



L-LINE AND A-LINE WORKSHOP MANUAL

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

Foreword

The purpose of this manual is to assist the service technician when the vehicle is serviced. Major drivetrain component service information is not included in this manual, but is located in each manufacturer's service manual.

Instructions and procedures are those recommended by Sterling Trucks or the component manufacturer.

Maintenance schedules and additional service information are included in the *L-Line and A-Line Maintenance Manual*.

IMPORTANT: Descriptions and specifications in this manual were in effect at the time of printing. Sterling Trucks 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.

Refer to www.Daimler-TrucksNorthAmerica.com and www.SterlingTrucks.com for more information, or contact Daimler Trucks North America LLC at the address below.

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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Descriptions of Service Publications

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

Workshop/Service Manual	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, specifications, and troubleshooting.
Maintenance Manual	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, procedures for adjustments and for checking the tightness of fasteners. Maintenance manuals do not contain detailed repair or service information.
Driver's/Operator's Manual	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.
Service Bulletins	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. IMPORTANT: Before using a particular service bulletin, check the current service bulletin validity list to be sure the bulletin is valid.
Parts Technical Bulletins	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.	
ServicePro	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. Results for both documents and service solutions can be narrowed by initially entering vehicle identification data.
PartsPro	PartsPro® is an electronic parts catalog system, showing the specified vehicle's build record.
EZWiring	EZWiring™ makes Sterling, Freightliner, Western Star, Thomas Built Buses, and Freightliner Custom Chassis Corporation 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 Workshop Manual* page, see **Fig. 1**.

The diagram shows a page from a workshop manual with the following content and annotations:

- A:** Subject Topic (Wheels and Tires)
- B:** Section Title (10-Hole Disc Wheel With Inner and Outer Nuts; Removal and Installation)
- C:** Section Number (40.00)
- D:** Subject Title (10-Hole Disc Wheel With Inner and Outer Nuts; Removal and Installation)
- E:** Manual Title (Medium Trucks Service Manual, Supplement 4, December 1993)
- F:** Supplement Number and Release (Supplement) Date (06/13/94)
- G:** Subject Number/Subject Page Number (120/1)

Removal

1. Check all tires that will not be serviced, to prevent vehicle movement. If removing the wheels and tires from the front axle, apply the parking brake.
2. Raise the end of the vehicle being serviced until the tires clear the floor. Place safety stands under the axle being serviced.
3. If the tire or wheel is damaged (or if there is suspected damage), deflate the tire being serviced by removing the valve core. On rear axles deflate both tires of the dual assembly.
4. Place a jack or wheel-and-tire dolly under the wheel assembly being serviced. Remove the wheel nuts, then raise and remove the wheel assembly. Be careful not to damage the threads of the wheel studs as the wheel is pulled away. On rear wheel assemblies, remove the outer wheel first, being careful not to damage the threads of the inner wheel nuts.

Installation

NOTE: Before installing a wheel and tire assembly, inspect it using the instructions under **Subject 160**. Also, follow the tire matching and mixing requirements under **Subject 050**.

1. Clean the hub and wheel mounting surfaces, and between the rims of dual wheels. Make sure the tire is inflated using the procedures under **Subject 180**.
2. Use a jack or wheel-and-tire dolly to mount the wheel assembly (inner dual wheel of rear wheel assemblies) on the wheel studs. Be careful not to damage the threads of the wheel studs when installing the wheel assembly.

IMPORTANT: Mount the wheel assembly so that the balance weight(s) on the wheels are 180 degrees opposite the balance weight(s) on the brake drum (**Fig. 1**).

If, on two-handhole wheels, this causes the valve stems of rear wheel assemblies to be in the same

wheel hole, mount the outer wheel so that the outer wheel balance weight(s) are on the same side of the assembly as the brake drum balance weight(s). See **Fig. 2**.

If, on five-handhole or aluminum wheels, the valve stems of rear wheel assemblies are in the same handhole, separate the valve stems by one hole. Install the wheel weights evenly and as close to 180 degrees opposite the brake drum balance weight(s) as possible. See **Fig. 3**.

3. Install a wheel nut (inner wheel nut of rear wheel assemblies) on each wheel stud, and run them up until each nut is flush with the face or the chamfer of the wheel. Rotate the wheel a half turn to seat the parts.
4. Tighten the wheel nuts 68 N·m (50 lbf·ft), following the sequence in **Fig. 4**.
5. Following the same sequence, tighten the wheel nuts again. Refer to the applicable table in **Specifications, 400**.

WARNING: If the wheel nuts cannot be tightened to minimum torque values, the studs could be turning in the hub flange, having lost their locking ability. In this case, the wheel hub assembly is damaged and must be replaced with a new assembly.

Failure to reach minimum torque values could also be caused by stripped threads on the wheel studs or wheel nuts. Again, damaged parts must be replaced with new parts, as described in the front axle or rear axle group of this manual. Failure to replace damaged parts could result in the loss of a wheel and loss of vehicle control, causing property damage or personal injury.

6. For front wheel assemblies, go to the next step. For rear wheel assemblies, use a jack or wheel-and-tire dolly to mount the outer dual wheel on the inner wheel nuts. Be careful not to damage the threads of the inner wheel nuts when installing the wheel assembly. Install the outer wheel nuts following the procedures above.
7. Remove the safety stands, lower the vehicle, and remove the chocks.

Medium Trucks Service Manual, Supplement 4, December 1993

06/13/94

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

Group No.	Group Title
00	General Information
01	Engine
09	Air Intake
13	Air Compressor
15	Alternators and Starters
20	Engine Cooling/Radiator
25	Clutch
26	Transmission
30	Throttle Control
31	Frame and Frame Components
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
60	Cab
72	Doors
82	Windshield Wipers and Washer
83	Heater and Air Conditioner
88	Hood, Grille, and Cab Fenders
91	Seats and Restraint Systems
98	Paint

Jacking

⚠ WARNING

Do not run the engine when jacking the vehicle. Contact of the wheels with the ground can cause the vehicle to move, which could result in personal injury.

Support the vehicle prior to performing any procedure requiring the vehicle to be jacked above the ground. Failure to properly support the vehicle could result in personal injury or damage to the vehicle.

Make sure the jacks and jack stands are properly located to prevent the vehicle from falling. Failure to properly locate the jacks and jack stands could result in personal injury or damage to the vehicle.

Wheel chocks must be used to prevent the vehicle from rolling and falling off the jack. Failure to properly chock the vehicle wheels could result in personal injury or damage to the vehicle.

⚠ CAUTION

If the vehicle is equipped with traction control, disable the traction system before performing any dynamic driveline maintenance, or damage to the traction control system could result.

NOTE: To raise vehicles with floor jacks, follow the jack manufacturer's recommendations for placement of the jack. Do not exceed the rated lift capacity of any jack.

1. See **Fig. 1** for the front jacking points.

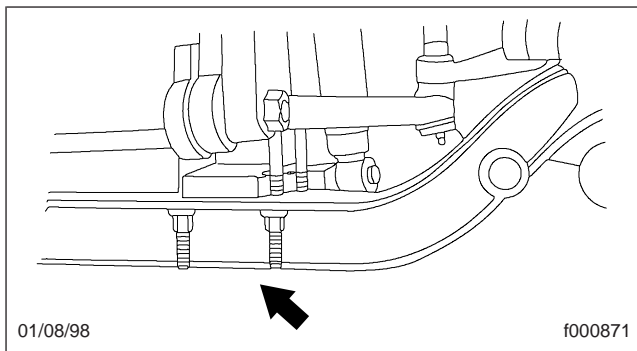


Fig. 1, Front Jacking Points

2. See **Fig. 2** for the rear jacking points.

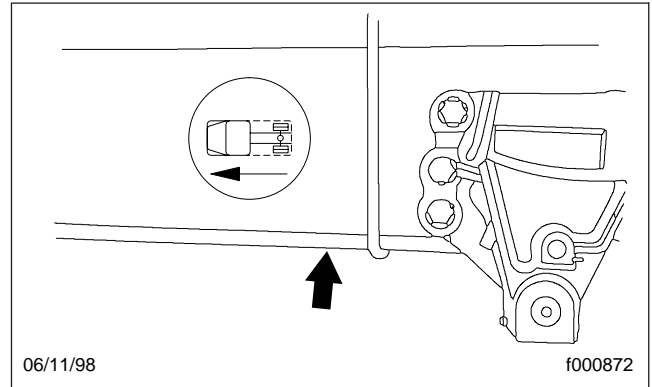


Fig. 2, Rear Jacking Points

Lifting

⚠ CAUTION

If the vehicle is equipped with traction control, disable the traction system before performing any dynamic driveline maintenance, or damage to the traction control system could result.

Damage to the vehicle can occur if care is not used when positioning the hoist adaptors prior to lifting the vehicle.

NOTE: Position the hoist adaptors for heavy-duty hoists according to the hoist manufacturer's recommendations. Be sure the hoist has an adequate lifting capacity for the vehicle being lifted.

1. See **Fig. 3** for the front lifting points.

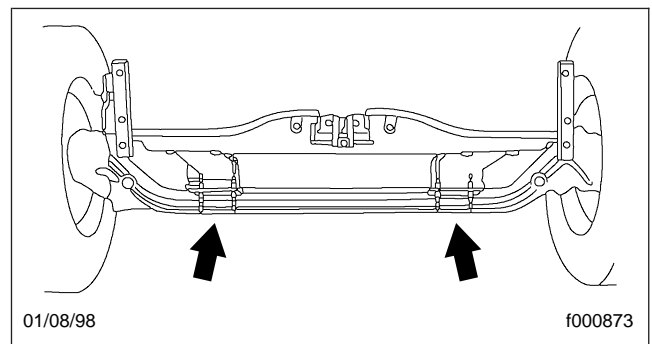


Fig. 3, Front Lifting Points

2. See **Fig. 4** for the rear lifting points.

Jacking and Lifting

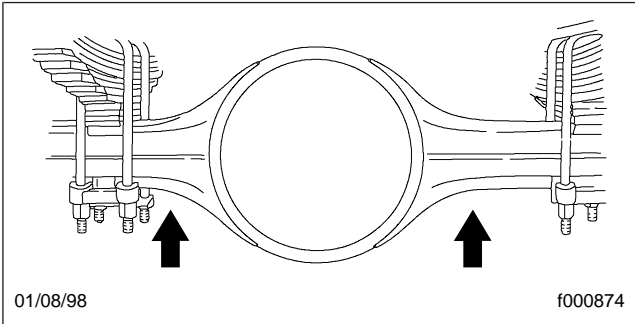


Fig. 4, Rear Lifting Points

NOTE: On vehicles equipped with tandem axles, position the hoist on the rearmost axle.

VIN for Vehicles Built through April 30, 2000

IMPORTANT: See **Subject 060** for the vehicle identification numbering system for vehicles built May 1, 2000, or later.

Federal Motor Vehicle Safety Standard 115 specifies that all vehicles sold in the U.S. be assigned a 17-character Vehicle Identification Number (VIN). Using a combination of letters and numerals, the VIN defines the manufacturer, model, and major characteristics of the vehicle. See **Table 1** for the character positions of a typical Sterling VIN, 480ALEBDXWA345678.

The VIN can be found on the Vehicle Specification Decal (see the driver's manual for decal location) and stamped on the outside of the left-hand frame rail about 24 to 40 inches (60 to 100 cm) aft of the front axle centerline. On Sterling vehicles built before July 1998, the VIN is stamped on the frame rail near the front axle position.

IMPORTANT: A new VIN-code structure will be used for all vehicles built after April 30, 2000. Character positions 1 through 4 and 9 through 17 are nearly the same in both versions, but positions 5 through 8 have been assigned slightly different parameters. As a result, the build date of a vehicle must be determined before the VIN can be decoded.

For all vehicles, a check digit (9th character) is determined by assignment of weighted values to the other 16 characters. These weighted values are processed through a series of equations designed to check validity of the VIN and to detect VIN alteration.

NOTE: Always specify the VIN when ordering parts.

Seventeen-Character Vehicle Identification Number (VIN)																		
Typical VIN	4	8	0	A	L	E	B	D	X	W	A	3	4	5	6	7	8	
Character Position	1, 2, 3	4	5	6, 7	8	9	10	11	12 thru 17									
Decoding Table *	Table 2	Table 3	Table 4	Table 5	Table 6	—	Table 7	Table 8	—									
Code Description																		
Manufacturer, Make, Vehicle Type																		
Chassis, Front Axle Position, Brakes																		
Vehicle Model Series, Cab																		
Engine Model, Horsepower Range																		
Gross Vehicle Weight Rating (GVWR)																		
Check Digit																		
Vehicle Model Year																		
Plant of Manufacture																		
Production Number																		

* For corresponding decoding information, see the applicable tables in this subject.

Table 1, Seventeen-Character Vehicle Identification Number (VIN)

VIN Positions 1, 2, and 3 (Manufacturer, Make, Vehicle Type)			
Code	Vehicle Manufacturer	Vehicle Make	Vehicle Type
2FW	Sterling, Canada-built	Sterling	Truck-Tractor
2FZ	Sterling, Canada-built	Sterling	Incomplete Vehicle
480	Sterling, U.S.-built	Sterling	Truck-Tractor

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Vehicle Identification Numbering System

VIN for Vehicles Built through April 30, 2000

VIN Positions 1, 2, and 3 (Manufacturer, Make, Vehicle Type)			
Code	Vehicle Manufacturer	Vehicle Make	Vehicle Type
49H	Sterling, U.S.-built	Sterling	Incomplete Vehicle

Table 2, VIN Positions 1, 2, and 3 (Manufacturer, Make, Vehicle Type)

VIN Position 4 (Chassis, Front Axle Position, Brakes)			
Code	Chassis	Front Axle Position	Brakes
A	4 x 2 Truck	Forward	Hydraulic
B	8 x 4 Truck-Tractor	Setback	Air
C	6 x 6 Truck-Tractor	Setback	Air
D	4 x 4 Truck	Setback	Hydraulic
E	4 x 4 Truck	Setback	Air
F	8 x 4 Truck	Forward	Air
G	8 x 4 Truck-Tractor	Forward	Air
H	4 x 2 Truck	Forward	Air
J	10 x 4 Truck	All	Air
K	4 x 2 Truck-Tractor	Forward	Air
L	6 x 2 Truck	Forward	Air
M	6 x 2 Truck-Tractor	Forward	Air
N	6 x 4 Truck	Forward	Air
P	6 x 4 Truck-Tractor	Forward	Air
R	10 x 6 Truck	Forward	Air
S	10 x 6 Truck-Tractor	Forward	Air
T	6 x 6 Truck	Setback	Air
U	8 x 6 Truck	All	Air
V	8 x 6 Truck-Tractor	All	Air
W	4 x 2 Truck-Tractor	Setback	Air
X	6 x 4 Truck	Setback	Air
Y	6 x 4 Truck-Tractor	Setback	Air
Z	6 x 2 Truck	Setback	Air
1	4 x 2 Truck	Forward	Air/Hydraulic
2	4 x 4 Truck	Setback	Air
3	4 x 2 Truck	Setback	Hydraulic
4	8 x 4 Truck	Setback	Air
5	6 x 2 Truck-Tractor	Setback	Air
6	4 x 2 Truck	Setback	Air

VIN Position 4 (Chassis, Front Axle Position, Brakes)			
Code	Chassis	Front Axle Position	Brakes
7	Glider	Setback	Air
8	Glider	Forward	Air
9	4 x 2 Truck	Setback	Air/Hydraulic
0	Glider	Setback	Hydraulic

Table 3, VIN Position 4 (Chassis, Front Axle Position, Brakes)

VIN Position 5 (Vehicle Model Series, Cab)	
Code	Sterling Models
A	L7500 series
B	L8500 series
C	L9501
D	L8511
E	L9500 series
F	L9522
G	A9522
H	A9500 series
J	A9513
K	L9513
L	L8501
M	L8513
N	L9511
R	L7501
S	ST9500
W	SC8000
2	SC6000
7	SC7000

Table 4, VIN Position 5 (Vehicle Model Series, Cab)

VIN for Vehicles Built through April 30, 2000

VIN Positions 6 and 7 (Engine Manufacturer, Model, Horsepower Range)			
Code	Engine Manufacturer	Engine Model	HP Range
AY	Cummins	NTC / N14	207–251
BD	Mercedes-Benz	MBE4000	353–407
BE	Mercedes-Benz	MBE4000	408–495
BX	Mercedes-Benz	MBE4000	288–352
BY	Cummins	NTC / N14	254–310
CX	Detroit Diesel	S-60, 11.1 L	331–402
CY	Cummins	N14	315–385
DY	Cummins	NTC / N14	389–475
DZ	Cummins	N14	476–580
EB	Caterpillar	C10 / 3176J	225–275
EC	Caterpillar	C10 / 3176J	276–335
ED	Caterpillar	C10 / 3176	336–407
F4	Cummins	B5.9 (propane)	185–224
FA	Cummins	6BT 5.9 (diesel) / ISB	185–224
FB	Cummins	6BT 5.9 (diesel) / ISB	225–275
FF	Cummins	6BT 5.9/ ISB	153–184
FH	Cummins	6BT 5.9–195G (natural gas)	185–224
FV	Cummins	6BT 5.9–195G (natural gas)	126–152
GA	Mercedes-Benz	OM 366LA	185–224
GB	Mercedes-Benz	OM 366LA	225–275
GF	Mercedes-Benz	OM 366LA	153–184
HB	Detroit Diesel	S–50	225–275
HC	Detroit Diesel	S–50	276–335
HD	Detroit Diesel	S–50	336–407
JA	Caterpillar	CFE / 3126 (diesel)	185–224
JB	Caterpillar	CFE / 3126 (diesel)	225–275
JC	Caterpillar	CFE / 3126 (diesel)	276–335
JF	Caterpillar	CFE / 3126 (diesel)	153–184
KY	Cummins	L10	225–275
LA	Cummins	6C 8.3 (diesel) / ISC	185–224
LB	Cummins	6C 8.3 (diesel) / ISC	225–275
LC	Cummins	6C 8.3 (diesel) / ISC	276–335
LD	Cummins	L10	336–407
LE	Cummins	ISC	336–407
LL	Cummins	C 8.3 (natural gas) / ISC	225–276

VIN for Vehicles Built through April 30, 2000

VIN Positions 6 and 7 (Engine Manufacturer, Model, Horsepower Range)			
Code	Engine Manufacturer	Engine Model	HP Range
LY	Cummins	L10	276–330
MC	Cummins	M11 / ISM	276–335
MD	Cummins	M11 / ISM	336–407
ME	Cummins	M11 / ISM	408–495
MW	Cummins	ISM	496–605
NT	Cummins	4B 3.9–130 hp (diesel)	126–152
PY	Detroit Diesel	S-60, 11.1 L	275–330
RY	Caterpillar	3406	270–330
SE	Detroit Diesel	S-60, 12.7 L	408–495
SM	Detroit Diesel	S-60, 12.7 L	276–335
SY	Caterpillar	3406	333–407
SZ	Detroit Diesel	S-60, 12.7 L	496–605
TD	Detroit Diesel	S-55	336–407
TE	Detroit Diesel	S-55	408–495
TY	Caterpillar	3408	383–467
UY	Caterpillar	3306	225–275
VY	Caterpillar	3406	225–269
WC	Caterpillar	CFE/3126	276–335
WD	Caterpillar	C12 / 3176L	336–407
WE	Caterpillar	C12 / 3176L	408–495
WY	Caterpillar	3306	276–335
XY	Caterpillar	3406	408–495
XZ	Caterpillar	3406	496–605
YY	Detroit Diesel	S-60, 11.1 L	225–274
ZY	Detroit Diesel	S-60, 12.7 L	333–407
1B	Detroit Diesel	6L–71	225–275
1C	Detroit Diesel	6L–71	276–335
2W	Detroit Diesel	S-60, 14.0L	496–605
3A	Mercedes-Benz	MB904	185–224
4Y	Detroit Diesel	6V–92	239–287
5Y	Detroit Diesel	6V–92	288–352
6A	Mercedes-Benz	MB906	185–224
6B	Mercedes-Benz	MB906	225–275
6C	Mercedes-Benz	MB906	276–335
6Y	Detroit Diesel	8V–92	365–446

VIN for Vehicles Built through April 30, 2000

VIN Positions 6 and 7 (Engine Manufacturer, Model, Horsepower Range)			
Code	Engine Manufacturer	Engine Model	HP Range
7D	Cummins	ISX Signature	336–407
7E	Cummins	ISX Signature	408–495
7W	Cummins	ISX Signature	496–605
8Y	Detroit Diesel	8V–92	302–364
9Y	Detroit Diesel	8V–92	447–522
0Y	No Engine	—	—

Table 5, VIN Positions 6 and 7 (Engine Manufacturer, Model, Horsepower Range)

VIN Position 8 (Gross Vehicle Weight Rating)		
Code	lb	kg
A	26,001–33,000	11 794–14 968
B	33,001 or over	14 969 or over
C	19,501–26,000	8846–11 793
D	16,001–19,500	7258–8845
2	6001–10,000	2722–4536
3	10,001–14,000	4537–6350
4	14,001–16,000	6351–7257
9	N/A: Incomplete Vehicle or Glider	

Table 6, VIN Position 8 (Gross Vehicle Weight Rating)

VIN Position 10 (Vehicle Model Year)	
Code	Model Year
N	1992
P	1993
R	1994
S	1995
T	1996
V	1997
W	1998
X	1999
Y	2000
1	2001
3	2002

Table 7, VIN Position 10 (Vehicle Model Year)

VIN Position 11 (Plant of Manufacture)	
Code	Plant of Manufacture
A	St. Thomas, Ontario
H	Mt. Holly, North Carolina

Table 8, VIN Position 11 (Plant of Manufacture)

VIN for Vehicles Built from May 1, 2000

IMPORTANT: A revised VIN-code structure is used for all vehicles built after April 30, 2000. As a result, the build date of a vehicle must be determined before the VIN can be decoded. See **Subject 050** for the vehicle identification numbering system for vehicles built before May 1, 2000.

Federal Motor Vehicle Safety Standard 115 specifies that all vehicles sold in the U.S. be assigned a 17-character Vehicle Identification Number (VIN). Using a combination of letters and numerals, the VIN defines the manufacturer, model, and major characteristics of the vehicle. See **Table 1** for the character positions of a typical Sterling VIN, 2FZPABAV11AA12345.

The VIN can be found on the Vehicle Specification Decal (see the driver's manual for decal location) and stamped on the outside of the frame rails about 24 to 40 inches (60 to 100 cm) aft of the front axle centerline.

For all vehicles, a check digit (9th character) is determined by assignment of weighted values to the other 16 characters. These weighted values are processed through a series of equations designed to check validity of the VIN and to detect VIN alteration.

NOTE: Always specify the VIN when ordering parts.

Seventeen-Character Vehicle Identification Number (VIN)								
Typical VIN	2 F Z	P	A B	A V	1	1	A	A 1 2 3 4 5
Character Position	1, 2, 3	4	5, 6	7, 8	9	10	11	12-17
Code Description	World Manufacturer Identification	Chassis Configuration	Model, Cab, GVWR	Engine, Brakes	Check Digit Calculation	Model Year	Build Location	Production Serial Number
Decoding Table *	Table 2	Table 3	Table 4	Table 5	—	Table 6	Table 7	—

* For corresponding decoding information, see the applicable tables in this subject.

Table 1, Seventeen-Character Vehicle Identification Number (VIN)

VIN Positions 1, 2, and 3 (World Manufacturer Identification)			
Code	Vehicle Manufacturer	Vehicle Make	Vehicle Type
2FW	Sterling, Canada-built	Sterling	Truck/Tractor
2FZ	Sterling, Canada-built	Sterling	Incomplete Vehicle
480	Sterling, U.S.-built	Sterling	Truck/Tractor
49H	Sterling, U.S.-built	Sterling	Incomplete Vehicle

Table 2, VIN Positions 1, 2, and 3 (World Manufacturer Identification)

VIN Position 4 (Chassis Configuration)		
Code	Configuration	Chassis
A	4x2	Truck
B	4x2	Truck/Tractor
D	4x4	Truck
E	4x4	Truck/Tractor
F	6x2	Truck
G	6x2	Truck/Tractor

VIN Position 4 (Chassis Configuration)		
Code	Configuration	Chassis
H	6x4	Truck
J	6x4	Truck/Tractor
K	6x6	Truck
L	6x6	Truck/Tractor
M	8x4	Truck
N	8x4	Truck/Tractor

00.01

Vehicle Identification Numbering System

VIN for Vehicles Built from May 1, 2000

VIN Position 4 (Chassis Configuration)		
Code	Configuration	Chassis
P	8x6	Truck
R	8x6	Truck/Tractor
S	10x4	Truck
T	10x4	Truck/Tractor
U	10x6	Truck
V	10x6	Truck/Tractor
W	12x4	Truck
X	Glider	Glider
Y	8x2	Truck

Table 3, VIN Position 4 (Chassis, Front Axle Position, Brakes)

VIN Positions 5 and 6 (Model, Cab, Class/GVWR)			
Code	Model	Cab	Class (GVWR)
AA	SC7000 Cargo	COE	Class 6*
AB	SC7000 Cargo	COE	Class 7†
AC	SC7000 Cargo	COE	Class 8‡
AD	SC 8000 Cargo	COE	Class 7
AE	SC 8000 Cargo	COE	Class 8
AF	M5500 Acterra	Conventional	Class 5§
AG	M6500 Acterra	Conventional	Class 5
AH	M6500 Acterra	Conventional	Class 6
AJ	M7500 Acterra	Conventional	Class 6
AK	M7500 Acterra	Conventional	Class 7
AL	M8500 Acterra	Conventional	Class 6
AM	M8500 Acterra	Conventional	Class 7
AN	M8500 Acterra	Conventional	Class 8
AP	L 7500 Series	Conventional	Class 5
AR	L 7500 Series	Conventional	Class 6
AS	L 7500 Series	Conventional	Class 7
AT	L 7500 Series	Conventional	Class 8
AU	L 7500 Series Glider	Conventional	Glider
AV	L 8500 Series	Conventional	Class 7
AW	L 8500 Series	Conventional	Class 8
AX	L 8500 Series Glider	Conventional	Glider
AY	L 9500 Series	Conventional	Class 7

VIN Positions 5 and 6 (Model, Cab, Class/GVWR)			
Code	Model	Cab	Class (GVWR)
AZ	L 9500 Series	Conventional	Class 8
A1	L 9500 Series Glider	Conventional	Glider
A2	A 9500 Series	Conventional	Class 7
A3	A 9500 Series	Conventional	Class 8
A4	A 9500 Series Glider	Conventional	Glider
A5	ST 9500 Series	Conventional	Class 7
A6	ST 9500 Series	Conventional	Class 8
A7	ST 9500 Series Glider	Conventional	Glider
A8	L 7501	Conventional	Class 6
A9	L 7501	Conventional	Class 7
A0	L 7501	Conventional	Class 8
BA	L 8501	Conventional	Class 6
BB	L 8501	Conventional	Class 7
BC	L 8501	Conventional	Class 8
BD	L 8511	Conventional	Class 7
BE	L 8511	Conventional	Class 8
BF	L 8513	Conventional	Class 7
BG	L 8513	Conventional	Class 8
BH	L 9501	Conventional	Class 7
BJ	L 9501	Conventional	Class 8
BK	L 9511	Conventional	Class 7
BL	L 9511	Conventional	Class 8
BM	A 9513	Conventional	Class 7
BN	A 9513	Conventional	Class 8
BP	A 9522	Conventional	Class 7
BR	A 9522	Conventional	Class 8
BS	L 9522	Conventional	Class 7
BT	L 9522	Conventional	Class 8
BU	Condor	Coe	Class 7
BV	Condor	Coe	Class 8
BW	L 9513	Conventional	Class 7
BY	M7500 Acterra	Conventional	Class 8
BZ	M6500 Acterra	Conventional	Class 7
B1	6500 Sportchassis	Conventional	Class 5
B2	6500 Sportchassis	Conventional	Class 6

VIN for Vehicles Built from May 1, 2000

VIN Positions 5 and 6 (Model, Cab, Class/GVWR)			
Code	Model	Cab	Class (GVWR)
B3	M5500 Acterra	Conventional	Class 6
B4	M6500 Acterra Glider	Conventional	Glider
B5	M7500 Acterra Glider	Conventional	Glider
B6	M8500 Acterra Glider	Conventional	Glider
B7	Atego 6500	COE	Class 6
B8	Atego 6500 Glider	COE	Glider
B9	Atego 7500	COE	Class 7
CA	Atego 7500 Glider	COE	Glider
CB	Atego 8500	COE	Class 8
CD	Atego 8500 Glider	COE	Glider
CE	Acterra	Conventional	Class 5
CF	Acterra	Conventional	Class 6
CG	Acterra	Conventional	Class 7
CH	Acterra	Conventional	Class 8

VIN Positions 5 and 6 (Model, Cab, Class/GVWR)			
Code	Model	Cab	Class (GVWR)
CJ	Condor Glider	COE	Glider
CK	SC 8000 Cargo	COE	Class 6
CL	Acterra Glider	Conventional	Glider
CM	LC Series Car Hauler	Conventional	Class 8
CN	LC Series Car Hauler Glider	Conventional	Glider
CP	SC 8000 Cargo Glider	COE	Glider
CR	LC Series Car Hauler	Conventional	Class 7

* Class 6 GVWR is 19,501–26,000 lb.

† Class 7 GVWR is 26,001–33,000 lb.

‡ Class 8 GVWR is 33,001 lb and over.

§ Class 5 GVWR is 16,001–19,500 lb.

Table 4, VIN Positions 5 and 6 (Model, Cab, Class/GVWR)

VIN Positions 7 and 8 (Engine, Brakes)					
Code	Engine	Fuel	Displacement (L)	Configuration	Brakes
AA	Caterpillar 3176	Diesel	10.3	I-6	Air
AB	Caterpillar 3176	Diesel	10.3	I-6	Hydraulic
AC	Caterpillar 3176	Diesel	10.3	I-6	Air/Hydraulic
AD	Caterpillar 3406	Diesel	14.6	I-6	Air
AE	Caterpillar 3406	Diesel	14.6	I-6	Hydraulic
AF	Caterpillar 3406	Diesel	14.6	I-6	Air/Hydraulic
AG	Caterpillar 3406 E	Diesel	15.8	I-6	Air
AH	Caterpillar 3406 E	Diesel	15.8	I-6	Hydraulic
AJ	Caterpillar 3406 E	Diesel	15.8	I-6	Air/Hydraulic
AK	Caterpillar 3126/CFE	Diesel	7.2	I-6	Air
AL	Caterpillar 3126/CFE	Diesel	7.2	I-6	Hydraulic
AM	Caterpillar 3126/CFE	Diesel	7.2	I-6	Air/Hydraulic
AN	Caterpillar C10	Diesel	10.3	I-6	Air
AP	Caterpillar C10	Diesel	10.3	I-6	Hydraulic
AR	Caterpillar C10	Diesel	10.3	I-6	Air/Hydraulic
AS	Caterpillar C12	Diesel	12.0	I-6	Air
AT	Caterpillar C12	Diesel	12.0	I-6	Hydraulic
AU	Caterpillar C12	Diesel	12.0	I-6	Air/Hydraulic

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Vehicle Identification Numbering System

VIN for Vehicles Built from May 1, 2000

VIN Positions 7 and 8 (Engine, Brakes)					
Code	Engine	Fuel	Displacement (L)	Configuration	Brakes
AV	Caterpillar C15	Diesel	14.6	I-6	Air
AW	Caterpillar C15	Diesel	14.6	I-6	Hydraulic
AX	Caterpillar C15	Diesel	14.6	I-6	Air/Hydraulic
AY	Caterpillar C16	Diesel	15.8	I-6	Air
AZ	Caterpillar C16	Diesel	15.8	I-6	Hydraulic
A1	Caterpillar C16	Diesel	15.8	I-6	Air/Hydraulic
A2	Cummins L10	Diesel	10.8	I-6	Air
A3	Cummins L10	Diesel	10.8	I-6	Hydraulic
A4	Cummins L10	Diesel	10.8	I-6	Air/Hydraulic
A5	Cummins M11	Diesel	10.8	I-6	Air
A6	Cummins M11	Diesel	10.8	I-6	Hydraulic
A7	Cummins M11	Diesel	10.8	I-6	Air/Hydraulic
A8	Cummins ISM	Diesel	10.8	I-6	Air
A9	Cummins ISM	Diesel	10.8	I-6	Hydraulic
A0	Cummins ISM	Diesel	10.8	I-6	Air/Hydraulic
BA	Cummins NTC	Diesel	14	I-6	Air
BB	Cummins NTC	Diesel	14	I-6	Hydraulic
BC	Cummins NTC	Diesel	14	I-6	Air/Hydraulic
BD	Cummins N14	Diesel	14	I-6	Air
BE	Cummins N14	Diesel	14	I-6	Hydraulic
BF	Cummins N14	Diesel	14	I-6	Air/Hydraulic
BG	Cummins ISX/Signature	Diesel	14.9	I-6	Air
BH	Cummins ISX/Signature	Diesel	14.9	I-6	Hydraulic
BJ	Cummins ISX/Signature	Diesel	14.9	I-6	Air/Hydraulic
BK	Cummins C8.3	Diesel	8.3	I-6	Air
BL	Cummins C8.3	Diesel	8.3	I-6	Hydraulic
BM	Cummins C8.3	Diesel	8.3	I-6	Air/Hydraulic
BN	Cummins B5.9	Diesel	5.9	I-6	Air
BP	Cummins B5.9	Diesel	5.9	I-6	Hydraulic
BR	Cummins B5.9	Diesel	5.9	I-6	Air/Hydraulic
BS	Cummins ISC	Diesel	8.3	I-6	Air
BT	Cummins ISC	Diesel	8.3	I-6	Hydraulic
BU	Cummins ISC	Diesel	8.3	I-6	Air/Hydraulic
BV	Cummins ISB	Diesel	5.9	I-6	Air
BW	Cummins ISB	Diesel	5.9	I-6	Hydraulic
BX	Cummins ISB	Diesel	5.9	I-6	Air/Hydraulic

VIN for Vehicles Built from May 1, 2000

VIN Positions 7 and 8 (Engine, Brakes)					
Code	Engine	Fuel	Displacement (L)	Configuration	Brakes
BY	Cummins B5.9	Propane	5.9	I-6	Air
BZ	Cummins B5.9	Propane	5.9	I-6	Hydraulic
B1	Cummins B5.9	Propane	5.9	I-6	Air/Hydraulic
B2	Cummins B5.9	Natural Gas	5.9	I-6	Air
B3	Cummins B5.9	Natural Gas	5.9	I-6	Hydraulic
B4	Cummins B5.9	Natural Gas	5.9	I-6	Air/Hydraulic
B5	Cummins C8.3	Natural Gas	8.3	I-6	Air
B6	Cummins C8.3	Natural Gas	8.3	I-6	Hydraulic
B7	Cummins C8.3	Natural Gas	8.3	I-6	Air/Hydraulic
B8	Detroit Diesel Series 50	Diesel	8.5	I-4	Air
B9	Detroit Diesel Series 50	Diesel	8.5	I-4	Hydraulic
B0	Detroit Diesel Series 50	Diesel	8.5	I-4	Air/Hydraulic
CA	Detroit Diesel Series 55	Diesel	12	I-6	Air
CB	Detroit Diesel Series 55	Diesel	12	I-6	Hydraulic
CC	Detroit Diesel Series 55	Diesel	12	I-6	Air/Hydraulic
CD	Detroit Diesel Series 60	Diesel	11.1	I-6	Air
CE	Detroit Diesel Series 60	Diesel	11.1	I-6	Hydraulic
CF	Detroit Diesel Series 60	Diesel	11.1	I-6	Air/Hydraulic
CG	Detroit Diesel Series 60	Diesel	12.7	I-6	Air
CH	Detroit Diesel Series 60	Diesel	12.7	I-6	Hydraulic
CJ	Detroit Diesel Series 60	Diesel	12.7	I-6	Air/Hydraulic
CK	Detroit Diesel Series 60	Diesel	14.0	I-6	Air
CL	Detroit Diesel Series 60	Diesel	14.0	I-6	Hydraulic
CM	Detroit Diesel Series 60	Diesel	14.0	I-6	Air/Hydraulic
CN	Mercedes-Benz MBE900	Diesel	4.3	I-4	Air
CP	Mercedes-Benz MBE900	Diesel	4.3	I-4	Hydraulic
CR	Mercedes-Benz MBE900	Diesel	4.3	I-4	Air/Hydraulic
CS	Mercedes-Benz MBE900	Diesel	6.4	I-6	Air
CT	Mercedes-Benz MBE900	Diesel	6.4	I-6	Hydraulic
CU	Mercedes-Benz MBE900	Diesel	6.4	I-6	Air/Hydraulic
CV	Mercedes-Benz MBE4000	Diesel	12.8	I-6	Air
CW	Mercedes-Benz MBE4000	Diesel	12.8	I-6	Hydraulic
CX	Mercedes-Benz MBE4000	Diesel	12.8	I-6	Air/Hydraulic
CY	Cummins ISL	Diesel	8.9	I-6	Air
CZ	Cummins ISL	Diesel	8.9	I-6	Hydraulic
C1	Cummins ISL	Diesel	8.9	I-6	Air/Hydraulic

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Vehicle Identification Numbering System

VIN for Vehicles Built from May 1, 2000

VIN Positions 7 and 8 (Engine, Brakes)					
Code	Engine	Fuel	Displacement (L)	Configuration	Brakes
C2	Cummins B3.9	Diesel	3.9	I-4	Air
C3	Cummins B3.9	Diesel	3.9	I-4	Hydraulic
C4	Cummins B3.9	Diesel	3.9	I-4	Air/Hydraulic
C5	Cummins ISB3.9	Diesel	3.9	I-4	Air
C6	Cummins ISB3.9	Diesel	3.9	I-4	Hydraulic
C7	Cummins ISB3.9	Diesel	3.9	I-4	Air/Hydraulic
DA	Caterpillar C9	Diesel	8.8	I-6	Air
DB	Caterpillar C9	Diesel	8.8	I-6	Hydraulic
DC	Caterpillar C7	Diesel	7.2	I-6	Air
DD	Caterpillar C7	Diesel	7.2	I-6	Hydraulic
DE	Caterpillar C13	Diesel	12.5	I-6	Air
DF	Caterpillar C13	Diesel	12.5	I-6	Hydraulic
DG	Mercedes-Benz MBE900	Diesel	4.8	I-4	Air
DH	Mercedes-Benz MBE900	Diesel	4.8	I-4	Hydraulic
DJ	Mercedes-Benz MBE900	Diesel	7.2	I-6	Air
DK	Mercedes-Benz MBE900	Diesel	7.2	I-6	Hydraulic
DL	Caterpillar C11	Diesel	11.1	I-6	Air
DM	Caterpillar C11	Diesel	11.1	I-6	Hydraulic
00	No Engine	—	—	—	—

Table 5, VIN Positions 7 and 8 (Engine, Brakes)

VIN Position 10 (Model Year)	
Code	Model Year
Y	2000
1	2001
2	2002
3	2003
4	2004
5	2005
6	2006
7	2007
8	2008
9	2009
A	2010

Table 6, VIN Position 10 (Vehicle Model Year)

VIN Position 11 (Build Location)	
Code	Build Location
A	St. Thomas, Ontario
D	Santiago, Mexico
H	Mt. Holly, North Carolina

Table 7, VIN Position 11 (Build Location)

Vehicle Identification Numbering System

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VIN for Vehicles Built through April 30, 2000

IMPORTANT: See **Subject 060** for the vehicle identification numbering system for vehicles built May 1, 2000, or later.

Federal Motor Vehicle Safety Standard 115 specifies that all vehicles sold in the U.S. be assigned a 17-character Vehicle Identification Number (VIN). Using a combination of letters and numerals, the VIN defines the manufacturer, model, and major characteristics of the vehicle. See **Table 1** for the character positions of a typical Sterling VIN, 480ALEBDXWA345678.

The VIN can be found on the Vehicle Specification Decal (see the driver's manual for decal location) and stamped on the outside of the left-hand frame rail about 24 to 40 inches (60 to 100 cm) aft of the front axle centerline. On Sterling vehicles built before July 1998, the VIN is stamped on the frame rail near the front axle position.

IMPORTANT: A new VIN-code structure will be used for all vehicles built after April 30, 2000. Character positions 1 through 4 and 9 through 17 are nearly the same in both versions, but positions 5 through 8 have been assigned slightly different parameters. As a result, the build date of a vehicle must be determined before the VIN can be decoded.

For all vehicles, a check digit (9th character) is determined by assignment of weighted values to the other 16 characters. These weighted values are processed through a series of equations designed to check validity of the VIN and to detect VIN alteration.

NOTE: Always specify the VIN when ordering parts.

Seventeen-Character Vehicle Identification Number (VIN)									
Typical VIN	4 8 0	A	L	E B	D	X	W	A	345678
Character Position	1, 2, 3	4	5	6, 7	8	9	10	11	12 thru 17
Decoding Table *	Table 2	Table 3	Table 4	Table 5	Table 6	—	Table 7	Table 8	—
Code Description									
Manufacturer, Make, Vehicle Type									
Chassis, Front Axle Position, Brakes									
Vehicle Model Series, Cab									
Engine Model, Horsepower Range									
Gross Vehicle Weight Rating (GVWR)									
Check Digit									
Vehicle Model Year									
Plant of Manufacture									
Production Number									

* For corresponding decoding information, see the applicable tables in this subject.

Table 1, Seventeen-Character Vehicle Identification Number (VIN)

VIN Positions 1, 2, and 3 (Manufacturer, Make, Vehicle Type)			
Code	Vehicle Manufacturer	Vehicle Make	Vehicle Type
2FW	Sterling, Canada-built	Sterling	Truck-Tractor
2FZ	Sterling, Canada-built	Sterling	Incomplete Vehicle
480	Sterling, U.S.-built	Sterling	Truck-Tractor