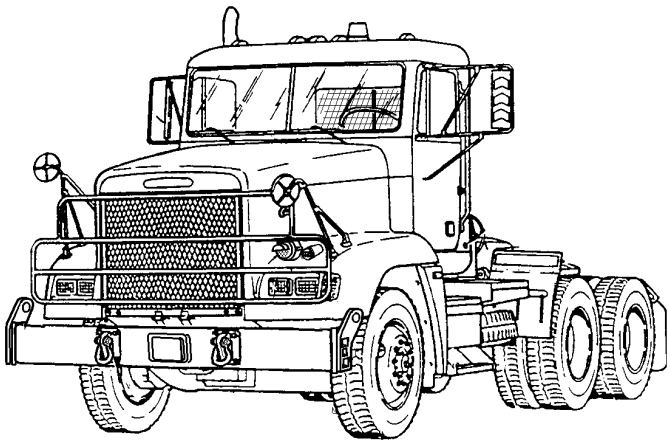
TM 9-2320-302-34

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

FOR

TRUCK, TRACTOR, LINE HAUL: 52,000 GVWR, 6 X 4, M915A3 (NSN 2320-01-432-4847)



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HEADQUARTERS, DEPARTMENT OF THE ARMY

May 2001

TECHNICAL MANUAL
TM 9-2320-302-34

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 28 May 2001

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TRUCK, TRACTOR, LINE HAUL:
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(NSN 2320-01-432-4847)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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Table of Contents

Page Number

Warning Summary . . . . . a
How to Use This Manual. v

CHAPTER 1 INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

WP 0001 00 General Information 0001 00-1
WP 0002 00 Equipment Description and Data 0002 00-1
WP 0003 00 Theory of Operation. 0003 00-1

CHAPTER 2 DIRECT SUPPORT AND GENERAL SUPPORT TROUBLESHOOTING

WP 0004 00 Troubleshooting Introduction. 0004 00-1
WP 0005 00 Troubleshooting Symptom Index. 0005 00-1
WP 0006 00 Engine Troubleshooting 0006 00-1
WP 0007 00 Transmission Troubleshooting. 0007 00-1
WP 0008 00 Steering System Troubleshooting 0008 00-1
WP 0009 00 Air Conditioning System Troubleshooting and Testing 0009 00-1

CHAPTER 3 DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

WP 0010 00 Power Pack Replacement 0010 00-1
WP 0011 00 Front Engine Mount Adapter and Support Replacement 0011 00-1
WP 0012 00 Rear Engine Mounts Replacement 0012 00-1

Table of Contents - Continued

		Page Number
WP 0013 00	Fan Drive Support Replacement	0013 00-1
WP 0014 00	Air Intake Manifold Replacement	0014 00-1
WP 0015 00	Exhaust Manifold Replacement	0015 00-1
WP 0016 00	Rocker Arm Cover Replacement	0016 00-1
WP 0017 00	Breather Tube Replacement	0017 00-1
WP 0018 00	Cylinder Head Replacement	0018 00-1
WP 0019 00	Gear Case Cover Replacement	0019 00-1
WP 0020 00	Vibration Damper Replacement	0020 00-1
WP 0021 00	Accessory Drive Replacement	0021 00-1
WP 0022 00	Engine Retarder Maintenance	0022 00-1
WP 0023 00	Crankshaft Rear Oil Seal Replacement	0023 00-1
WP 0024 00	Flywheel Housing Replacement	0024 00-1
WP 0025 00	Flex Plate Maintenance	0025 00-1
WP 0026 00	Camshaft and Bearings Replacement	0026 00-1
WP 0027 00	Rocker Arm Assemblies Maintenance	0027 00-1
WP 0028 00	Oil Pan Maintenance	0028 00-1
WP 0029 00	Oil Pump Maintenance	0029 00-1
WP 0030 00	Oil Pressure Relief and Regulator Valves Replacement	0030 00-1
WP 0031 00	Crankshaft Front Oil Seal Replacement	0031 00-1
WP 0032 00	Cylinder Head Repair	0032 00-1
WP 0033 00	Crankshaft Replacement	0033 00-1
WP 0034 00	Camshaft Drive Gear Maintenance	0034 00-1
WP 0035 00	Gear Housing Assembly Replacement	0035 00-1
WP 0036 00	Cylinder Block Assembly Repair	0036 00-1
WP 0037 00	Bull/Idler Gear Replacement	0037 00-1
WP 0038 00	Adjustable Idler Gear Replacement	0038 00-1
WP 0039 00	Accessory Drive Repair	0039 00-1
WP 0040 00	Cylinder Block Pressure Testing	0040 00-1
WP 0041 00	Piston and Cylinder Assembly Maintenance	0041 00-1
WP 0042 00	Turbocharger Replacement	0042 00-1
WP 0043 00	Turbocharger Repair	0043 00-1
WP 0044 00	3K Turbocharger Wastegate Actuator Maintenance	0044 00-1
WP 0045 00	Garrett Turbocharger Wastegate Actuator Maintenance	0045 00-1
WP 0046 00	Fuel Injector Replacement	0046 00-1
WP 0047 00	Fuel Injector Solenoid Replacement	0047 00-1
WP 0048 00	Radiator Repair	0048 00-1
WP 0049 00	Water Pump Repair	0049 00-1
WP 0050 00	Fan Clutch Repair	0050 00-1
WP 0051 00	Spindle and Housing Repair	0051 00-1
WP 0052 00	Alternator Repair	0052 00-1
WP 0053 00	Starter Solenoid Replacement	0053 00-1
WP 0054 00	Starter Repair	0054 00-1
WP 0055 00	Engine Power Wiring Harness Replacement	0055 00-1
WP 0056 00	Engine Wiring Harness Replacement	0056 00-1
WP 0057 00	Main Cab Wiring Harness Replacement	0057 00-1
WP 0058 00	Switch Panel Wiring Harness Replacement	0058 00-1
WP 0059 00	Turn Signal/Marker Light Wiring Harness Replacement	0059 00-1

Table of Contents - Continued

		Page Number
WP 0060 00	Turn Signal (Thru-deck) Wiring Harness Replacement	0060 00-1
WP 0061 00	Overhead Cab Wiring Harness Replacement	0061 00-1
WP 0062 00	Chassis Wiring Harness Replacement	0062 00-1
WP 0063 00	Front Anti-lock Brake System (ABS) Wiring Harness Replacement	0063 00-1
WP 0064 00	Rear Anti-lock Brake System (ABS) Wiring Harness Replacement	0064 00-1
WP 0065 00	Cab Anti-lock Brake System (ABS) Wiring Harness Replacement	0065 00-1
WP 0066 00	Collision Warning System (CWS) Wiring Harness Replacement	0066 00-1
WP 0067 00	Taillight Wiring Harness Replacement	0067 00-1
WP 0068 00	Air Conditioner Binary Switch Wiring Harness Replacement	0068 00-1
WP 0069 00	Engine Injector and ECM Wiring Harnesses Replacement	0069 00-1
WP 0070 00	Transmission Replacement	0070 00-1
WP 0071 00	Transmission Overhaul	0071 00-1
WP 0072 00	Front Axle Assembly Replacement	0072 00-1
WP 0073 00	Front Axle Caster Adjustment	0073 00-1
WP 0074 00	Tie Rod Maintenance	0074 00-1
WP 0075 00	Front Cross Tube Arm Replacement	0075 00-1
WP 0076 00	Front Steering Arm Replacement	0076 00-1
WP 0077 00	Front Steering Knuckle Replacement	0077 00-1
WP 0078 00	Rear Axle Replacement	0078 00-1
WP 0079 00	Forward-rear Axle Differential Carrier Replacement	0079 00-1
WP 0080 00	Forward-rear Axle Differential Carrier Repair	0080 00-1
WP 0081 00	Rear-rear Axle Differential Carrier Replacement	0081 00-1
WP 0082 00	Rear-rear Axle Differential Carrier Repair	0082 00-1
WP 0083 00	Foot Brake Valve Repair	0083 00-1
WP 0084 00	Air Compressor Repair	0084 00-1
WP 0085 00	Brake Drum Repair	0085 00-1
WP 0086 00	Power Steering Pump Replacement	0086 00-1
WP 0087 00	Power Steering Pump Repair	0087 00-1
WP 0088 00	Steering Gear Replacement	0088 00-1
WP 0089 00	Steering Gear Repair	0089 00-1
WP 0090 00	Steering Column Replacement	0090 00-1
WP 0091 00	Fifth Wheel Replacement	0091 00-1
WP 0092 00	Slide Bracket and Plate Repair	0092 00-1
WP 0093 00	Top Plate Replacement	0093 00-1
WP 0094 00	Top Plate Repair	0094 00-1
WP 0095 00	Ramp Replacement	0095 00-1
WP 0096 00	Crossmember Replacement	0096 00-1
WP 0097 00	Front Cab Mounts Replacement	0097 00-1
WP 0098 00	Rear Cab Mounts Replacement	0098 00-1
WP 0099 00	Front Spring Replacement	0099 00-1
WP 0100 00	Front Spring Hangers Replacement	0100 00-1
WP 0101 00	Rear Suspension Center Bearing Replacement	0101 00-1
WP 0102 00	Rear Spring Assembly Replacement	0102 00-1
WP 0103 00	Rear Suspension Control Rod and V-Rod Replacement	0103 00-1
WP 0104 00	Cab Replacement	0104 00-1
WP 0105 00	Cab Body Repair	0105 00-1
WP 0106 00	Hood SMC Repair	0106 00-1
WP 0107 00	Cab Door Replacement	0107 00-1

Table of Contents - Continued

		Page Number
WP 0108 00	Cab Door Repair	0108 00-1
WP 0109 00	Windshield Replacement	0109 00-1
WP 0110 00	Rear Window Replacement	0110 00-1
WP 0111 00	Air Ducts Replacement	0111 00-1
WP 0112 00	Air Conditioning System Refrigerant (R-134a) Maintenance	0112 00-1
WP 0113 00	HVAC Unit Replacement	0113 00-1
WP 0114 00	Air Conditioner Expansion Valve Replacement	0114 00-1
WP 0115 00	Air Conditioner Evaporator Coil Replacement	0115 00-1
WP 0116 00	Air Conditioner Compressor Service	0116 00-1
WP 0117 00	Air Conditioner Compressor Replacement	0117 00-1
WP 0118 00	Air Conditioner Receiver-drier Replacement	0118 00-1
WP 0119 00	Air Conditioner Condenser Replacement	0119 00-1
WP 0120 00	Air Conditioner Fan Cycling Switch Replacement	0120 00-1
WP 0121 00	Air Conditioner Hose Replacement	0121 00-1
WP 0122 00	Illustrated List of Manufactured Items	0122 00-1
WP 0123 00	Torque Limits	0123 00-1

CHAPTER 4 SUPPORTING INFORMATION

WP 0124 00	References	0124 00-1
WP 0125 00	Expendable and Durable Items List	0125 00-1
WP 0126 00	Tool Identification List	0126 00-1

HOW TO USE THIS MANUAL

This manual is designed to help you maintain the M915A3 Tractor Truck.

FEATURES OF THIS MANUAL:

- A Table of Contents is provided at the beginning of this manual.
- WARNINGs, CAUTIONs, NOTEs, subject headings, and other important information are highlighted in **BOLD** print as a visual aid.

WARNING

A WARNING indicates a hazard which results in death or serious injury.

CAUTION

A CAUTION is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.

NOTE

A NOTE is a statement containing information that will make the procedures easier to perform.

- Statements and words of particular importance are printed in CAPITAL LETTERS to create emphasis.
- Instructions are located with illustrations that show the specific task on which the mechanic is working.
- Dashed leader lines used in illustrations indicate that called out items are not visible (i.e. they are located within the structure).
- Technical instructions include metric units in addition to standard units. A metric conversion chart is provided on the inside back cover.
- An alphabetical index is provided at the end of the manual to assist in locating information not readily found in the Table of Contents.

FOLLOW THESE GUIDELINES WHEN YOU THIS MANUAL:

- Read through this manual and become familiar with its contents before attempting to maintain the vehicle.
- A Warning Summary is provided at the beginning of this manual and should be read before attempting to maintain the vehicle.

CHAPTER 1
INTRODUCTORY INFORMATION WITH THEORY OF OPERATION

GENERAL INFORMATION 0001 00

SCOPE

1. **Type of Manual.** This manual is for use in performing Direct Support and General Support Maintenance on the M915A3 Tractor Truck.

2. **Equipment Name and Model Number.** Truck, Tractor, Line Haul: 52,000 GVWR, 6 X 4, M915A3.

3. **Purpose of Equipment.** The M915A3 Tractor Truck is a 6 X 4 prime mover of semitrailers used primarily to transport containers, bulk cargo, and petroleum products over primary and secondary roads under worldwide climatic conditions in a military environment.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, *Functional User's Manual for the Army Maintenance Management System (TAMMS*), as contained in the Maintenance Management Update.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRS)

If your truck needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF Form 368 *(Product Quality Deficiency Report)*. Mail it to us at: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-LC-CIP-WT, Rock Island, Illinois 61299-7630. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

1. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

2. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling or breaking of these materials may be a corrosion problem.

3. If a corrosion problem is identified, it can be reported using SF Form 368 *(Product Quality Deficiency Report).* Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA Pam 738-750.

OZONE DEPLETING SUBSTANCES (ODS)

Listing to be provided by requiring activity.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

For destruction of Army materiel to prevent enemy use, refer to TM 750-244-6.

PREPARATION FOR STORAGE OR SHIPMENT

For preparation for storage or shipment procedures, refer to TM 740-90-1 and MIL-V-62038D.

WARRANTY INFORMATION

The vehicle is warranted by Freightliner Corporation in accordance with TB 9-2320-302-15. Warranty starts on the date found in block 23, DA Form 2408-9 in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action.

NOMENCLATURE CROSS-REFERENCE LIST

COMMON NAME	OFFICIAL NOMENCLATURE
Cold Start System	Ether Quick-start System
Engine Coolant	Antifreeze, Ethylene Glycol Mixture
Gladhand	Quick Disconnect Coupling
Jake Brake	Engine Brake
Komfort Loc®	Seat Belt Adjustment
TufTrac	Rear Suspension System

LIST OF ABBREVIATIONS

NOTE

Refer to MIL-STD-12D for standard abbreviations.

ABBREVIATION	DEFINITION
ABS	Anti-lock Brake System
C	Centigrade or Celsius
CID	Cubic Inch Displacement
cm	Centimeter
CWS	Collision Warning System
ECU	Electronic Control Unit
F	Fahrenheit
GCWR	Gross Combination Weight Rating
GVWR	Gross Vehicle Weight Rating
kg	Kilogram
km	Kilometer
kPa	Kilopascal
kph	Kilometers per Hour
kW	Kilowatt
l	Liter
lb	Pound
lb-ft	Pound Foot
lph	Liters per Hour
m	Meter
mm	Millimeter
MTS	Movement Tracking System
Nm	Newton Meter
PMCS	Preventive Maintenance Checks and Services
psi	Pounds per Square Inch
rpm	Revolutions per Minute

EQUIPMENT DESCRIPTION AND DATA 0002 00

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

1. **Characteristics.**

   a. The M915A3 Tractor Truck is used to transport M871, M872, and M1062 semitrailers on line haul missions.

   b. It has a Gross Vehicle Weight Rating (GVWR) of 52,000 lb (23,608 kg) and is equipped with a two-way oscillating, sliding fifth wheel compatible with a two-inch kingpin. Maximum towed load on kingpin is 30,000 lb (13,620 kg).

2. **Capabilities and Features.**

   a. While operating on Class I roads, the fully loaded M915A3 can maintain a speed of 65 mph (105 kph) on level roads and 29 mph (47 kph) while ascending a 3 percent grade. It has a minimum turning diameter, curb-to-curb, of 53 ft 9 in (16.4 m).

   b. Average cruising ranges at Gross Combination Weight Rating (GCWR) with a full tank of fuel will vary based on conditions (e.g., varying loads, prolonged idle, and climatic conditions). Cruising range is optimally 400 miles (640 km).

   c. The M915A3 is equipped with an instrument panel mounted speedometer and tachometer which register truck ground speed and engine speed.

   d. The M915A3 has the following capabilities and features:

      (1) air-activated front and rear non-asbestos cam brakes with a four-channel anti-lock brake system (ABS) to provide significantly improved handling and braking during emergency stops

      (2) operation in temperatures from -25°F (-32°C) to +125°F (+52°C), and to -40°F (-40°C) with arctic kit installed

      (3) start and climb capability of a 20 percent grade at GCWR in both forward and reverse directions

      (4) fording capability up to 20 in (51 cm) deep for 5 minutes without damage or requiring maintenance before operations can continue

      (5) two-passenger aluminum corrosion-proof cab with a 90 degree tilt-forward hood for service accessibility

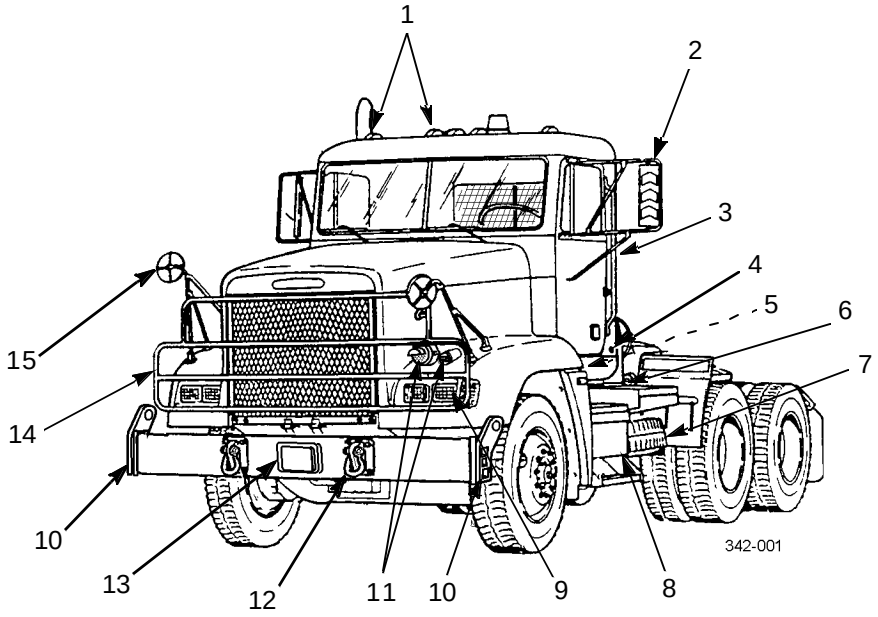
      (6) six cylinder, 12.7 liter, 430 horsepower, in-line turbocharged diesel engine built by Detroit Diesel

      (7) Allison HD 4560P six-speed automatic transmission

      (8) Collision Warning System (CWS) that warns the driver of potentially dangerous driving situations by activating visual and audible alerts.

   e. For operation in arctic conditions, the M915A3 can be equipped with an arctic heater mounted under the cab, above the battery box. This provides heat for the cab and engine cooling system. The arctic heater may be operated prior to starting the engine to provide preheating of engine block.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

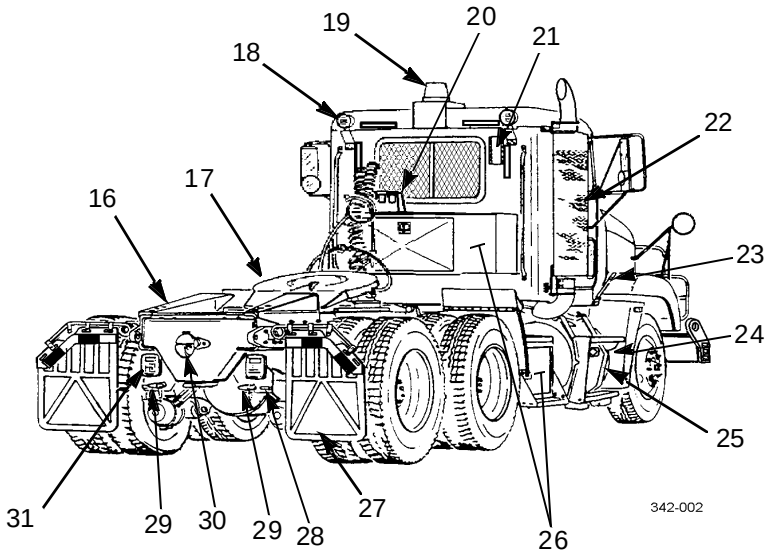


KEY	COMPONENT	DESCRIPTION
1	Marker Clearance Lights	Indicate outline of truck.
2	Side Mirrors (Heated)	Provide driver with a view of sides of truck and semitrailer, if towing.
3	Grabhandles	Provide a hand hold for personnel climbing on truck.
4	Utility Power Receptacle	Supplies power for work lights. Located on both sides of truck.
5	Air Horn	Provides an audible alert.
6	Master Battery Switch	Provides battery power to truck.
7	Spare Wheel and Tire	Extra wheel and tire used in case of a flat tire.
8	Battery Box and Steps	Holds vehicle batteries and provides steps to access cab.
9	Front Service Lights	Include headlights and turn signals.
10	Bumper Extensions	Provide adjustable attachment point for slings.
11	Blackout Lights	Used during blackout conditions. Include marker and drive lights.
12	Towing Eyes	Provide attachment points for towing device.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED

KEY	COMPONENT	DESCRIPTION
13	CWS Antenna	Forward looking collision warning system antenna.
14	Brush Guard	Protects front of hood and components under hood from damage.
15	Spotting Mirrors	Provide added visibility to sides and front of truck.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED



KEY	COMPONENT	DESCRIPTION
16	Ramp	Sloped surface serves as an approach to fifth wheel and facilitates coupling of semitrailer.
17	Fifth Wheel	Coupling device for semitrailers with kingpins.
18	Utility Lights	Illuminate area in back of cab. There is one light on each side of cab.
19	Strobe Warning Light	Strobe light alerts other vehicles of presence of truck.
20	Intervehicular Receptacles Installation	Contains 12-volt commercial, 24-volt military, and trailer ABS receptacles.
21	Antenna Mount	Mount for radio antenna.
22	Exhaust Muffler	Deadens noise of engine exhaust.
23	Hood Latch	Locks hood closed. Located on both sides of hood.
24	CWS Side Sensor	Side looking collision warning system sensor.
25	Fuel Tank	Holds fuel. Steps mounted to tank provide access to cab.
26	Storage Boxes	Provide stowage area for BII and other items.
27	Mud Flaps	Prevent water and debris from spraying up on passers by or towed semitrailer.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED

KEY	COMPONENT	DESCRIPTION
28	Blackout Lights	Used during blackout conditions.
29	Trailer Gladhands	Provide air supply for trailer brakes.
30	Pintle Hook	Coupling device for trailers with lunettes.
31	Taillights	Contain composite tail, stop, backup, and turn signal lights.

EQUIPMENT DATA

Dimensions:

Length (Overall)	276 in (701 cm)
Height (Overall)	118 in (300 cm)
Width (Overall)	100 in (254 cm)
Wheelbase	162 in (411 cm)
Ground Clearance	9 in (23 cm)
Angle of Approach	27°

Weights:

Curb	19,080 lb (8662 kg)
GVWR	52,000 lb (23,608 kg)
GCWR	105,000 lb (46,670 kg)
Front Axle (Loaded)	12,000 lb (5448 kg)
Rear Axle (Loaded)	40,000 lb (18,160 kg)

Capacities:

Engine Oil (Refill w/Filters)	41 qt (38.81 l)
Cooling System	65 qt (61.5 l)
Fuel Tank	100 gal. (378.5 l)
Power Steering Reservoir	2 qt (1.9 l)
Transmission	51 qt (48 l)
Rear Axle (Forward/Rear)	13/14.5 qt (12.3/13.7 l)

Engine:

Manufacturer	Detroit Diesel
Type	4-stroke, in-line turbocharged diesel
Model	DDEC IV
Cylinders	6
Displacement	755 CID (12.7 l)
Torque @ 1200 rpm	1400 lb-ft (1898 Nm)
Maximum Horsepower @ 2100 rpm	430 (320.6 kW)
Maximum Governed Speed	2100 rpm
Oil Filter Type	2 full flow, replaceable elements
Oil Filter Quantity	2

Fuel System:

Type	diesel fuel injected
Fuel Filter Type	1 primary, 1 secondary replaceable element
Air Cleaner:	
Type	dry element
Quantity	1