	3100
32nd	M1		32,000	51 200	3200
33rd	M1		33,000	52 800	3300
34th	M1		34,000	54 400	3400