



*Run Smart™*

## **CENTURY CLASS TRUCKS WORKSHOP MANUAL**

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**Models: Argosy® COE  
C112 Conventional  
C120 Conventional  
Coronado®**

## 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 Freightliner Trucks or the component manufacturer.

Maintenance schedules and additional service information are included in the *Century Class Trucks Maintenance Manual*.

**IMPORTANT:** Descriptions and specifications in this manual were in effect at the time of printing. Freightliner 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](http://www.Daimler-TrucksNorthAmerica.com) and [www.FreightlinerTrucks.com](http://www.FreightlinerTrucks.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.

<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, specifications, and troubleshooting.
<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>	<p>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.</p> <p><b>IMPORTANT:</b> Before using a particular service bulletin, check the current service bulletin validity list to be sure the bulletin is valid.</p>
<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 AccessFreightliner.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 Freightliner, Sterling, 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 AccessFreightliner.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 a *Century Class Trucks Workshop Manual* page, see [Fig. 1](#).

**A** ↓  
Threaded Fasteners

**B** ↓  
**00.05**

**C** ↓  
General Instructions ←

**D** ↑  
Century Class Trucks Workshop Manual, January 1996

**E** ↑

**F** ↑  
**G** ↑  
100/1

11/20/95

f020045

**A. Section Title**  
**B. Section Number** (made up of the Group Number—first two digits, followed by a sequence number—last two digits)  
**C. Subject Title**  
**D. Manual Title**  
**E. Release (Supplement) Date**  
**F. Subject Number**  
**G. Subject Page Number**

**Fig. 1, Example of a Century Class Trucks Workshop 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
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
90 .....	Fire Suppression Systems
91 .....	Seats and Restraint Systems
98 .....	Paint

## List of Abbreviations

The following is a list of definitions for abbreviations and symbols used in Freightliner publications.

<b>A</b> .....	amperes	<b>BBC</b> .....	bumper-to-back-of-cab	<b>CUM</b> .....	Cummins
<b>AAVA</b> .....	auxiliary air valve assembly	<b>BHM</b> .....	bulkhead module	<b>CVSA</b> .....	Commercial Vehicle Safety Alliance
<b>ABS</b> .....	antilock braking system	<b>BOC</b> .....	back-of-cab	<b>CWS</b> .....	collision warning system
<b>ABS</b> .....	acrylonitrile-butadiene-styrene	<b>BOM</b> .....	bill of material	<b>DC</b> .....	direct current
<b>A/C</b> .....	air conditioner	<b>BTDC</b> .....	before top dead center	<b>DCA</b> .....	diesel coolant additive
<b>AC</b> .....	alternating current	<b>Btu(s)</b> .....	British thermal unit(s)	<b>DCDL</b> .....	driver-controlled differential lock
<b>acc</b> .....	accessories	<b>C</b> .....	common (terminal)	<b>DDA</b> .....	Detroit Diesel Allison (obs)
<b>ACM</b> .....	aftertreatment control module	<b>CAC</b> .....	charge air cooler	<b>DDC</b> .....	Detroit Diesel Corporation
<b>ACPU</b> .....	air conditioning protection unit	<b>CAN</b> .....	controller area network	<b>DDDL</b> .....	Detroit Diesel Diagnostic Link
<b>ADLO</b> .....	auto-disengagement lockout	<b>CARB</b> .....	California Air Resources Board	<b>DDE</b> .....	Detroit Diesel Engines
<b>AGM</b> .....	absorbed glass mat	<b>CAT</b> .....	Caterpillar	<b>DDEC</b> .....	Detroit Diesel Electronic (engine) Control
<b>AGS</b> .....	automated gear shift	<b>CB</b> .....	circuit breaker	<b>DDR</b> .....	diagnostic data reader
<b>AG2</b> .....	Aluminum Generation 2	<b>CB</b> .....	citizens' band	<b>DDU</b> .....	driver display unit
<b>a.m.</b> .....	<i>ante meridiem</i> (midnight to noon)	<b>CBE</b> .....	cab behind engine	<b>def</b> .....	defrost
<b>AM</b> .....	amplitude modulation	<b>CCA</b> .....	cold cranking amperes	<b>DEF</b> .....	diesel exhaust fluid
<b>amp(s)</b> .....	ampere(s)	<b>CCR</b> .....	California Code of Regulations	<b>DFI</b> .....	direct fuel injection
<b>AMT</b> .....	automated mechanical transmission	<b>CD-ROM</b> ..	compact-disc/read-only memory	<b>DGPS</b> .....	differential global positioning system
<b>AMU</b> .....	air management unit	<b>CDTC</b> .....	constant discharge temperature control	<b>DHD</b> .....	dealer help desk
<b>ANSI</b> .....	American National Standards Institute	<b>CEL</b> .....	check-engine light	<b>dia.</b> .....	diameter
<b>API</b> .....	American Petroleum Institute	<b>CFC</b> .....	chlorofluorocarbons (refrigerant-12)	<b>DIAG</b> .....	diagnosis
<b>API</b> .....	application programming interface	<b>cfm</b> .....	cubic feet per minute	<b>DIP</b> .....	dual inline package (switch)
<b>ARI</b> .....	Air Conditioning and Refrigeration Institute	<b>CFR</b> .....	Code of Federal Regulations	<b>DIU</b> .....	driver interface unit
<b>ASA</b> .....	American Standards Association	<b>CGI</b> .....	clean gas induction	<b>DLA</b> .....	datalink adaptor
<b>ASF</b> .....	American Steel Foundries	<b>CGW</b> .....	central gateway	<b>DLM</b> .....	datalink monitor
<b>ASR</b> .....	automatic spin regulator	<b>CHM</b> .....	chassis module	<b>DLU</b> .....	data logging unit
<b>assy.</b> .....	assembly	<b>CIP</b> .....	cold inflation pressure	<b>DMM</b> .....	digital multimeter
<b>ASTM</b> .....	American Society for Testing and Materials	<b>CLDS</b> .....	cab load disconnect switch	<b>DOC</b> .....	diesel oxidation catalyst
<b>ATC</b> .....	automatic temperature control	<b>CLS</b> .....	coolant level sensor	<b>DOT</b> .....	Department of Transportation
<b>ATC</b> .....	automatic traction control	<b>cm</b> .....	centimeters	<b>DPF</b> .....	diesel particulate filter
<b>ATC</b> .....	automatic transmission control	<b>cm<sup>3</sup></b> .....	cubic centimeters	<b>DRL</b> .....	daytime running lights
<b>ATD</b> .....	aftertreatment device	<b>CMVSS</b> .....	Canadian Motor Vehicle Safety Standard	<b>DRM</b> .....	dryer reservoir module
<b>ATF</b> .....	automatic transmission fluid	<b>Co.</b> .....	company	<b>DSM</b> .....	district service manager
<b>ATS</b> .....	aftertreatment system	<b>COE</b> .....	cab over engine	<b>DTC</b> .....	diagnostic trouble code
<b>attn</b> .....	attention	<b>Corp.</b> .....	corporation	<b>DTC</b> .....	discharge temperature control
<b>aux.</b> .....	auxiliary	<b>CPC</b> .....	common powertrain controller	<b>DTNA</b> .....	Daimler Trucks North America
<b>av</b> .....	<i>avoirdupois</i> (British weight system)	<b>CPU</b> .....	central processing unit	<b>DVOM</b> .....	digital volt/ohm meter
<b>AWD</b> .....	all-wheel drive	<b>CRT</b> .....	cathode ray tube	<b>ea.</b> .....	each
<b>AWG</b> .....	American wire gauge	<b>cSt</b> .....	centistokes (unit of measurement for describing the viscosity of general liquids)	<b>EBS</b> .....	electronic braking system
<b>AWS</b> .....	American Welding Society	<b>cu ft</b> .....	cubic feet	<b>ECA</b> .....	electric clutch actuator
<b>BAT</b> .....	battery	<b>cu in</b> .....	cubic inches	<b>ECAP</b> .....	electronic control analyzer programmer
				<b>ECAS</b> .....	electronically controlled air suspension

## List of Abbreviations

<b>ECI</b> .....	electronically controlled injection	<b>FM</b> .....	frequency modulation	<b>HVLP</b> .....	high velocity, low pressure
<b>ECL</b> .....	engine coolant level	<b>FMCSA</b> ....	Federal Motor Carrier Safety Administration	<b>H/W</b> .....	hardware
<b>ECM</b> .....	electronic control module	<b>FMEA</b> .....	failure mode effects analysis	<b>Hz</b> .....	hertz
<b>ECT</b> .....	engine coolant temperature	<b>FMI</b> .....	failure mode indicator	<b>IAD</b> .....	interaxle differential
<b>ECU</b> .....	electronic control unit	<b>FMSI</b> .....	Friction Materials Standards Institute	<b>ICS</b> .....	integrated child seat
<b>EDM</b> .....	electronic data monitor	<b>FMVSS</b> ....	Federal Motor Vehicle Safety Standard	<b>ICU</b> .....	instrumentation control unit
<b>EEPROM</b> ..	electrically erasable programmable read-only memory	<b>FRP</b> .....	fiberglass reinforced plastic	<b>i.d.</b> .....	inside diameter
<b>EFG</b> .....	electric fuel gauge	<b>FSA</b> .....	field service authorization	<b>ID</b> .....	identification
<b>EFPA</b> .....	electronic foot pedal assembly	<b>FSM</b> .....	fleet service manager	<b>IFI</b> .....	Industrial Fasteners Institute
<b>EGR</b> .....	exhaust gas recirculation	<b>ft</b> .....	feet	<b>IFS</b> .....	independent front suspension
<b>ELC</b> .....	extended-life coolant	<b>ft<sup>3</sup></b> .....	cubic feet	<b>IGN</b> .....	ignition
<b>EMC</b> .....	electromagnetic compatibility	<b>ft<sup>3</sup>/min</b> .....	cubic feet per minute	<b>ILB</b> .....	intelligent lightbar
<b>EMI</b> .....	electromagnetic interference	<b>FTL</b> .....	Freightliner	<b>ILO</b> .....	<i>in lieu of</i> (in the place of)
<b>EOA</b> .....	electric over air	<b>F.U.E.L.</b> ....	fuel usage efficiency level	<b>in</b> .....	inches
<b>EP</b> .....	extreme pressure (describes an antiwear agent added to some lubricants)	<b>g</b> .....	grams	<b>in<sup>3</sup></b> .....	cubic inches
<b>EPA</b> .....	Environmental Protection Agency	<b>gal</b> .....	gallons	<b>Inc.</b> .....	incorporated
<b>EPS</b> .....	engine position sensor	<b>GAWR</b> .....	gross axle weight rating	<b>inH<sub>2</sub>O</b> .....	inches of water
<b>ESC</b> .....	electronic stability control	<b>GHG</b> .....	greenhouse gas	<b>inHg</b> .....	inches of mercury
<b>ESC</b> .....	enhanced stability control	<b>GHG14</b> ....	greenhouse gas and fuel efficiency regulations	<b>I/O</b> .....	input/output
<b>ESD</b> .....	electrostatic discharge	<b>GL</b> .....	gear lubricant	<b>IP</b> .....	instrument panel
<b>ESS</b> .....	engine syncro shift (transmission)	<b>GND</b> .....	ground	<b>ISO</b> .....	International Organization for Standardization
<b>etc.</b> .....	<i>et cetera</i> (and so forth)	<b>gpm</b> .....	gallons per minute	<b>IVS</b> .....	idle validation switch
<b>ETEC</b> .....	electronic truck engine control	<b>GPS</b> .....	global positioning system	<b>k</b> .....	kilo (1000)
<b>EUI</b> .....	electronic unit (fuel) injectors	<b>GVWR</b> .....	gross vehicle weight rating	<b>kg</b> .....	kilograms
<b>EVA</b> .....	electronic vibration analyzer	<b>HBED</b> .....	hard-braking event data	<b>km</b> .....	kilometers
<b>EXM</b> .....	(chassis) expansion module	<b>HCM</b> .....	hybrid control module	<b>km/h</b> .....	kilometers per hour
<b>E85</b> .....	85% ethanol fuel	<b>HCOE</b> .....	high cab over engine	<b>kPa</b> .....	kilopascals
<b>FAS</b> .....	Freightliner air suspension	<b>HCU</b> .....	hydraulic control unit	<b>kW</b> .....	kilowatts
<b>FCCC</b> .....	Freightliner Custom Chassis Corporation	<b>HD</b> .....	heavy-duty	<b>L</b> .....	liters
<b>FCU</b> .....	forward control unit	<b>HDU</b> .....	hybrid drive unit	<b>lb</b> .....	pounds
<b>FET</b> .....	field effect transistor	<b>HEPA</b> .....	high-efficiency particulate air (filter)	<b>LBCU</b> .....	lightbar control unit
<b>Fig.</b> .....	figure	<b>HEST</b> .....	high exhaust system temperature	<b>lbf-ft</b> .....	pounds force feet
<b>fl oz</b> .....	fluid ounces	<b>HEV</b> .....	hybrid electric vehicle	<b>lbf-in</b> .....	pounds force inches
<b>FLA</b> .....	post-1984 advancements Freightliner COE	<b>HFC</b> .....	hydrogenated fluorocarbons (refrigerant-134a)	<b>LCD</b> .....	liquid crystal display
<b>FLB</b> .....	enhanced Freightliner FLA COE	<b>hp</b> .....	horsepower	<b>LCOE</b> .....	low cab over engine
<b>FLC</b> .....	steel-cab Freightliner 112 Conventional	<b>hp</b> .....	high pressure	<b>LED</b> .....	light-emitting diode
<b>FLD</b> .....	post-1984 advancements Freightliner 112/120 aluminum-cab Conventional	<b>HRC</b> .....	Rockwell "C" hardness	<b>LFL</b> .....	lower flammability limit
<b>FLR</b> .....	forward-looking radar	<b>hr(s)</b> .....	hour(s)	<b>LH</b> .....	left-hand
		<b>HSA</b> .....	hill start aid	<b>LHD</b> .....	left-hand drive
		<b>HSD</b> .....	high-side driver	<b>LH DR</b> .....	left-hand-drive
		<b>htr.</b> .....	heater	<b>LHK</b> .....	liters per hundred kilometers
		<b>HVAC</b> .....	heating, ventilating, and air conditioning	<b>LHS</b> .....	low-hydrogen steel
				<b>LIN</b> .....	Local Interconnect Network
				<b>LLC</b> .....	limited liability company
				<b>L/min</b> .....	liters per minute
				<b>LNG</b> .....	liquefied natural gas
				<b>LPG</b> .....	liquefied petroleum gas



## List of Abbreviations

<b>LPG</b> .....	liquid propane gas	<b>NO</b> .....	normally open (terminal or switch)	<b>POE</b> .....	polyol ester
<b>LPI</b> .....	liquid propane injection	<b>NOAT</b> .....	Nitrited Organic Acid Technology	<b>PRD</b> .....	pressure relief device
<b>LPR</b> .....	low pressure reservoir	<b>NOx</b> .....	nitrogen oxides	<b>PRD</b> .....	product requirements document
<b>LRR</b> .....	low-rolling resistance	<b>no.</b> .....	number	<b>PSA</b> .....	pressure-sensitive adhesive
<b>LSD</b> .....	low-side driver	<b>NPT</b> .....	national pipe thread	<b>PSG</b> .....	pressure sensor governor
<b>LVD</b> .....	low-voltage disconnect	<b>NPTF</b> .....	national pipe thread fitting	<b>psi</b> .....	pounds per square inch
<b>m</b> .....	meters	<b>NT</b> .....	nylon tube or nylon tubing	<b>psia</b> .....	pounds per square inch, atmosphere
<b>max.</b> .....	maximum	<b>NTSB</b> .....	National Transportation Safety Board	<b>psig</b> .....	pounds per square inch, gauge
<b>M-B</b> .....	Mercedes-Benz	<b>OAT</b> .....	Organic Acid Technology	<b>pt</b> .....	pints
<b>MCM</b> .....	motor control module	<b>OBd(s)</b> .....	on-board diagnostic(s)	<b>PTCM</b> .....	pressure time control module
<b>MESA</b> .....	Mining Enforcement Safety Act	<b>obs</b> .....	obsolete	<b>PTO</b> .....	power takeoff
<b>mfr.</b> .....	manufacturer	<b>OC</b> .....	open circuit	<b>PTP</b> .....	powertrain protection
<b>mi</b> .....	miles	<b>OCV</b> .....	open circuit voltage	<b>PTPDM</b> .....	powertrain power distribution module
<b>MID</b> .....	message identifier	<b>o.d.</b> .....	outside diameter	<b>pvc</b> .....	polyvinyl chloride
<b>MIL</b> .....	malfunction indicator lamp (light)	<b>O.D.</b> .....	overdrive	<b>PWM</b> .....	pulse width modulation
<b>MIL</b> .....	military specification	<b>OEM</b> .....	original equipment manufacturer	<b>pwr</b> .....	power
<b>min.</b> .....	minutes	<b>OPD</b> .....	overflow protection device	<b>qt</b> .....	quarts
<b>min.</b> .....	minimum	<b>OSHA</b> .....	Occupational Safety and Health Administration	<b>qty.</b> .....	quantity
<b>misc.</b> .....	miscellaneous	<b>oz</b> .....	ounces	<b>R &amp; O</b> .....	rust inhibitors and oxidants
<b>mL</b> .....	milliliters	<b>ozf-in</b> .....	ounces force inches	<b>R-12</b> .....	refrigerant-12 (CFC)
<b>mm</b> .....	millimeters	<b>p</b> .....	positive (front axle wheel alignment specification)	<b>R-134a</b> .....	refrigerant-134a (HFC)
<b>mod.</b> .....	module	<b>PACE</b> .....	programmable electronically controlled engine	<b>RAM</b> .....	random access memory
<b>mpg</b> .....	miles per gallon	<b>PAG</b> .....	polyalkylene glycol (oil)	<b>RC</b> .....	reserve capacity
<b>mph</b> .....	miles per hour	<b>parm</b> .....	parameter	<b>recirc.</b> .....	recirculation
<b>MSF</b> .....	modular switch field	<b>PAS</b> .....	passenger advisory system	<b>Ref(s)</b> .....	reference(s)
<b>MMT</b> .....	methylcyclopentadienyl manganese tricarbonyl	<b>PC</b> .....	personal computer	<b>regen</b> .....	regeneration
<b>MSHA</b> .....	Mining Safety and Health Administration	<b>PCB</b> .....	printed circuit board	<b>RELS</b> .....	reduced engine load at stop
<b>MVDA</b> .....	Motor Vehicle Dealers Association	<b>PDC(s)</b> .....	parts distribution center(s)	<b>RFI</b> .....	radio frequency interference
<b>n</b> .....	negative (front axle wheel alignment specification)	<b>PDI</b> .....	pre-delivery inspection	<b>RH</b> .....	right-hand
<b>N</b> .....	nitrogen	<b>PDM</b> .....	power distribution module	<b>RHD</b> .....	right-hand drive
<b>N/A</b> .....	not applicable	<b>PEC</b> .....	power electronics carrier	<b>RH DR</b> .....	right-hand-drive
<b>N-cm</b> .....	Newton-centimeters	<b>PEEC</b> .....	programmable electronic engine control	<b>R/I</b> .....	removal and installation
<b>NC</b> .....	normally closed (terminal or switch)	<b>PID</b> .....	parameter identifier	<b>RMA</b> .....	return material authorization
<b>NCG</b> .....	noncondensable gases	<b>PKP</b> .....	Purple-K powder	<b>ROM</b> .....	read-only memory
<b>NHTSA</b> .....	National Highway Traffic Safety Administration	<b>PLC</b> .....	power line carrier	<b>rpm</b> .....	revolutions per minute
<b>NIOSH</b> .....	National Institute for Occupational Safety and Health	<b>PLD</b> .....	<i>Pumpe-Linie-Düse</i> (pump-line-nozzle)	<b>R/R</b> .....	removal and replacement
<b>NITE</b> .....	no idle thermal environment	<b>PNDB</b> .....	power-net distribution box	<b>RSA</b> .....	roll-stability advisor
<b>NLA</b> .....	no longer available	<b>PM</b> .....	particulate matter	<b>RSG</b> .....	road speed governor
<b>NLGI</b> .....	National Lubricating Grease Institute	<b>p.m.</b> .....	<i>post meridiem</i> (noon to midnight)	<b>RSM</b> .....	regional service manager
<b>N-m</b> .....	Newton-meters	<b>p/n</b> .....	part number	<b>RTS</b> .....	ready-to-spray
		<b>PO</b> .....	purchase order	<b>RTV</b> .....	room temperature vulcanizing
				<b>RV</b> .....	recreational vehicle
				<b>SA</b> .....	source address
				<b>S-ABA</b> .....	self-setting automatic brake adjusters

## List of Abbreviations

<b>SAE</b> .....	Society of Automotive Engineers	<b>°C</b> .....	degrees Celsius (centigrade)
<b>SB</b> .....	service bulletin	<b>°F</b> .....	degrees Fahrenheit
<b>SBT</b> .....	seat back thickness	<b>#</b> .....	number
<b>SBW</b> .....	shift-by-wire	<b>%</b> .....	percent
<b>SCA(s)</b> ....	Supplemental Coolant Additive(s)	<b>&amp;</b> .....	and
<b>SCR</b> .....	selective catalytic reduction	<b>©</b> .....	copyright
<b>SCU</b> .....	system control unit (speedometer)	<b>™</b> .....	trademark
<b>SD</b> .....	severe-duty	<b>®</b> .....	registered trademark
<b>SDU</b> .....	step deployment unit		
<b>SEL</b> .....	shutdown engine light		
<b>SEM</b> .....	switch expansion module		
<b>SEO</b> .....	stop engine override		
<b>SHM</b> .....	switch hub module		
<b>SI</b> .....	service information		
<b>SI</b> .....	<i>Système International</i>		
<b>SID</b> .....	subsystem identifier		
<b>SM</b> .....	system malfunction		
<b>SMC</b> .....	sheet molded compound		
<b>S/N</b> .....	serial number		
<b>SOC</b> .....	state-of-charge		
<b>SPACE</b> ....	seat pretensioner activation for crash survival enhancement		
<b>SPG</b> .....	special purpose grease		
<b>SPN</b> .....	suspect parameter number		
<b>sq in</b> .....	square inches		
<b>SRP</b> .....	seating reference point		
<b>SRS</b> .....	supplemental restraint system		
<b>SRS</b> .....	synchronous reference sensor		
<b>SRT</b> .....	standard repair time		
<b>SSD</b> .....	side sensor display		
<b>SSID</b> .....	smart switch identification		
<b>SST</b> .....	stainless steel		
<b>std.</b> .....	standard		
<b>S/W</b> .....	software		
<b>SW</b> .....	switch		
<b>TAM</b> .....	thermocouple amplifier module		
<b>TBB</b> .....	Thomas Built Buses		
<b>TBS</b> .....	turbo boost sensor		
<b>TCM</b> .....	transmission control module		
<b>TCU</b> .....	transmission control unit		
<b>TDC</b> .....	top dead center		
<b>TDR</b> .....	technician diagnostic routine		
<b>TEM</b> .....	truck equipment manufacturer		
<b>temp</b> .....	temperature		
<b>TIG</b> .....	tungsten inert gas		
<b>TIR</b> .....	total indicator reading		
<b>TMC</b> .....	Technology and Maintenance Council		
<b>TPMS</b> .....	tire pressure monitoring system		
<b>TPS</b> .....	thermal protection switch		
<b>TPS</b> .....	throttle position sensor		
<b>TRS</b> .....	timing reference sensor		
<b>TSO</b> .....	truck specification order		
<b>TSU</b> .....	transmission shift unit		
<b>TXV</b> .....	thermal expansion valve		
<b>U.D.</b> .....	underdrive		
<b>ULSD</b> .....	ultralow-sulfur diesel		
<b>UNC</b> .....	unified national coarse		
<b>UNF</b> .....	unified national fine		
<b>U.S.</b> .....	United States		
<b>U.S.A.</b> .....	United States of America		
<b>USC</b> .....	United States customary (measures)		
<b>V</b> .....	volts		
<b>VCU</b> .....	vehicle control unit		
<b>VDC</b> .....	vehicle data computer		
<b>Vdc</b> .....	volts, direct current		
<b>VIMS</b> .....	vehicle information management system		
<b>VIN</b> .....	vehicle identification number		
<b>VIP</b> .....	vehicle instrumentation and protection (Kysor)		
<b>VIW</b> .....	vehicle interface wiring (connector)		
<b>VOC</b> .....	volatile organic compounds		
<b>VOM</b> .....	volt-ohmmeter		
<b>VRS</b> .....	variable resistance sensor		
<b>VSG</b> .....	variable speed governor		
<b>VSS</b> .....	vehicle speed sensor		
<b>VSU</b> .....	vehicle security unit		
<b>WB</b> .....	wire braid		
<b>WI</b> .....	work instructions		
<b>WIF</b> .....	water-in-fuel		
<b>WOT</b> .....	wide open throttle		
<b>-</b> .....	minus or negative		
<b>+</b> .....	plus or positive		
<b>±</b> .....	plus-or-minus		
<b>&gt;</b> .....	greater than		
<b>&lt;</b> .....	less than		
<b>x</b> .....	by (used in fastener size descriptions)		
<b>"</b> .....	inches		
<b>°</b> .....	degrees (of an angle)		

## General Information

U.S. Customary to Metric			Metric to U.S. Customary		
When You Know	Multiply By	To Get	When You Know	Multiply By	To Get
<b>Length</b>					
inches (in)	25.4	millimeters (mm)	0.03937		inches (in)
inches (in)	2.54	centimeters (cm)	0.3937		inches (in)
feet (ft)	0.3048	meters (m)	3.281		feet (ft)
yards (yd)	0.9144	meters (m)	1.094		yards (yd)
miles (mi)	1.609	kilometers (km)	0.6215		miles (mi)
<b>Area</b>					
square inches (in <sup>2</sup> )	645.16	square millimeters (mm <sup>2</sup> )	0.00155		square inches (in <sup>2</sup> )
square inches (in <sup>2</sup> )	6.452	square centimeters (cm <sup>2</sup> )	0.15		square inches (in <sup>2</sup> )
square feet (ft <sup>2</sup> )	0.0929	square meters (m <sup>2</sup> )	10.764		square feet (ft <sup>2</sup> )
<b>Volume</b>					
cubic inches (in <sup>3</sup> )	16387.0	cubic millimeters (mm <sup>3</sup> )	0.000061		cubic inches (in <sup>3</sup> )
cubic inches (in <sup>3</sup> )	16.387	cubic centimeters (cm <sup>3</sup> )	0.06102		cubic inches (in <sup>3</sup> )
cubic inches (in <sup>3</sup> )	0.01639	liters (L)	61.024		cubic inches (in <sup>3</sup> )
fluid ounces (fl oz)	29.54	milliliters (mL)	0.03381		fluid ounces (fl oz)
pints (pt)	0.47318	liters (L)	2.1134		pints (pt)
quarts (qt)	0.94635	liters (L)	1.0567		quarts (qt)
gallons (gal)	3.7854	liters (L)	0.2642		gallons (gal)
cubic feet (ft <sup>3</sup> )	28.317	liters (L)	0.03531		cubic feet (ft <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	0.02832	cubic meters (m <sup>3</sup> )	35.315		cubic feet (ft <sup>3</sup> )
<b>Weight/Force</b>					
ounces (av) (oz)	28.35	grams (g)	0.03527		ounces (av) (oz)
pounds (av) (lb)	0.454	kilograms (kg)	2.205		pounds (av) (lb)
U.S. tons (t)	907.18	kilograms (kg)	0.001102		U.S. tons (t)
U.S. tons (t)	0.90718	metric tons (t)	1.1023		U.S. tons (t)
<b>Torque/Work Force</b>					
inch-pounds (lbf-in)	11.298	Newton-centimeters (N-cm)	0.08851		inch-pounds (lbf-in)
foot-pounds (lbf-ft)	1.3558	Newton-meters (N-m)	0.7376		foot-pounds (lbf-ft)
<b>Pressure/Vacuum</b>					
inches of mercury (inHg)	3.37685	kilo Pascals (kPa)	0.29613		inches of mercury (inHg)
pounds per square inch (psi)	6.895	kilo Pascals (kPa)	0.14503		pounds per square inch (psi)

When You Know	Subtract	Then Divide By	To Get	When You Know	Multiply By	Then Add	To Get
degrees Fahrenheit (°F)	32	1.8	degrees Celsius (°C)	degrees Celsius (°C)	1.8	32	degrees Fahrenheit (°F)

## Vehicle Receipt

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Prior to signing for vehicle delivery from a transporter company, the dealer is responsible for checking for transporter-related shortages or damages, and noting these discrepancies on the transporter's delivery receipt.

The dealer is also responsible for ensuring that the vehicle was built according to the Truck Sales Order/ Invoice.

Refer to Section 3 of the Daimler Trucks North America LLC *Warranty Manual* for details.

## Vehicle Storage

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There may be times when a vehicle is stored for long periods before customer delivery. To protect all vehicles from deterioration and weather, they must be properly maintained. Adequate protection and storage of new vehicles is the responsibility of the dealer.

**Claims arising from loss and damage to improperly stored vehicles will not be reimbursed.**

See Section 3 of the Daimler Trucks North America LLC *Warranty Manual* for instructions on storage of new vehicles.

## Pre-Delivery Information

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All pre-delivery inspections and services must be performed at an authorized Daimler Trucks North America LLC facility, assigned to fully qualified service personnel and recorded on the "New Vehicle Pre-Delivery Inspection" form.

Refer to Section 3 of the Daimler Trucks North America LLC *Warranty Manual* for details.

It is recommended the pre-delivery inspection be performed within 30 days of vehicle receipt.



## Hoses and Electrical Wiring Routing Standards

### Cooling System

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1. Cooling system hoses must clear all moving parts by a minimum of 1/4 inch (6 mm).
2. The 1-inch (25-mm) hose from the surge tank to the engine must be free of sumps and have allowance for engine torque.
3. All hoses from the engine hard pipes must be wrapped in convoluted tubing.
4. Hoses that are protected with convoluted tubing may be secured with tie straps to clear the inner fenders.
5. Cooling system hoses should not be twisted or kinked.
6. Cooling system hoses must be routed at least six inches (152 mm) from a heat source if the heat source does not have a heat shield. If a heat shield is provided, the hose must be routed at least three inches (76 mm) from the heat source.

### HVAC System

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1. Cushion clamps are required to support all A/C lines. Butterfly or figure-8 clamps (two cushion clamps) may be used to prevent rubbing or chafing.
2. Heater hoses that are protected with convoluted tubing may be fastened with tie straps. If not protected with convoluted tubing, only cushion clamps or butterfly clamps may be used for heater hoses.
3. A/C lines cannot be secured to air lines, fuel lines, or electrical wires.
4. HVAC hoses should be protected from damage by routing them away from hazards of heat, wheel splash (water, gravel, ice), human traffic, and moving parts of the vehicle.
5. HVAC hoses should be routed away from sharp points and edges (such as nuts, bolts, brackets, and frame rail edges), moveable parts, and sources of abrasion, cutting, pinching, or crushing.

NOTE: If hoses are covered with convoluted tubing, they may touch any of the above.

6. Hoses that are protected with convoluted tubing may come in contact with the bends on frame rails and filters.
7. HVAC hoses must be routed at least six inches (152 mm) from a heat source if the heat source does not have a heat shield. If a heat shield is provided, the hose must be routed at least three inches (76 mm) from the heat source.
8. All HVAC hoses must be routed so that regularly serviced components, such as fuel filters, fuel/water separators, oil filters, air filters, belts, and fill and drain plugs, are readily accessible for adjustment or replacement without the need to relocate or remove the hoses.
9. All A/C hoses in the engine compartment must have convoluted tubing.
10. If cushion clamps are used over convoluted tubing at existing clamp points, no additional tie straps or tape is needed.
11. When convoluted tubing is installed on the heater hose where it routes past the splash shield on the front right-hand side of the firewall, and if it uses existing clamps, no additional tie straps or tape is needed.

### Auxiliary Heater

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All auxiliary heater lines are deck-mounted hard piping with rubber hose at both ends. No additional tie straps are required.

### Engine Plumbing

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1. On vehicles equipped with the Cummins M-11 engine and power steering, no additional tie straps or tape are needed if convoluted tubing is installed on the power steering hose where it routes under the frame rail.
2. The engine oil pressure line should not rub or chafe against the Teflon® discharge line.

### Electrical Wiring

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1. Wires that are bundled together should be fastened at 8- to 12-inch (203- to 305-mm) intervals. If anchor clamps are more than 12 inches (305

## Hoses and Electrical Wiring Routing Standards

mm) apart, a tie strap must be used between the anchor clamps.

2. Bundles of wires that are located in an exposed area, such as under the cab or outside the frame rail, need to be fastened with heavy-duty cable ties.
3. Any wiring that will be exposed to water or heat must be covered with either loom or convoluted tubing. Loom or convoluted tubing need not butt up against Weather Pack® connectors.
4. Any wiring routed across the vehicle, on the engine crossmember, or across the rear of the engine, must be secured with a clamp or tie strap, and covered with either convoluted tubing or a loom.
5. Any wiring that may come into contact with sharp points and edges (such as nuts, bolts, brackets, and frame rail edges), moveable parts, and sources of abrasion, cutting, pinching, or crushing, must be protected by either a loom or convoluted tubing.
6. Unprotected breakouts (individual wires) of up to eight inches (203 mm) are acceptable as long as these wires are routed safely away from sharp points and edges, moveable parts, and sources of abrasion, cutting, pinching, or crushing.
7. Gray, flame-retardant convoluted tubing may be used to protect wiring in the cab or the chassis. Black nylon convoluted tubing may only be used in the chassis.
8. All wiring must be routed so that regularly serviced components, such as fuel filters, fuel/water separators, oil filters, air filters, belts, and fill and drain plugs, are readily accessible for adjustment or replacement without the need to relocate or remove any wiring.
9. In exposed locations, such as the road light harness near the headlights, loose loops of wire must be secured with tie straps.
10. All wiring should be routed a minimum of four inches (102 mm) from the exhaust. In situations where the wiring is less than four inches (102 mm) from the exhaust, a heat shield must be placed between the wiring and the exhaust.

## Battery Cables

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1. Battery cables must be routed along an unobstructed path from the starter to the battery box. The cables must **not** rub or chafe on brackets, tanks, air lines, or fuel lines.
2. Battery cables and electrical wiring cannot be tied or secured to fuel lines, discharge lines, or air lines.
3. Battery cables must have support brackets no more than 30 inches (762 mm) apart. Tie straps must be within six inches (152 mm) of both sides of the support brackets, and every 12 inches (305 mm) between the brackets.
4. Battery cables must have convoluted tubing from the frame bracket to the batteries, and from the frame bracket to the starter.

## Fuel Lines

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1. Fuel lines must not be clamped to A/C lines, battery cables, jumper cables, or any other electrical wiring.
2. Stand-off brackets or clamps may be used to prevent fuel lines from rubbing against the frame.
3. Fuel lines must be routed at least six inches (152 mm) from a heat source. If a heat shield is provided, the fuel line must be at least three inches (76 mm) from the heat source.
4. Fuel lines that are parallel may be fastened together. Fuel lines that cross or that rub on metal, plastic, or electrical parts, need to be separated with butterfly clamps.

## Chassis Air Lines and Brake Hoses

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1. Hoses may come in contact with each other if they are parallel, or if they are bundled together.
2. If the hoses lie on the curve or flat surface of a bracket or crossmember, they do not need convoluted tubing.
3. Brake hoses may be clamped at the top of the axle housing, and touch or lie against the axle housing in its path to the brake chamber as this assembly moves together.

## Hoses and Electrical Wiring Routing Standards

4. Brake hoses must have slack between the last clamping point on the frame rail and the brake chamber to allow for full range of suspension travel.
5. Brake hoses should have butterfly clamps at breakout points.
6. Air lines and brake hoses that are bundled together should be fastened at 8- to 12-inch (203- to 305-mm) intervals. If anchor clamps are more than 12 inches (305 mm) apart, a tie strap must be used between the anchor clamps. Tie straps may be closer than 12 inches (305 mm) apart.
7. Hoses or lines that may come into contact with the sharp edge of a bracket or frame rail are to be protected by convoluted tubing.
8. Air lines and brake hoses that are parallel may be fastened together. Air lines and brake hoses that cross or that rub on metal, plastic, or electrical parts need to be separated with butterfly clamps.
9. Nylon or STX (wire braid) chassis air lines may be fastened together to prevent rubbing, as long as the lines are stationary.



## 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 Freightliner VIN, 1FUYSTEBXVPA99999.

The VIN can be found on the Vehicle Specification Decal (see the driver's manual for decal location) and stamped on the left frame rail over the front axle about 2 inches (50 mm) from the top of the web or on the top flange of the left frame rail at frame station 30.

**NOTE:** For Freightliner vehicles assembled and sold in Mexico, the VIN appears on a plate or label attached to the driver's door. Also, a data card placed in the glove box shows the Mexican

VIN as the "CHASSIS" number. The "CABIN" number is part of the Freightliner VIN, the last six digits of which are the Freightliner serial number.

**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	1 F U	Y	S	T E	B	X	V	P	A 9 9 9 9 9
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	—
<b>Code Description</b>									
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
1FU	Freightliner, U.S.A.	Freightliner	Truck-Tractor

## 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
1FV	Freightliner, U.S.A.	Freightliner	Incomplete Vehicle
2FU	Freightliner, Canada	Freightliner	Truck-Tractor
2FV	Freightliner, Canada	Freightliner	Incomplete Vehicle
3FE	M-B, Mexico (before April 1996)	Freightliner	Truck-Tractor
3FF	M-B, Mexico (before April 1996)	Freightliner	Incomplete Vehicle
3AK	M-B, Mexico (after April 1996)	Freightliner	Truck-Tractor
3AL	M-B, Mexico (after April 1996)	Freightliner	Incomplete Vehicle
AFV	M-B, South Africa	Freightliner	Truck
KFB	AIL, Israel	Freightliner	Truck
RSA	NAI, Saudi Arabia	Freightliner	Incomplete Vehicle
RSB	NAI, Saudi Arabia	Freightliner	Truck-Tractor

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

VIN Position 4 (Chassis, Front Axle Position, Brakes)			
Code	Chassis	Front Axle Position	Brakes
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
	10 x 6 Truck †	Setback	Air
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
7	Glider	Setback	Air
8	Glider	Forward	Air
9	4 x 2 Truck	Setback	Air/Hydraulic
0	Glider	Setback	Air

\* Starting August 1998.

† Through July 1998; included in code R starting August 1998.

Table 3, VIN Position 4 (Chassis, Front Axle Position, Brakes), January 18, 1988 through April 30, 2000

## VIN for Vehicles Built through April 30, 2000

VIN Position 5 (Model Series, Cab)	
Code	Vehicle Model, Cab
A	FLA High COE
B	FLB High COE
C	120 Conventional XL
D	FLD120 Conventional, Highway
E	FL50 Short Conventional
F	FLD120SD Conventional, Construction
G	FL60 Short Conventional
H	FL70 Short Conventional
J	FL80 Short Conventional
L	112 Conv., Alum. Cab, Hwy., 48RR94MY *
	Argosy High COE
M	120 Conventional, Military
N	Century Class 112 Conventional
P	120 Conv., Alum. Cab, Hwy., 48RR94MY
	Columbia 120 Conventional
R	112 Conventional, Steel Cab, Hwy., RH Drive
S	Century Class 120 Conventional
T	High COE (through 88MY)
	FL112 Conventional
U	120 Conventional XL, 48RR94MY

VIN Position 5 (Model Series, Cab)	
Code	Vehicle Model, Cab
V	MB60 Short Conventional (to 95MY)
	Legacy FL112 (00MY)
W	FC80 Freightliner Cargo COE
X	MB70 Short Conventional (to 97MY)
	Legacy FLD120 (00MY)
Y	MB80 Short Conventional (through 98MY)
Z	112 Conventional, Steel Cab, Highway
1	FLC112 Conv., Steel Cab, Constr. (to 98MY)
2	FLC120 Conventional (to 91MY)
	FC60 Freightliner Cargo COE
3	FLD112 Conventional, Alum. Cab, Highway
4	Low COE, Aluminum Cab
5	MB50 Short Conventional
6	FLD112SD Conv., Alum. Cab, Construction
7	FLD120 Conventional, SilverAero (91MY)
	FC70 Freightliner Cargo COE
8	FL106 Short Conventional
9	RIV

\* MY = Model Year

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

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

# 00.04

## Vehicle Identification Numbering System

### 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
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
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