TO THE OWNER

In Appreciation

Thank you for buying a MackK® vehicle. With proper care and maintenance, your new Mack® TerraPro™ LEU model will help you gain a competitive edge with its fuel-efficient drivetrain combinations, low maintenance, extended service intervals and, eventually, good resale value.

The Mack® TerraPro™ LEU model is available for a wide range of applications. Because of this versatility, drivetrains and components vary and operating instructions may differ from one model to another. While every effort has been made to cover all current arrangements, do not hesitate to consult your MACK distributor if a question arises. Honest, personal service is standard with every MACK sale.

CAUTION

Mack Trucks, Inc. would like to point out the important role that the driver plays in the life of the vehicle. Only trained and informed drivers should operate this vehicle.

We, at Mack Trucks, Inc., hope that you will be happy with your new Mack® TerraPro™ LEU model, and that you see many years of trouble-free driving.

This vehicle was built to conform to all federal standards and regulations applicable at the time of manufacture.

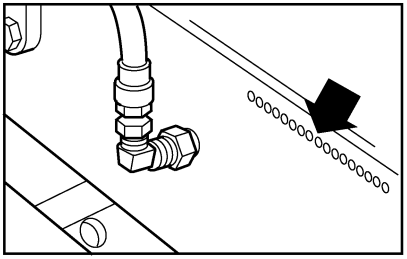
COMPONENT IDENTIFICATION

Locate the following serial numbers and write them in the boxes provided next to each illustration.

VIN Locations

The Vehicle Identification Number (VIN) is displayed in two locations (a frame rail stamping and a label). The 17-digit VIN must be identical in both locations.

The VIN frame stamping is located on the right outside frame rail and the left inside frame rail.

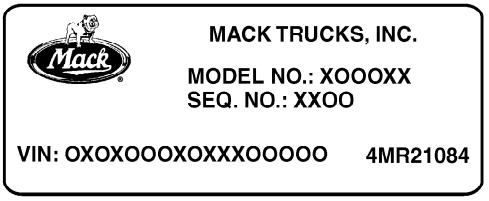


Right Outside Frame Rail Flange

VEHICLE IDENTIFICATION NUMBER

C0029554

The **VIN label** is located on the inside door frame below the driver seat.



Vehicle Identification Number

C0028941

ENGINE GASEOUS EMISSION CONTROL SYSTEMS WARRANTY

Mack Trucks, Inc. warrants the Emission Control Systems on each new Mack diesel engine in a new Mack Truck to comply with all United States Federal and Canadian emissions regulations applicable at the time of manufacture of the engine, and to be free from defects in material and workmanship under normal use and service up to 60 months, or 160934 km (100,000 miles), which ever occurs first, provided that all Mack Trucks, Inc. maintenance requirements are followed as described in this manual. All warranty periods are calculated from the date-in-service of the new vehicle.

The repair or replacement of defective parts will be made without charge for the cost of parts and if repairs are made at an authorized Mack Trucks, Inc. dealership, there will be no charge for labor. Mack Trucks, Inc.'s obligation under this warranty is limited to the repair or replacement, at Mack Trucks, Inc.'s option, of any part(s) of the Emission Control Systems of such engine and/or vehicle found to be defective upon examination by Mack Trucks, Inc. and provided that such part(s) were returned to Mack Trucks, Inc. or its nearest authorized Dealer within a reasonable period of time.

Qualifications and Limitations:

Note: Not covered by the Emissions Control Systems Warranty:

- Malfunctions caused by misuse, improper adjustments, modification, alteration, tampering, disconnection, improper or inadequate maintenance and use of improper diesel fuel or DEF.
- Damage resulting from accident, acts of nature or other events beyond the control of Mack Trucks, Inc.
- Inconvenience, loss of use of the vehicle, commercial loss of any kind including, but not limited to, consequential or incidental damages
- Any vehicle in which the odometer has been altered or damaged so that mileage cannot be readily determined.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES AND REPRESENTATIONS OR CONDITIONS, STATUTORY OR OTHERWISE, EXPRESSED OR IMPLIED INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Emissions Control System Warranty

The following engine components are covered by the supplemental emissions control system warranty policy as required by the Federal code of emission regulations.

1 Turbocharger Assembly
   - VGT Actuator

2 Charge Air Cooler
   - CAC Pipes (Air inlet to/from CAC)
   - CAC Hoses

3 Engine Control Module (ECM)

4 Injectors

Completed Vehicles

In addition to the label supplied by Mack Trucks, Inc. as the chassis-cab manufacturer, a Completed Vehicle certification label, supplied by the body manufacturer, is affixed in the same general location. This label provides information pertaining to Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating (GAWR), tire and rim information, etc.

On **MACK-completed vehicles**, this label contains the date of manufacture, VIN, GVWR, GAWR, and tire and rim data. It is found in one of the NHTSA locations listed above.

MANUFACTURED BY MACK TRUCKS, INC. IN 11/2005 GVWR 23587 KG (52000 LB)
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE. VEHICLE IDENTIFICATION NUMBER: 1M1AK06Y76N012587

	GAWR		TIRES		RIMS					
FRONT:	5443 KG (12000 LB)	WITH	11R22.5 G,	22.5 X 8.25 ,	AT 827 KPA	(100 PSI)	COLD	SINGLE		
1ST INT:	9072 KG (20000 LB)	WITH	11R22.5 G,	22.5 X 8.25 ,	AT 724 KPA	(100 PSI)	COLD	DUAL		
2ND INT:	KG (LB)	WITH			AT KPA	(PSI)	COLD			
3RD INT:	KG (LB)	WITH			AT KPA	(PSI)	COLD			
REARMOST:	9072 KG (20000 LB)	WITH	11R22.5 G,	22.5 X 8.25 ,	AT 724 KPA	(100 PSI)	COLD	DUAL		

VEHICLE TYPE: TRUCK TRACTOR

MANUFACTURED IN 09/2005 BY MACK TRUCKS, INC.
VEHICLE IDENTIFICATION NUMBER: 1M1AP02Y06N001003

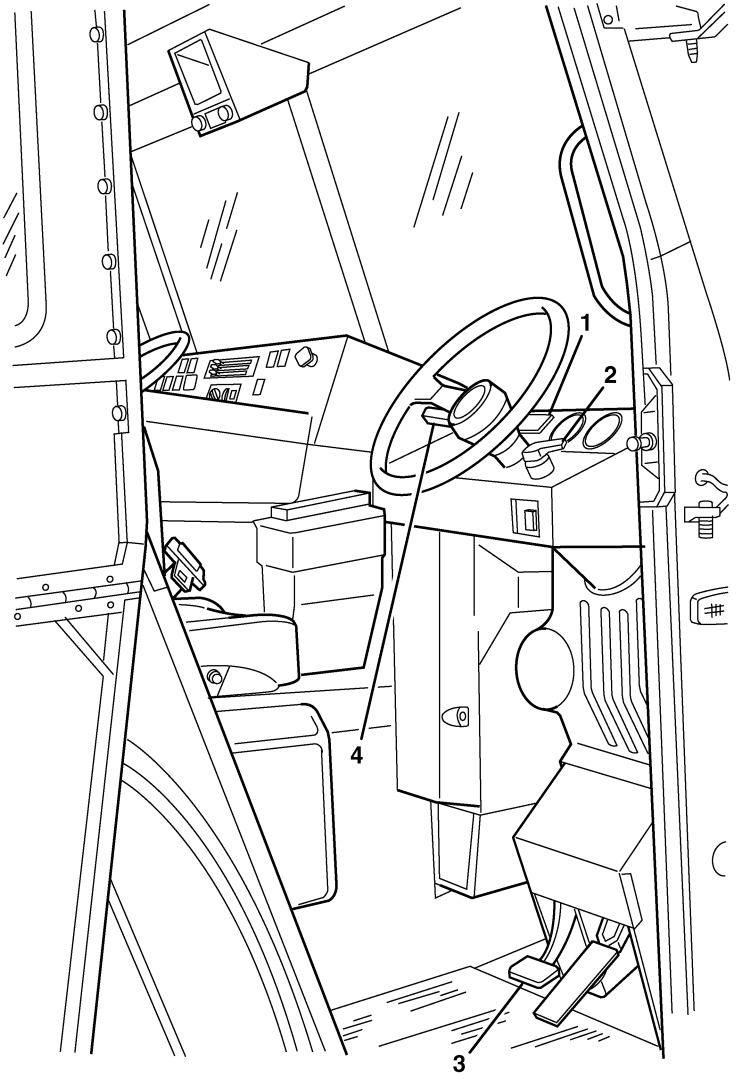
GVWR/PNBV: 29938 KG VEHICLE TYPE: TRUCK-TRACTOR/CAMION TRACTEUR

GAWR/PNBE — FRONT:	9072 KG WITH	425/65R22.5L TIRES,	22.5 X 12.25	RIMS, 827 KPA	COLD	SINGLE		
GAWR/PNBE — 1ST INT:	10433 KG WITH	11R24.5 G TIRES,	24.5 X 8.25	RIMS, 724 KPA	COLD	DUAL		
GAWR/PNBE — 2ND INT:	KG WITH	TIRES,		RIMS, KPA	COLD			
GAWR/PNBE — 3RD INT:	KG WITH	TIRES,		RIMS, KPA	COLD			
GAWR/PNBE — REAR:	10433 KG WITH	11R24.5 G TIRES,	24.5 X 8.25	RIMS, 724 KPA	COLD	DUAL		

CMVSS • CANADA • NSVAC 975 • TRANSPORT •

C0028956

CAB INTERIOR — RIGHT



1. Instrument Panels	3. Foot Pedals
2. Work Brake	4. Turn Signal, Hazard Switch and HI/LO Beam

9. Air Pressure Gauge — Indicates the air pressure in the air brake system(s). The normal operating air pressure is between 759 kPa (110 psi) and 897 kPa (130 psi) in both air brake systems. If pressure drops below 75 psi (±5 psi) in either system, the warning buzzer and warning light will go on. Determine the cause of failure before proceeding. Primary air pressure is supplied to the rear brakes and is indicated by the green pointer on the gauge. Secondary air pressure is supplied to the steering axle brakes and indicated by the orange pointer.

10. Parking Brake Valve — Yellow diamond-shaped knob. Pull to apply. Push to release. Applies parking brakes.

11. Transmission Oil Temperature Gauge — Indicates the temperature of the automatic transmission oil. The normal operating range is between 71°C and 93°C (160°F and 200°F). If the transmission oil temperature reaches 121°C (250°F), operation in the higher gears will be inhibited. If the transmission overheats during normal operation, stop the vehicle and check the transmission oil level. If both the transmission oil temperature gauge and the engine coolant temperature gauge indicate a high temperature, check the cooling system. If the cooling system appears to be functioning properly, shift the transmission into Neutral, set the parking brakes, and run the engine between 1200 and 1500 rpm. The engine and transmission should cool sufficiently within two to three minutes. If the temperature does not drop to operating range, the condition must be investigated and corrected before continuing operation.

12. Voltmeter — Indicates the surface charge of the battery with the engine NOT running (and the ignition ON). Indicates the condition of charging system with the engine running.

The voltmeter can be useful as a diagnostic tool. During cranking, the reading should not drop below 10 volts. Lower readings may indicate corroded connections at the cranking motor or battery terminals, or discharged or defective batteries.

13. Mode Button — Using this button will display diagnostic trouble code information and trip distance in the odometer. When you press and hold down this button, the display will go through a gauge self test. After the self test is complete, diagnostic trouble code information will be displayed, by MID, in the speedometer/odometer screen. When the first MID is displayed, push the Mode button again to display the 1st diagnostic trouble code for this MID. At the end of the diagnostic trouble code list for each MID, "CLEAR" will be displayed. You have the option here to clear the codes for this MID. If you choose to do so, press and hold the Mode button. Once the codes are cleared for this MID, the next MID will be displayed.

By pressing this button once (NOT holding it down), information for Trip 1 distance will be displayed. Press and hold the Mode button to clear Trip 1 information.

By pressing this button twice, information for Trip 2 distance will be displayed. Press and hold the Mode button to clear Trip 2 information.

PRE-TRIP

⚠ DANGER

Before working on or inspecting a vehicle, set the parking brakes, place the transmission in neutral and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

Safety is the most important and obvious reason for doing a pre-trip inspection. Federal and state laws require inspection performed by the driver. Federal and state inspectors also inspect commercial vehicles. An unsafe vehicle can be placed "out of service" until the driver or owner corrects the deficiency. Owners and operators should familiarize themselves with sections 49 CFR 396.11 and 396.13 concerning Federal requirements for vehicle inspection. Certain other laws may also apply.

Section 49 CFR 396.13 states that all motor carrier drivers must complete a written report at the end of each work day for each vehicle operated, covering most of what is covered in the pre-trip list. The report should list all defects or deficiencies discovered by the driver. A pre-trip inspection prepares for the end-of-work report.

Starting on the next page are suggested guidelines to be used in performing truck, tractor and trailer pre-trip inspections. Depending on the application of the vehicle being used, these guidelines should be modified to include other necessary inspection points. For example, steps and grab handles should be checked daily on refuse trucks because the operator is getting in and out of the cab more frequently.

If any component or system does not pass this inspection, it must be corrected before operating the vehicle. Whenever equipment requires adjustment, replacement, repair or lubrication, refer to the Service Manuals or contact an authorized Mack Truck dealer for the correct procedures, specifications and intervals.

Take your time going through the pre-trip inspection. Remember that a careful pre-trip inspection saves time by eliminating unscheduled stops for correcting a faulty item.

The following information has been provided by the American Trucking Association as developed by the D.O.T. Office of Motor Carriers (BMCS).

Pre-Trip Inspection Quick List

Inspect the vehicle in a circular manner.

Approaching the Vehicle

Tilting the Cab

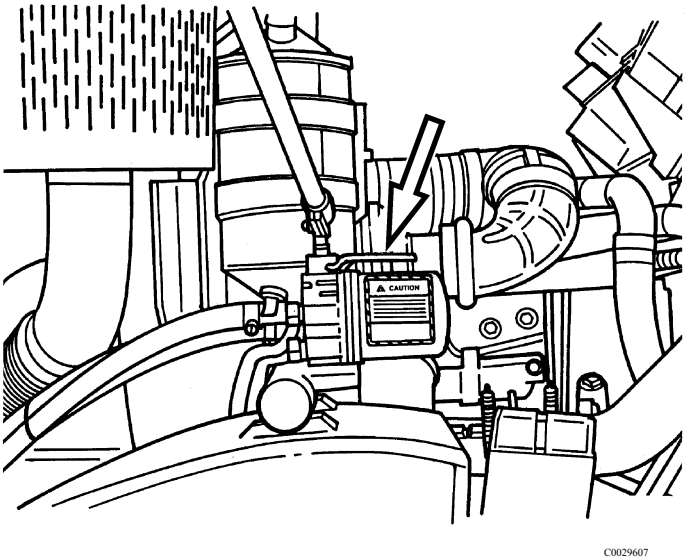
Use the following instructions to tilt the cab:

Note: Before raising the cab, the engine must be shut off and all loose items in the cab must be secured.

1. Take the cab tilt pump handle from its stored position.

Note: The cab tilt pump handle is stored inside the cab, on the right side cab back wall, behind the folding seat.

2. Insert the handle into the pump and move the pump control lever (see arrow) to the RAISE position (refer to the illustration).

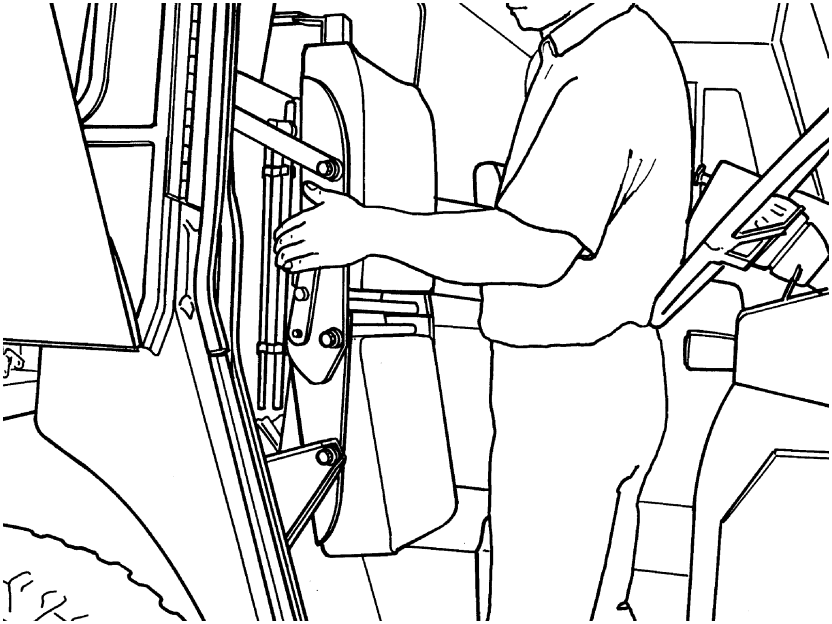


Pump Control Lever (Arrow)

SEAT ADJUSTMENT

Right-Side Folding Seat

Note: This vehicle was designed as a left-hand drive cab with right-hand operating position. It is possible to operate this vehicle from either side, but the person on the right must be seated to ride and must stand to drive.



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Stand facing the seat. Reach behind the seat and pull on the latch. Fold the seat to a vertical position to stand, or set it level for the seated position.

⚠ DANGER

Seat belts must be worn at all times while operating this vehicle.

will again be activated. In order to disable the engine brake, simply return the dash-mounted control switch to the OFF position.

⚠ DANGER

The engine brake should never be considered a substitute for the vehicle service brakes. The service brakes should always be maintained in good working order, and should always be viewed as the primary vehicle slowing system. Service brakes are always used to bring the vehicle to a complete stop.

Cruise Control with the MACK PowerLeash™ Engine Brake

When the MACK PowerLeash™ Engine Brake is enabled at the same time your V-MAC® cruise control is in use, the engine brake automatically activates when necessary to slow the vehicle to the cruise set point speed. You can select one of two possible options:

• The engine brake is activated 3 kph (2 mph) above the cruise set point.

• The engine brake is activated as soon as cruise control commands fueling to zero (vehicle has just reached cruise set point and fuel has been turned off).

The first option is the more popular choice for highway use and is the default mode. Consult your V-MAC® IV Operator's Manual for more information about this option. Your local MACK dealer can change the current selection.

The engine brake's ability to control maximum vehicle speed is limited to the selected retarding power of the engine brake. If the engine brake dash-mounted control switch is set to the LOW position, only half of the available braking power is used. If the dash-mounted control switch is set to the HIGH position, the cruise control invokes full engine brake power.

Note: Deactivating the cruise control function does not disable the engine brake.

The MACK PowerLeash™ Engine Brake may be activated or deactivated by other vehicle systems such as ABS and Headway control systems. Refer to the literature concerning these systems for additional information.

Engine Warm-Up

> **CAUTION**
>
> *Idling the engine unnecessarily for long periods of time wastes fuel and fouls injection nozzles. Unburned fuel causes carbon formation and oil dilution. NEVER race an engine during warm-up.*

Engine damage can occur if the engine is not warmed up to a minimum operating temperature of 77°C (170°F) before putting the vehicle into full operation.

Heavy-duty diesel engines are designed to operate at optimum efficiency when they are running loaded at (or very near) normal operating temperature, where efficient combustion takes place. When the engine is operated unloaded, lightly loaded (i.e., stop-and-go operations, PTO operations, or periods of extended engine idling) or in cold weather conditions, normal operating temperature may not be achieved or maintained. As a result, carbon and/or varnish build-up will occur and lubricating oil will become contaminated with combustion by-products.

Cold weather operations place added demands on a diesel engine. When operating in cold climates (particularly in stop-and-go operations, PTO operations or periods of extended engine idling), minimum operating temperature must be maintained to prevent engine damage resulting from valve varnishing and carbon build-up.

Note: Many accessories are available for cold weather operations. Refer to the Maintenance and Lubrication Manual (21394653) for additional information concerning cold weather accessories.

Engine Idling

Idling the engine unnecessarily for long periods of time wastes fuel, fouls injector nozzles and can lead to valve carbon and varnish deposits. Unburned fuel causes carbon formation and oil dilution. Shut the engine down when prolonged loading or unloading of cargo is required.

When starting a cold engine, or if the vehicle has been parked and the engine coolant has fallen well below normal operating temperature, a fast idle speed of approximately 1200 rpm should be maintained to help the engine warm up more quickly.

AXLES

Rear Axles Other Than MACK

Please refer to the operators manual provided with your vehicle for axles other than MACK.

MACK Rear Axles

Mack Trucks, Inc. provides axle housings in three capacity classifications:

- Medium Duty
- Heavy Duty
- Extra-Heavy Duty

To deliver the appropriate amount of torque to the driving wheels, MACK offers dual-reduction carriers in a variety of ratios.

Mack Trucks, Inc. offers a large variety of four-wheel-drive tandem axles with top-mounted, dual-reduction carriers (for straight line through drive). Carriers are also available in a large number of ratios.

All four-wheel-drive tandem carriers are available with the MACK inter-axle power divider third differential (with or without a power divider lockout).

MACK rear axles are designed so the entire load is carried by the axle housing (through the wheel bearings mounted on the housing spindle). The rear axle shafts are either free-splined (both ends) or integral flange type. Both types of axle shafts can be removed without removing or disturbing the rear wheels.

To avoid excessive tire wear, proper maintenance must be practiced and rear axle tires must be matched.

CAUTION

The maximum safe operating oil temperature for a MACK rear axle is 121°C (250°F) for mineral-based oil, and 148°C (300°F) for synthetic-based oil. Continued operation with oil above this temperature will result in rapid deterioration of the oil's lubricating properties and is NOT recommended.

Diesel Exhaust Fluid (DEF) Handling

When handling DEF solution, it is important to prevent contact with electrical connections. There is a risk that the DEF will cause oxidation that cannot be removed. Water or compressed air do not help, since DEF quickly oxidizes certain metal. If a disconnected connector comes into contact with the DEF solution it must be replaced immediately to prevent the DEF solution from creeping further into the copper wiring.

CAUTION

When detaching hoses and components, do not spill DEF on disconnected or unsealed connectors. If DEF is spilled on a disconnected or unsealed connector, the connector must be replaced immediately.

Things to know about spilled Diesel Exhaust Fluid (DEF)

If DEF solution comes into contact with the skin: rinse with plenty of water and remove contaminated clothing.
If DEF solution comes into contact with the eyes: rinse for several minutes and call for medical help if necessary.
If inhaled: breathe fresh air and call for medical help if necessary.
Do not allow the DEF solution to come into contact with other chemicals.
The DEF solution is not flammable. If the DEF solution is exposed to high temperatures, it breaks down into ammonia and carbon dioxide.
The DEF solution is highly corrosive to certain metals, including copper and brass.
If the DEF solution is spilled onto the vehicle, wipe off the excess and rinse with water. Spilled DEF solution can form concentrated white crystals on the vehicle. Rinse off these crystals with water.

Note: Do not flush DEF spillage into the normal drain system.

Diesel Exhaust Fluid(DEF) Consumption

DEF consumption is related to fuel consumption. A highway truck may travel 225–300 miles or more on one gallon of DEF. A gauge much like a fuel gauge will indicate the level of DEF in the tank. A DEF low-level warning will activate when DEF is low. If a driver runs out of DEF completely, vehicle power will be reduced. When the DEF tank is refilled, the engine will resume normal power.

Note: DEF tanks are sized for a two to one fuel to DEF ratio in order to meet US 2010 requirements.

Diesel Exhaust Fluid (DEF) Availability

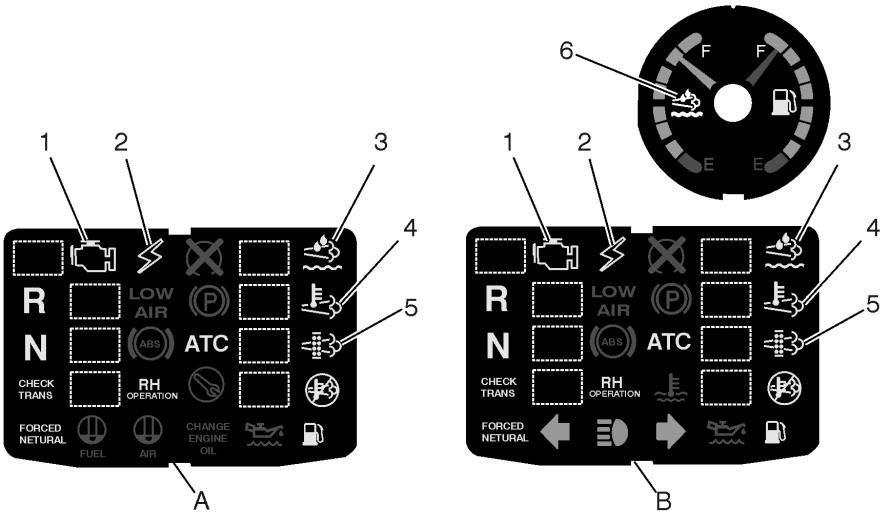
DEF will be available in 2.5-gallon containers, 55-gallon drums, 275 gallon IBC and in bulk storage for fleet locations, truck stops and dealerships. All major truck stops, dealers and distributors will carry DEF.

DEF will freezes at –11 degrees C (12 F). DEF needs to be protected from extended periods of severe cold. For more information on DEF and availability please

Instrument Cluster

The aftertreatment icons are located in the instrument cluster per the following images.

LEU Instrument Cluster



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A Left Side Indicator Set	**B** Right Side Indicator Set

1. Malfunction Indicator Lamp (MIL)	**2.** CHECK Lamp	**3.** Aftertreatment DEF Low Lamp
4. High Exhaust Temperature (HEST) Lamp	**5.** Aftertreatment DPF Regeneration Required Lamp	**6.** Aftertreatment DEF Tank Gauge

CLEANING YOUR VEHICLE

The best protection against environmental influences that can hurt your vehicle's finish is frequent washing and waxing. How often this is required depends on how much the vehicle is used, where it is parked and weather conditions. Frequent washing is required to remove oils, dirt and grime that can stain and oxidize the painted and polished surfaces of your new truck.

Exterior Washing

Recommendations for the first 30 days.

• Only wash the vehicle by hand with cool water, a mild car wash solution and a soft cloth or sponge. Do not use a commercial truck wash.

• Wash the vehicle in the shade, never in direct sunlight.

• Do not dry wipe the finish; always use clean water. Dry wiping could scratch the finish.

• Do not park near factories with heavy smoke fallout for extended periods of time.

• Bird droppings have high acid content and can damage freshly painted surfaces. They should be cleaned off as soon as possible.

• Do not spill gasoline, diesel fuel, oil, antifreeze, transmission fluid or any solvents of the like on the new finish. If you do. IMMEDIATELY rinse off with water. DO NOT WIPE.

• Do not scrape ice or snow from surface. Brush off the loose material with a soft snow brush.

Recommendations for the first 90 days.

• Do not wax or polish the vehicle; this will allow the finish to dry and harden completely. (Do not use waxes or polishes that contain silicone.)

Note: Do not wash the vehicle in direct sunlight.

⚠ DANGER

Test the service brakes after washing the vehicle. Moisture and/or ice on the brakes can affect braking efficiency.

Note: When washing the vehicle in cold/freezing weather, avoid direct water spray into the door lock cylinders, as the water may freeze in the lock mechanisms.