

SERVICE MANUAL

SERVICE MANUAL SECTION

Pre-Delivery Inspection Master Instruction Manual

S10023

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Table of Contents

DESCRIPTION.....1

1. GENERAL INSTRUCTIONS.....3

2. INSPECTION INSTRUCTIONS.....5

DESCRIPTION

GENERAL INFORMATION

IMPORTANT – Use these instructions along with the applicable vehicle specific Pre-Delivery Inspection Report Form when inspecting a vehicle.

These instructions explain how to inspect the vehicle and use the Pre-Delivery Inspection Report Form to be sure the vehicle is ready for delivery to the customer. Each inspection operation on the report has a corresponding procedure on the following pages in this Pre-Delivery Inspection Master Instruction Manual.

The original Pre-Delivery Inspection Report Form should be retained at the PDI Facility.

NOTE – Fill in the information block on the report after the vehicle is driven into the inspection area.

The instructions described in this manual follow the order of operations listed in the Pre-Delivery Inspection Report. If a question arises while performing an inspection, use the Pre-Delivery Inspection Report Form Task Reference number as a reference to find the corresponding procedure instructions and specifications in this manual required to properly complete the inspection line item.

EXAMPLE: For a question about engine oil level, refer to the Task Reference number on the form: number 11.50. Then refer to Task Reference number 11.50 in this manual for details on how to correctly complete the task. Applicable NOTES, specifications, and warranty information are also included.

Non-Reimbursement Statement

Labor time and or materials for procedures in addition to inspections which are included as a part of the PDI (**not reimbursable as PTD 03 Warranty expense**) include but are not necessarily limited to the following:

A. PDI Preparation

- Labor to retrieve and return vehicle at PDI location and prepare inspection service bay, supplies, and tools for PDI

B. Clerical Work

- Labor and office materials to acquire and complete forms, instructions, labels, and vehicle history.
- Labor to complete and affix labels and file paperwork.

C. Vehicle Completion

- Labor and materials to install parts and/or materials shipped with or for vehicle that were not installed/ properly installed due to complications associated with vehicle delivery practices, etc.

D. Reversal of Vehicle Driveaway Company effects

- Labor and materials associated with retorquing fasteners, installing temporarily removed components, replacing rearmost axle flange gaskets (on certain specified models: See Instructions for Task Reference number 7.25. Where replacement is required during PDI, replacement parts are shipped with the vehicle so no claim for service parts is needed.). If the vehicle is received from the Driveaway company in an unacceptable condition, follow practices outlined in the New Vehicle Processing Manual.

E. General Procedures

- Labor and material expenses associated with battery charging, and general non-inspection steps, etc., necessary to complete the PDI.

F. Adjustments

- Labor associated with adjusting fluid levels, tire pressures (and steering wheel alignment and clutch adjustment on some models: See Instructions for the specific task)

G. Retorques

- Labor associated with retorquing items such as spring U-bolts, wheels, axle flanges, hose clamps, etc.

H. Programming

- Labor associated with initial programming/ reprogramming standard and optional equipment such as engines, transmissions, various ECU's, theft deterrent systems, idle reduction systems, remote keyless entry key fobs, AWARE, etc. Some recall/ update programming may be covered under PTD 03 warranty.

NOTE: If labor time of programming specific optional equipment is deemed to be excessive, the labor expense should be applied to the purchase cost of the vehicle by the Dealer Sales Department.

I. Tie Wrapping and Routing and Clipping Adjustments

- Labor and materials associated with adjusting routing and clipping and tie wraps or added clipping materials.

J. Reconnecting loose Electrical Connectors

- Labor associated with re-connecting electrical connectors that were inadvertently left disconnected or may have come apart during shipment.

K. Lubrication

- Labor and materials (grease, etc.) associated with lubricating various vehicle chassis and body components.

L. Road Test

- Labor associated with conducting a vehicle road test as specified in the road test instructions in this manual.

M. Vehicle Cleaning and Protective Coatings Removal

- Labor and materials (water, soaps, solvents, polishes, etc.) associated with the effective removal of protective coatings and their adhesives, and shipping blocks, as well as washing and cleaning the entire vehicle inside and out as needed for full customer satisfaction.

N. Consumables such as windshield washer solvent, diesel fuel, coolant additives, etc. and inspections of those items are not included in the PDI and also will not be reimbursed as warranty expense.

- O. Added engine oil (qts.), transmission fluid (pts.), drive axle oil (pts.), wheel hub oil (oz.) - materials only - will be reimbursed as 03 warranty expense. Only the cost of the quantity of fluid used should be charged as opposed to charging for the cost of the entire fluid container.
- P. Damage due to shipping should be claimed with the shipping carrier. All other repair operations should be charged to the appropriate OEM or supplier warranty.

Navistar, Inc. reserves the right to change these specifications and content at any time.

Table 1 Suggested PDI Tools

Grease Gun	Midtronics Smart Charger
Tire Pressure Gauge	Ultrasonic Leak Detector
Coolant Refractometer	Creeper
Wrenches	Axle Flange Nut Socket
1/2" Drive Ratchet	3/4" or 1/2" Drive, 12" Socket Extension
400 LB-Ft Torque Wrench	Flat Screwdriver
CD to Test CD Player	EZ Tech and Cable
Watch with Second Hand	6" (150mm) Ruler/ Tape Measure
Shop Trouble Light	Flashlight (head-mounted is best)
Ball Joint Nuts Socket	Steering Intermediate Shaft Pinch Bolts Socket
Spare Cotter Pins	Transmission Bulk Oil Pump
Oil Drain Pan	Drive Axle Bulk Oil Pump
Channel Locks	Tape Measure
Fluid container with pour spout	
2594108C1 Female Compucheck fitting that can be used to air up the ProStar.	
Basic Tool Kit to install Dealer-Installed components and perform minor corrections.	
Pump-Spray Bottle with soapy water to check for air leaks.	

1. GENERAL INSTRUCTIONS

Listed at the top of the Pre-Delivery Inspection Report Form is the title and the revision date of the form being viewed. Be sure that the title matches the model of vehicle on which a PDI is to be performed. If the form was not directly printed from ISIS on the day of the inspection, check on ISIS to verify the latest revision of the form is being used. Print out an updated form if necessary and destroy all previously printed out-of-date Pre-Delivery Inspection Report Forms and Pre-Delivery Inspection Instruction Manuals.

Boxes are provided at the top of the Pre-Delivery Inspection Report Form to link the form with the vehicle and provide specific details for future reference and documentation. The various boxes to be completed on the Pre-Delivery Inspection Report Form include:

- Vehicle Model [found on the VIN (Vehicle Identification Number) Label]
- Vehicle Build Date (found on the VIN Label)
- PDI Facility Name and Location

- The last 8 digits of the VIN
- The Miles on the Vehicle at the time of PDI
- R.O. No. (Dealer's related Repair Order Number) (if applicable)
- Customer (End user) Name and Location
- A signature line for the Service Lead Person and the signature Date. This signature certifies that all inspections, PTD (Prior To Delivery) warranty repairs, and inspection/technician signatures are completed satisfactorily and that the form has been filled out completely and correctly. This is the last step to be performed on the Pre-Delivery Inspection Report Form prior to filing it at the dealer unless there is a special request noted (such as faxing a copy of the completed form to corporate personnel). The Service Lead Person approving the Pre-Delivery Inspection Report Form is the final person protecting the end user from quality issues in the vehicle. This responsibility cannot be taken lightly.

Inspection Line items and procedures

Read the Line Item. Perform the inspection/ task as instructed in this Manual. If the Line Item has been successfully completed or the inspected components are in an acceptable condition/working order, place a mark in the corresponding box in the ACCEPT AS RECEIVED column. If the line item CANNOT be successfully completed or the inspected components are in an unacceptable condition/working order, place a mark in the corresponding box in the REWORK REQUIRED column. Also describe what the problem is in writing in the COMMENTS section at the bottom of the PDI Report Form. After the item has been adjusted/repared by the PDI Inspector (in the case of a fluid level adjustment, for example) or a technician (in the event of a PTD warranty repair), the item may be reinspected and the corresponding box in the ACCEPT AS RECEIVED column may be marked.

Comments Section

This space is used to write details pertaining to problems found during the PDI. Be sure to place the applicable task reference number to the left of the comments as a helpful reference. Comments may also include R.O.'s opened to perform PTD warranty work. Other notes may be added as desired.

Initials/ Clock Number boxes

These boxes are used to document who inspected the vehicle. Four boxes are required since one or more inspectors may be inspecting the vehicle prior to any necessary repairs. Inspectors must also affix their initials and clock number (if applicable) after re-inspecting the vehicle after repairs have been performed. The form/ vehicle may go back and forth between the Inspectors and the Repair Technicians if the repairs are not found acceptable after the first attempt. Placing a date next to any initials may be helpful as well.

A box at the bottom of the form provides additional instructive details regarding signatures, inspection standards, and PDI Report Form filing.

2. INSPECTION INSTRUCTIONS

1.10 Research VIN for Recalls / Updates

- A. Indicate on Pre-Delivery Inspection Report the vehicle Model, PDI Facility Name and Location, VIN, R.O. No. (if applicable), Customer Name and Location.
- B. Check for open AFC's and open Recalls on ISIS. Go To ISIS Vehicle Information page.
 - 1. Enter Chassis Number (Last 8 Digits of VIN)
 - 2. Check under Uptime Information for open Recalls and Open AFC's.
- C. On the same page check Calibration Status link for required engine updates and ESC updates.
- D. Document updates, any open Recalls, open AFC's, or UpTime issues in COMMENTS section of PDI Report Form.

1.20 Prepare Vehicle for PDI - Wheel Chocks



WARNING – To avoid property damage, personal injury or death, park the vehicle on a flat level surface, set the parking brake, chock the wheels and turn the engine off.

NOTE – PDI should take place in a well-lit location with a smooth level floor (a slight grade for water drainage is acceptable) to assure accurate fluid level checks.

- A. Assure vehicle has 115+ psi air pressure in the brake system per the dash gauges.
- B. Turn OFF key.
- C. Install wheel chocks to prevent vehicle movement forward or backward.
- D. On air brake vehicles, release parking brake to pressurize parking brake release circuit to assist in leak detection.
- E. Cover seats (if uncovered) and floor mat with protective coverings to protect them from dirt during PDI.

NOTE – It is recommended that clean shop floor mats made of cloth material be placed on the shop floor just outside the vehicle's cab doors to reduce the amount of dirt tracked into the vehicle interior.

3.10 Disable Hybrid System - PEC switch

Disable the Eaton HEV system by pushing in the button located on the HEV battery box.

3.20 Hybrid Service Disconnect OFF and LOCKED (Enova HEV)

- A. Locate the Hybrid Service Disconnect Switch on the Enova Battery Packs (one per pack).
- B. Disconnect the Service Disconnect Switches and lock them out with a padlock. Keep the key with you in order to ensure your safety during the PDI inspection process.

3.30 Charge Battery - Auto Max. Charge - 2 hr minimum*

* Unless Midtronics 55 amp Smart Charger is used and light on charger goes to continuous (not flashing) green in less than 2 hours. It is still recommended to keep the battery charger connected both before and after the Road Test due to the high likelihood of current draw with engine OFF during the inspection.

FOR 12V PARALLEL SYSTEMS

- A. Carefully connect smart battery charger and charge batteries for a minimum of 2 hours.*
- B. Turn charger ON at 12V automatic high rate of charge. Watch for Incorrect Hook-Up warning.
- C. Continue to charge the batteries until the green LED illuminates continuously. Continue charging after Road Test if necessary.

NOTE – If batteries are cool [less than 60 deg F (16 deg C)], moving vehicle into a heated facility will shorten charging time required. It may take up to 20 hours to achieve a full charge if the batteries are charged in a very cold [0 deg F (-17 deg C)] environment.

NOTE – For further details see the Smart Charger operator's manual on ISIS website at: <https://evaluate.internationaldelivers.com/service/spectools/PowerCharge.pdf>

3.32 IVEST Battery and Alternator Test Successful

- A. Verify documentation states that vehicle has successfully passed the factory IVEST test for Battery and Alternator performance.
- B. Document items to be repaired on PDI Report.

3.40 Batteries, Cables, Cover - routing, tight, greased

- A. Battery cable end connections in box should be tight and secure.
- B. Battery cable end connections should be protected by a dielectric grease.
- C. Cables are not kinked, crimped, pinched or rubbing when box moves.
- D. Batteries are securely fastened in box.
- E. Document items to be repaired on PDI Report.

3.50 Install loose components shipped for or with the vehicle

A. These include:

1. Tailpipes/ Vertical exhaust stacks should be fully inserted into exhaust pipe
 - Exhaust stacks should be properly aligned if applicable
 - Clamps should be tight and secure, and installed in overlapping area between upper and lower stacks
 - a. Torque Specifications:
 - Aluminized band, bright hardware - 44 to 59 ft-lbs.
 - 409 Stainless band, dull gray hardware - 35 to 46 ft-lbs.
 - If in doubt, torque to 46 ft-lbs.
 - b. Correct as needed.

NOTE: Vehicle transport personnel frequently install tailpipes. Therefore vehicles arriving with tailpipes installed should be inspected for proper tailpipe installation / bolt torques/ etc. Tailpipe installation and alignment labor is included in the PDI. Any damages to parts should be noted at the time of the receipt of the vehicle and charged to the vehicle transport service.

3. Trailer connections
4. CB antennas
5. Mud flaps
6. Cargo nets
7. Any other mounted/installed component shipped with the vehicle and not installed by the plant.

B. Document items to be repaired/ missing parts on PDI Report.

NOTE: Labor cost for air deflector installation and additional dealer added / installed components is not part of the PDI but is to be charged to the vehicle's cost via the assigned Stock Unit# / VIN / Tag# / Etc.

3.60 Mud flaps / Fenders - secure, aligned, clears exhaust

- A. Mud flaps should be securely mounted.
- B. Fenders should be properly aligned with vehicle body.
- C. Mud flaps should not hit exhaust tailpipe.
- D. Document items to be repaired on PDI Report.

NOTE – Labor for the installation and inspection of dealer supplied mudflaps is not covered under PDI.

5.10 Routing and clipping under vehicle - secured, meets specs

A. Check the following items:

1. Electrical wiring harnesses
2. Battery cables
3. Air hoses
4. Fuel hoses
5. Coolant/heater hoses
6. Power steering hoses
7. Transmission cooler / retarder lines
8. Refrigerant hoses
9. Added hydraulic equipment / hosing.

B. All cables, hoses, and wires should be:

1. Well supported every 24" (600 mm) or less
2. Free from tension
3. 5" (125 mm) from any heat source unless shielded
4. 3" (75 mm) from any heat source if shielded
5. Clear from any rub or pinch point
6. Free from kinking or pinching
7. Should NOT block access to any fluid fill, fluid drain, or inspection points
8. Compressor discharge line should be free from any low points, or "water traps"

C. Listen for audible air leaks (and optionally the Ultrasonic Leak Detector if desired). Spray a liquid soap solution on any suspect air connections. Bubbles indicate a leak.

D. Correct minor routing and clipping problems using tie wraps as needed during PDI.

NOTE: Cost of tie wraps and labor is included in PDI. Do not file for additional PTD Warranty.

E. Document items to be corrected on PDI Report.

5.11 Undercoating — no bare spots

A. Undercoating must cover entire underside of body.

B. Document items to be repaired on PDI Report.

5.12 Body Tie-Down clips — not hanging loose

A. Verify visually the locations of Body Tie-Down Clips and verify none are hanging loose.

B. Document items to be repaired on PDI Report.

5.15 Drive Wheel Hub Gear Cases Oil Level — FULL

- A. Oil level on oil-filled rear drive gear case hubs should be at or above the "OIL LEVEL" / "MINIMUM LEVEL" line on the view window, and be below the vent plug opening. Oil should not pour out if the rubber cap is removed.
- B. Add or remove oil as needed during PDI to bring level to the proper range on the hub.
- C. Verify that drain plug is snug and leak-free.

NOTE : If fluid level is within specified operating range, further fluid additions are not necessary and are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

5.20 Rearmost Drive Shaft U-joints - in-phase, retorque*

*Retorque not required for BE, CE, FE, RE Bus.

- A. Verify that the rearmost 2 driveshaft joints are in alignment with each other.
- B. If required, realign driveshaft U-Joints as part of PDI.

NOTE: Retorque as specified using new bolts and collars.

NOTE: The chances of driveshaft phase angle misalignment is greater on vehicles that have had their driveshaft disconnected during new vehicle delivery.

5.30 Shock Absorbers / Bump Stops - secure

- A. Verify that shock absorbers are securely installed
- B. Verify that bump stops are securely installed.
- C. Document items to be repaired on PDI Report.

5.35 Slack Adjusters - (Stroke <1.75" STD, <2.0" LS)*

* Specs listed in Task title are the most conservative and will work for all brake chambers. They are listed as a quick reference for convenience. Maximum acceptable legal chamber stroke specifications may be longer for larger brake chambers. Refer to the chart below.

Table 2 Maximum Legal Brake Slack Adjuster/ Chamber Stroke

Chamber Size (sq-inches)	Maximum Stroke with Standard Stroke Brake Chamber (inches)	Maximum Stroke with Long Stroke Brake Chamber (inches)
20	1.75	2.0
24	2.0	2.5
30	2.0	2.5
36	2.25	n/a

- A. Inspect the Brake Slack Adjuster/ Chamber Stroke at 90 to 100 PSI application pressure (not more or less) to assure it is less than the specifications shown in the chart above.
- B. If stroke exceeds the specification listed or over-stroke indicator is visible, brake chambers are over-stroking and slack adjusters must be adjusted.
- C. Document items to be adjusted on PDI Report.

5.36 Drive Shaft Guards - secure, aligned

- A. Verify that the Drive Shaft Guards cannot be moved by hand and that they are installed perpendicular to the driveshaft.
- B. Assure the Drive Shaft Guards are more than 1 inch away from the drive shaft at any point.
- C. Document items to be repaired on PDI Report.

5.40 Center Bearing - alignment - square and tight

- A. Verify that center bearing isolator is not out of carrier alignment.
- B. Verify that center bearing assembly mounting bolts are tight.
- C. Document items to be repaired on PDI Report.

5.45 Exhaust - secure, position, tailpipe end location

- A. Exhaust system should be securely mounted to frame.
- B. Exhaust system joints should be tight and leak free. Look for evidence of leakage such as soot or slobber around the joints.
- C. Exhaust system sensors, cables, tubes, and hoses should be tension free and should not rub any object.
- D. Exhaust tailpipe must terminate at DOT or State specified location or range.
- E. Exhaust tailpipe must not contact mud flaps or other non-exhaust components.
- F. Exhaust tailpipe must not exit within 12" laterally from any fuel fill point.
- G. Exhaust pipes routed through the bumper must be adjusted so that the tailpipe is centered in the bumper opening and that no portion of the pipe is in contact with the bumper.
- H. Document items to be repaired on PDI Report.

5.50 Air Tank Drain Valves - activate

- A. All air tank drain valves must function properly.
- B. Document items to be repaired on PDI Report.

5.55 Drive Shaft Drop Box Oil Level - FULL — torque both plugs

- A. Verify that oil level is filled level with fill port. Add fluid as needed.
- B. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

5.60 Transfer Case Oil Level - FULL — torque both plugs

- A. Verify that oil level is filled level with fill port. Add fluid as needed.
- B. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

5.65 Manual Transmission Oil Level - FULL — torque both plugs

- A. Verify that oil level is filled level with bottom of the fill plug opening. Add fluid as needed.

NOTE: Be sure to top off with the correct fluid type (synthetic/ conventional mineral oil) per Lineset Ticket, Job Information Sheet, or label on fill plug.

- B. Allow an overfilled transmission to drain excess fluid.
- C. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

NOTE: Labor is covered within PDI. Fluid added is covered under PTD Warranty.

5.70 Manual Transmission Oil Level within 1/8" (3 mm) of fill opening

- A. Verify that oil level in transmission is at or within 1/8 inch (3 mm) of the bottom of the fill plug opening.

NOTE: Fluid level is acceptable if fluid level is not more than 1/8 inch (3 mm) below the bottom of the fill hole opening. Further fluid additions are not covered by PTD Warranty.

If the fluid is more than 1/8 inch (3 mm) below the bottom of the fill plug opening, add more fluid until the oil is filled level with the bottom of the fill plug opening.

- B. Allow an overfilled transmission to drain excess fluid.
- C. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

NOTE: Labor is covered within PDI. Fluid added is covered under PTD Warranty.

5.75 Trans cooler line connector gage clips — (4) installed

- A. Verify that all (up to four) Snap-To-Connect (STC) fitting gage clips are installed on both ends of the two Transmission Oil Cooler hoses to assure the STC fittings are fully latched.
- B. If the STC fitting gage clips are not present, verify that the cooler hose sections are fully latched by grasping the tubing on each side of the connections and forcefully pushing the connectors together. Then pull forcefully on each side of the connection in order to assure that they are fully connected.

CAUTION – Failure to fully latch the STC fittings can allow the fittings to come apart during use, resulting in transmission failure due to oil loss.

- C. Document any missing clips that need to be added on PDI Report.

5.76 Trans cooler line connector gage clips — (2) installed

- A. Verify that all Snap-To-Connect (STC) fitting gage clips are installed on radiator end of the two Transmission Oil Cooler hoses to assure the STC fittings are fully latched.
- B. If the STC fitting gage clips are not present, verify that the cooler hose sections are fully latched by grasping the tubing on each side of the connections and forcefully pushing the connectors together. Then pull forcefully on each side of the connection in order to assure that they are fully connected.

CAUTION – Failure to fully latch the STC fittings can allow the fittings to come apart during use, resulting in transmission failure due to oil loss.

- C. Document any missing clips that need to be added on PDI Report.

5.80 Cotter keys / lock tabs spread - steering / brakes

- A. Verify cotter pins or lock tabs are present and spread.
- B. Document, on PDI Report, missing or damaged cotter keys or lock tabs to be corrected.

5.85 Starter, Ground Connections - tight, greased

- A. Inspect cable end tightness. Connections should be tight and coated with dielectric grease.
- B. Cable ends make no contact with other vehicle hardware.
- C. Document items to be repaired on PDI Report.

5.90 Lubricate chassis - zerks, door/ bumper hinges

- A. Lubricate all grease zerks (typically a quantity of 33 total zerks) including:
 - King Pins (4 zerks) and King Pin Thrust Bearings (2) with vehicle weight on tires
 - Tie Rod Ends (2)
 - Drag Link Ends (2)
 - Steering Intermediate Shaft (2) U-Joints and (1) Slip Joint

NOTE: Synthetic Mobilith 100 Grease part number 2595564C1 must be used on 16-spline PROStar steering intermediate shaft slip joint (See TSI 07-05-01). 6-spline shafts may use normal chassis grease.

- Steering Gear Dust Seal (1) (Not present on some steering gears.)

CAUTION: Only use a hand-operated grease gun on Steering Gear Dust Seal grease zerk (if present)! Using a power grease gun will blow out the seal!

- Brake Cam Shafts (6) on 6x4, (4) on 4x2
- Brake Slack Adjusters (6) on 6x4, (4) on 4x2
- Drive Shaft U-Joints (2 to 5) (10-Series Drive Shafts Only!)
- Drive Shaft Slip Joints (2) on 6x4, (1) on 4x2 (10-Series Drive Shafts Only!)

NOTE: DO NOT add grease to SPL XL Drive Shaft (easily identified by having a plastic bellows covering the slip joints). It has synthetic lube from the factory. The zerks are covered with plastic caps which should be left in place. Only grease "10-Series" Drive Shafts.

- Transmission Clutch Cross Shaft Bushings (2)
- Transmission Clutch Throw-out Bearing (1)
- 5th Wheel Pivot Pins (0 to 4)
- 5th Wheel Slider Mechanism (0 to 4)
- 5th Wheel Top Plate and Locking Jaw (additional details covered in separate 5th Wheel line item)

- B. Lubricate Door Hinges and Door Check-Links with spray white Lithium grease.
- C. Lubricate Bumper hinges with spray white Lithium grease.

NOTE: Labor and cost of Lubricant materials to lubricate chassis are included within PDI. Do not include in PTD Warranty.

5.92 Joints Lubricated — verify zerks and doors lubed

A. Verify all grease zerks are installed and have received lubricant including (if applicable):

- King Pins (4 zerks) and King Pin Thrust Bearings (2) with vehicle weight on tires
- Tie Rod Ends (2)
- Drag Link Ends (2)
- Steering Intermediate Shaft (2) U-Joints and (1) Slip Joint
- Brake Cam Shafts (6) on 6x4, (4) on 4x2
- Brake Slack Adjusters (6) on 6x4, (4) on 4x2
- Drive Shaft U-Joints (2 to 5) (10-Series Drive Shafts Only!)
- Drive Shaft Slip Joints (2) on 6x4, (1) on 4x2 (10-Series Drive Shafts Only!)

NOTE: DO NOT add grease to SPL XL Drive Shaft (easily identified by having a plastic bellows covering the slip joints). It has synthetic lube from the factory. The zerks are covered with plastic caps which should be left in place. Only grease "10-Series" Drive Shafts.

- Transmission Clutch Cross Shaft Bushings (2)
- Transmission Clutch Throw-out Bearing (1)
- 5th Wheel Pivot Pins (0 to 4)
- 5th Wheel Slider Mechanism (0 to 4)
- 5th Wheel Top Plate and Locking Jaw (additional details covered in separate 5th Wheel line item)
- Door hinge zerks

B. Verify Door Hinges and Door Check-Links have been lubricated.

C. Lube missed joints or document items that still need to be lubed on PDI Report.

5.95 Axle Spring U-bolts - retorque (See Torque Chart)

Table 3 U-Bolt Nut Torque Chart

U-Bolt Dia. (Nominal)	Torque: Ft-lbs.	Torque: Nm
5/8 Inch Flanged Lock Nut	130-160	176-217
3/4 Inch Flanged Lock Nut	200-240	271-325
7/8 Inch Hex Head With Washer	260-300	350-380
1 Inch Hex Head With Washer	325-400	441-543

7.10 Chassis Air Suspension Ride Height - (set to spec)

- A. Refer to TSI 06-03-01 for specifications.
- B. Document items to be repaired/ adjusted on PDI Report.

7.15 Fifth Wheel - lubed, functions, secured

NOTE: Labor and cost of Lubricant materials to lubricate chassis/ 5th wheel are included within PDI. Do not include in PTD Warranty.

- A. Refer to the correct operator's manual for proper lubrication procedures.
- B. Lubricate 5th Wheel Top Plate and Locking Jaw, if applicable. On Fontaine 5th wheels, close the jaw by pushing forward on the lower section of the jaw with a long shaft and then separate the locking jaw from the wedge with a screwdriver and install grease into the gap so that the contact surface between the two parts is well lubricated. This will keep the two parts from sticking together and locking-up the jaw mechanism later.
- C. Fifth wheel should lock / unlock smoothly and fully.

NOTE: Activate hand-operated Jaw Release (and electrically operated feature if present).

- D. Sliding fifth wheel should be secure and tight in locked position.
- E. Document major component issues to be repaired on PDI Report.

7.20 Pintle Hook - locks, releases, secure

- A. Pintle hook and mounting hardware should be tight and secure.
- B. Pintle hook should release and open easily.
- C. Pintle hook should lock securely.
- D. Attempt to correct with lubrication during PDI.
- E. Document items to be repaired on PDI Report.

7.25 Replace 2 rear axle gaskets if removed by shipper

NOTE: All PROStar and LONESTar tractors are equipped with two additional new axle shaft gaskets (if needed) which can be found in the Required Documents envelope in the cab. DO NOT apply cost of gaskets to PTD 03 Warranty.

NOTE: Labor to replace gaskets as well as lube cleanup is included in PDI. DO NOT apply to PTD Warranty.

NOTE: Labor and materials for reinstallation of backed-out hub studs is covered within the PDI. DO NOT apply to PTD Warranty.

NOTE: Rearmost axle shaft gaskets replaced during PDI by the PDI facility are not eligible for In-Service (01) Warranty. Parts and labor costs for repair of leaking dealer installed gaskets (at PDI) are the responsibility of the facility performing the PDI/ party replacing the original gasket at PDI.

- A. Determine if the axle shaft gasket is leaking or is not leaking but has evidence of axle removal from the rearmost drive axle during vehicle transport. Indications that an axle shaft has been removed may include:
- The axle shaft flange and or its fasteners may have scratched or chipped paint.
 - The axle hub and/or wheel rim may have evidence of axle lubricant that has dripped onto them.

NOTE: IF THE REARMOST AXLE SHOWS NO EVIDENCE OF HAVING ITS AXLE SHAFTS REMOVED, DO NOT REPLACE THE AXLE SHAFT GASKETS. ACCEPT AS-IS AND MOVE TO NEXT LINE ITEM.

- B. If a rearmost axle shaft is leaking or is not leaking but has evidence of axle removal, the dealer is to install a new axle shaft flange gasket on both ends of the axle using the following specific procedures:
1. Make sure the Dif-Lock (if present) has been engaged to avoid axle shaft-to-differential misalignment upon axle shaft reinsertion.
 2. Remove the right and left axle shafts on the suspect axle. Be sure not to allow the axle shaft to touch any dirty surfaces.
 3. Wipe clean and inspect the axle shaft flange and wheel hub machined mating surfaces for damage.
 - If damage is found, document items to be repaired on PDI Report.
 4. If any studs are found to have backed out of the hub, be sure to use a thread-locking liquid on the inserted section of the threads before reinstallation and install to the correct depth.
 5. Place the new axle flange gasket over the hub studs and fully seat it against the hub.
 6. Carefully reinstall the axle shaft, and make sure not to nick the new gasket. If damage occurs, install a new gasket.
 7. Snug the axle flange fasteners with a hand operated wrench. **DO NOT USE AN IMPACT WRENCH AS IT CAN DAMAGE THE GASKET AND CAUSE A LEAK!**
 8. Tighten the nuts in steps in a star pattern with a torque wrench to the specified torque. Refer to the Table below.
- C. Wipe off any visible axle lubricant.

Table 4 Axle Flange Nut and Bolt Torque Chart

Size	Grade/Type	Torque: Ft-Lbs.	Torque: Nm
5/8-18	8/Washer	145-175	197-237
5/8-18	5/Nylok	106-125	143-170
9/16-18	8/Washer	105-125	143-170
9/16-18	5/Nylok	96-116	129-156
3/4-16	8/Washer	250-300	340-410
3/4-16	5/Nylok	219-240	294-325
3/4-10	8/Washer	250-300	340-410
3/4-10	5/Nylok	219-240	294-325

7.30 Axle Flange Nuts - retorque (see Torque Chart above)

7.35 Drive Axle Oil Level FULL (all drive axles)

- A. Verify vehicle is on level ground. If not, move vehicle to level ground.
- B. Verify that oil level in all Drive Axle(s) is at the bottom of the fill plug opening.
- C. Allow an overfilled Drive Axle to drain excess fluid.
- D. Add fluid as needed.

NOTE: Be sure to top off with the correct fluid type (synthetic/ conventional mineral oil) per Lineset Ticket, Job Information Sheet, or label on fill plug.

- E. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

NOTE – Labor is covered within PDI. Fluid added is covered under PTD Warranty.

7.40 Drive Axle Oil Level within 1/8" (3 mm) of fill plug opening

- A. Verify vehicle is on level ground. If not, move vehicle to level ground.
- B. Verify that oil level in all Drive Axle(s) is at or within 1/8 inch (3 mm) of the bottom of the fill plug opening.

NOTE: Fluid level is acceptable if fluid level is not more than 1/8 inch (3 mm) below the bottom of the fill hole opening. Further fluid additions are not covered by PTD Warranty.

If the fluid is more than 1/8 inch (3 mm) below the bottom of the fill plug opening, add more fluid until the oil is filled level with the bottom of the fill plug opening. (Labor covered within PDI. Fluid covered under PTD 03 Warranty.)

- C. Allow an overfilled Drive Axle to drain excess fluid.
- D. Add fluid as needed.

NOTE: Be sure to top off with the correct fluid type (synthetic/ conventional mineral oil) per Lineset Ticket, Job Information Sheet, or label on fill plug.

- E. Verify that the fill plug and the drain plug are torqued to spec. and leak-free.

NOTE – Labor is covered within PDI. Fluid added is covered under PTD Warranty.

7.45 Wheel Lug Nuts - retorque to 450 — 500 lb-ft

- A. Check torque on all wheel mounting nuts
- B. Torque should be 450 — 500 lb-ft (610 — 678 Nm).

7.50 Front Wheel Lug Nuts - retorque 450 - 500 lb-ft

NOTE – Re-torque is required on Front Wheels only since some front wheels are removed during vehicle transport. Re-torque of rear wheels is not included in PDI.

- A. Turn front wheels slightly to the right to provide clearance between the torque wrench handle and the side of the vehicle to reduce the chances of scratching the vehicle bodywork.

- B. Determine nut size, type, and torque specification.
- C. Re-torque all wheel rim nuts following the proper tightening sequence.
- D. Refer to the Wheels, Rims, and Tires section in GROUP 17 of the Master Service Manual or the appropriate Operator's Manual for additional information.

Table 5 Disc Wheel Torque Chart

Size	Nut Mounting	Torque	
		lbf – ft	N.m
22mm	Flange: Motor Wheel - 37.5mm Across Flats	450-500	610-678
22mm	Flange: International/Budd - 33mm Across Flats	450-500	610-678
NOTE – Do not use lubrication on dry threads.			

7.55 Tires - proper inflation, valve stem caps are tight

NOTE – Tires may come from the vendor inflated above the maximum pressure indicated on the sidewall.

- A. Tire pressure should be checked with a pressure gauge that is calibrated at least 4 times per year.
 - An air tire valve chuck with an integral dial pressure gage will speed up this process.
- B. Typically, rear/ drive tires should be inflated to the same pressure between 90 psi and the "MAX LOAD DUAL" tire pressure listed on the sidewall, and all rear/ drive tires should be within 10 psi of each other. Use these specs unless the end user has requested a special tire pressure.
- C. Front tires should be inflated to the "MAX LOAD SINGLE" tire pressure listed on the sidewall + 5 / -5 PSI.
- D. Correct tire pressure as needed during PDI
- E. Re-install metal valve stem caps tightly.
- F. If one or more tires of a like kind is more than 15 PSI lower in pressure than the other tires of like kind, document tire(s) to be inspected for slow leaks on PDI Report.

7.60 Front Hub and/or Lift Axle Oil Level - in range

- A. Oil level on oil filled front hubs should be between indicators.
- B. Add or remove appropriate oil as needed to bring level to the indicator circle on the hub.

NOTE – If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

7.65 Cab Tilt / Assist / Latch / Lockout Mechanisms

- A. Cab should tilt smoothly, easily, quietly.
- B. Cab tilt lock-out should work properly
- C. First latch works properly - catch and release.
- D. Secondary latch works properly - catch and release.
- E. Mechanism latches cab firmly.
- F. Document items to be repaired on PDI Report.

7.70 Compartments - keys, latches, lights, hinges, aligned

For all Battery/ Electrical/ Luggage/ Fuel Fill/ Engine Access/ Skirts/ APU/ Etc. Compartments:

- A. Door and Latch open and close fully and easily.
- B. Latch is adjusted to hold door tightly closed with no rattling, but not so tight that it makes it difficult to latch/unlatch.
- C. Key locks/unlocks lock if lock is present.
- D. Check function of all compartment lights.
- E. Light(s) turn on and off with door open/close if so designed.
- F. Free from other obvious defects.
- G. Document items to be repaired on PDI Report.

7.75 Cab Extenders and Skirts - secure, alignment

- A. Cab extenders and Chassis Skirts should be properly aligned and securely mounted.
- B. Document items to be repaired on PDI Report.

7.80 Cab Ride Height - re-attach linkage

NOTE – The cab air bag(s) may not inflate if there is not at least 110 PSI air pressure on both air pressure gages on the dashboard.

- A. If the truck has a wooden block supporting the cab, remove it.
- B. Reconnect the height control valve linkage.

NOTE: It should not be necessary to adjust the height after the linkage is connected. The height valve linkage should not be disassembled or the locknut (if applicable) loosened. It should have been merely disconnected at one of its mounting points thus maintaining its proper length set at the factory.

NOTE: Measuring or resetting the cab height is not covered under PDI.

- C. Document items to be repaired/ missing parts on PDI Report.

9.10 Tow Hooks / Loops / Pins - present, secure

- A. Tow hooks should be securely mounted to the frame.
- B. If tow hooks are removable, frame mount must be securely mounted to frame.
- C. If tow hooks are removable, tow hooks must be secure in their storage area.
- D. Document items to be repaired on PDI Report.

9.20 Remove Protective Coverings, Tags, Tape

- A. Remove protective coatings from entire vehicle except for plastic seat covers.
- B. Remove any adhesives left behind after protective coatings are removed.
- C. Document items to be repaired on PDI Report.

9.30 External Paint, Exterior components - condition, fit

- A. Remove any protective coatings added for shipping.
- B. External painted/unpainted and plated surfaces should be free from runs, scratches, scuffs, dents, bumps, holes, or other obvious defects.
- C. Hood and trim pieces should be securely affixed and aligned, and in good condition.
- D. Chrome surfaces should be free from cracks, bubbles, scuffs, or other obvious defects.
- E. Mirrors, Bumper and Chassis Skirts should be securely mounted and in good condition.
- F. Document items to be corrected and any other body damage on PDI Report.

9.31 External Paint, Components - condition, fit per B9.31

General guidelines **in addition to Bus Inspection Spec B9.31**:

- A. Remove any protective coatings added for shipping.
- B. External painted/unpainted and plated surfaces should be free from runs, scratches, scuffs, dents, bumps, holes, or other obvious defects.
- C. Hood and trim pieces should be securely affixed and aligned, and in good condition.
- D. Chrome surfaces should be free from cracks, bubbles, scuffs, or other obvious defects.
- E. Mirrors, Bumper and Chassis Skirts should be securely mounted and in good condition.
- F. Document items to be corrected and any other body damage on PDI Report.

9.40 Windshield and glass - no damage

- A. Windshield and other glass should be free from cracks, stars, chips, or other obvious defects.
- B. Document items to be corrected on PDI Report.

9.50 Hood Fit - secured, good alignment

- A. Hood should be properly aligned with cab, lower fender extensions, and bumper.
- B. Hood latches should be easily operated.
- C. Document items to be corrected on PDI Report.

11.10 Steering Shaft Pinch Bolts - both torqued off

- A. Pinch bolts should be twisted off at each end of steering intermediate shaft.
 - Feel or look to see that the top surface of the head of the pinch bolt is relatively smooth and that the 5/16" (8mm) hex head has been removed during the torquing process. A round raw steel fractured circle can be seen where the hex head fractured off.
- B. Re-torque if required (included in PDI labor).
- C. Document items to be repaired on PDI Report.

11.15 Air Filter Snorkel Boot — fully attached

NOTE – The engine air filter Snorkel Boot may have been pulled loose because it was used inappropriately as a grab handle.

- A. Carefully verify Snorkel Boot is fully connected to the air filter housing as designed. Must prevent dust / water/ underhood air entry at joint.
- B. Re-attach Snorkel Boot if necessary during PDI.
- C. Air filter should be securely installed.
- D. Document items to be repaired on PDI Report.

11.20 Turbo downpipe - secure, no contact with hardware

- A. Verify Turbo to Downpipe connection is secure and well positioned.
- B. Downpipe makes no contact with other vehicle hardware.
- C. Document items to be repaired on PDI Report.

11.25 Alternator Connections - tight, greased

- A. Inspect cable end tightness. Connections should be tight and coated with dielectric grease.
- B. Cable ends make no contact with other vehicle hardware.
- C. Document items to be repaired on PDI Report.

11.30 Underhood route and clip - secure, meets specs

A. Check the following items:

1. Electrical wiring harnesses
2. Battery cables
3. Air hoses
4. Fuel hoses
5. Coolant/heater hoses
6. Power steering hoses
7. Transmission cooler / retarder lines
8. Refrigerant hoses
9. Add-on hydraulic hosing.

B. All cables, hoses, and wires should be:

1. Well supported every 24" or less
2. Free from tension
3. 5" (125 mm) from any heat source unless shielded
4. 3" (75 mm) from any heat source if shielded
5. Clear from any rub or pinch point
6. Free from kinking or pinching
7. Should NOT block access to any fluid fill, fluid drain, or inspection points
8. Compressor discharge line should be free from any low points, or "water traps"

C. Listen for audible air leaks (and optionally the Ultrasonic Leak Detector if desired). Spray a liquid soap solution on any suspect air connections. Bubbles indicate a leak.

D. Correct minor routing and clipping problems using tie wraps as needed during PDI.

NOTE: Cost of tie wraps and labor is included in PDI. Do not file for additional PTD Warranty.

E. Document items to be corrected on PDI Report.

11.35 Underhood wire connections - latched / tight

- A. Verify all wire harness electrical connections are securely latched.
- B. Re-latch as needed during PDI.
- C. Document items to be corrected on PDI Report.

11.40 Underhood hose clamps - tight, position

- A. Verify clamp orientation allows good access.

B. For hose clamps:

1. Aluminum pipe, re-tighten to 50 - 60 in-lbs.
2. Steel pipe, re-tighten to 70 - 75 in-lbs.

11.45 *Engine accessory drive belt(s) - proper alignment*

- A. Engine accessory drive belt(s) should be properly seated on all pulleys.
- B. Engine accessory drive belt automatic tensioner(s) should maintain appropriate tension on belt(s).
- C. Correct as needed.

11.46 *RE Bus Engine drive belt(s) — alignment, tension*

- A. Engine accessory drive belt(s) should be properly seated on all pulleys.
- B. Engine accessory drive belt automatic tensioner(s) should maintain appropriate tension on belt(s).
- C. Document items to be repaired on PDI Report.

11.50 *Engine Oil Level - in upper half of range*

NOTE: Engine should be turned OFF for at least 5 minutes before checking level to allow oil to drain to oil pan.

- A. Engine oil level in upper half of ADD-FULL range on dipstick is considered acceptable as-is.
- B. Add or drain oil as needed during PDI to put fluid level in acceptable range.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

11.55 *Washer Fluid Level — over half full*

- A. Washer fluid level should be half-full or higher. Add fluid as required.

NOTE: Washer fluid added is at dealer labor and material expense to be charged toward purchase cost of vehicle. Do not charge to PTD Warranty.

11.60 *Open All Coolant/ Heater Valves*

- A. Open all coolant valves on vehicle prior to Road Test so that coolant circulates through all circuits.

NOTE: Some installations have two hand valves in the engine compartment. Some valves on buses may be under the vehicle.

13.10 *2 Keys + 2 Fuel Cap Keys, and Keyless Entry work*

- A. Verify two ignition keys are present.
- B. Two Fuel Tank Locking Caps (optional) should be attached to vehicle keys. Test keys in fuel caps or fuel doors.

- C. Remote Keyless Entry (RKE) Fobs (optional) are present and functional

NOTE: If RKE Fobs are not initially functional, refer to TSI 07–08–03 for programming instructions.

- D. Document items to be repaired/ missing parts on PDI Report.

13.11 *Fire Extinguisher/ Reflector Kit - fit, secured, full*

- A. If specified, Fire Extinguisher is installed squarely and tightly in the designed location and the latch stays latched.
- B. If specified, Warning Reflector Flare Kit is installed squarely in the designed location and the kit is secure.
- C. Assure Fire Extinguisher is full (per gage on unit) and Reflector Kit contains 3 triangles.
- D. Document items to be repaired on PDI Report.

13.12 *First Aid Kit/ Body Fluid Kit - location, contents*

- A. If specified, verify that the First Aid Kit and or Body Fluid Kit is installed squarely in the designed location and the latch, if used, stays latched.
- B. If present, verify that the First Aid Kit and or Body Fluid Kit contain the materials specified by design.
- C. Document items to be repaired on PDI Report.

13.13 *Doors - adjusted and work properly*

- A. Includes:
 - 1. Entry Doors
 - 2. Emergency Exits
 - 3. Luggage Doors
- B. Includes:
 - 1. Latches
 - 2. Locks (Manual and Power)
 - 3. Hinges
 - 4. Stops
 - 5. Air or Electrical Actuators
 - 6. Warning Buzzers and/or Lights
- C. Document items to be repaired on PDI Report.

13.14 *16 & 8-Way Lights - operate with key ON and OFF*

- A. Verify the 16 & 8-Way Lights illuminate as designed with the ignition OFF.

- B. Verify the 16 & 8-Way Lights illuminate as designed with the ignition ON.

NOTE: Use of mirrors in inspection bay is recommended.

- C. Document items to be repaired on PDI Report.

13.15 *Crossing Gate/ Stop Sign - with key ON and OFF*

If present

- A. Verify the Crossing Gate and Stop Sign(s) extend (and illuminate if applicable) as designed with the ignition OFF.
- B. Verify the Crossing Gate and Stop Sign(s) extend (and illuminate if applicable) as designed with the ignition ON.

NOTE: Use of mirrors in inspection bay is recommended.

- C. Document items to be repaired on PDI Report.

13.16 *Lights - exterior, instrument panel, interior, sleeper*

NOTE: Use Automated Light Check feature if equipped.

- With engine not running, Manual (not automated-manual) transmission (if equipped) in Reverse and ignition key ON

Press and hold Work Light/ Lamp switch for at least 2 seconds and release.

- If equipped dash and exterior lights will automatically cycle on and off.
 - A. Check interior lights, dome lights, sleeper lights (ceiling, reading, under bunk) and all exterior lights including steering wheel-mounted switches such as Bus Flashers, Headlight Interrupt Switch and Marker Light Interrupt Switch.
- NOTE:** Use of mirrors in inspection bay is recommended.
- B. Document items to be repaired on PDI Report.

13.18 *Wheelchair Lift/Door - fit, function, buzzer, light, interlock*

If present:

- A. Assure the wheels are chocked.
- B. Start the vehicle, shift into Drive, release the Parking Brake, turn the vehicle OFF (but DO NOT set the Parking Brake or move the shifter!!!)
- C. Exit the vehicle and verify (if specified) the buzzer and light are activated when the Wheelchair Lift Door is opened.
- D. With the Lift Door still open, verify that the Wheelchair Lift interlock prevents the Wheelchair Lift from operating.
- E. With the Lift Door still open, Shift transmission to Neutral or Park and verify the vehicle interlock prevents the vehicle from starting.

- F. With the Lift Door still open, also apply the Parking Brake and verify the vehicle interlock prevents the vehicle from starting.
- G. Close the Lift Door and verify the vehicle interlock allows the vehicle to start.
- H. Shift to Park (if present) or Neutral (if no Park position), apply the Parking Brake, shut OFF the ignition.
- I. Open the Wheelchair Lift Door and verify (if specified) the buzzer and light are activated when the Wheelchair Lift Door is opened.
- J. With the Lift Door open, verify that the Wheelchair Lift operates fully and properly.
- K. Verify that there are no fit or functional problems with the Wheelchair Lift or Wheelchair Lift Door.
- L. Verify (if specified) the buzzer and light are de-activated when the Wheelchair Lift Door is closed.
- M. Document items to be repaired on PDI Report.

13.19 *Windshield Wiper / Washer, Windshield — functional*

- A. Verify windshield wipers work in all positions (HI/LO/Intermittent/OFF) and do not contact each other or window frames. **NOTE:** If windshield is exceptionally dirty, wipe off windshield with clean cloth prior to wiper test to avoid scratching the windshield.

NOTE: Windshield washer fluid addition and level inspection are not covered by PDI.

- B. All washer fluid nozzles spray in acceptable pattern.
- C. Windshield is clean and free of cracks/ damage.
- D. Document items to be repaired on PDI Report.

13.22 *Radio / CD / VID/ Speakers - fit, function (as equipped)*

- A. Radio/CD Player (optional) - Controls: Volume, AM FM, Station Change, CD Player, and Speakers function properly. **NOTE:** Remember to remove CD immediately so it will not be left behind.
- B. Optional Vehicle Information Display (VID) turns on and buttons work.
- C. Exposed Speakers fit squarely and tightly.
- D. Document items to be repaired on PDI Report.

13.24 *Mirrors - condition, mounting, adjustment*

- A. Verify proper function, mounting integrity, condition, and adjustability of all manual and or motorized mirrors both inside and outside vehicle.
- B. Document items to be repaired on PDI Report.

13.25 *Steering Wheel, Dif-lock, PDL, Susp Dump, Mirrors*

NOTE: Be sure the vehicle has 120 PSI air pressure or some optional equipment may not function.

A. (If present) Verify proper function and or condition of:

1. Steering Wheel/ optional Tilt-Telescopic Steering Wheel
2. Differential Locks should lock and release properly as denoted by auditory engagement and disengagement.
3. Power Divider should lock and release properly as denoted by auditory engagement and disengagement.
4. Rear Air Suspension Dump - rear frame lowers and raises as selected.
5. Mirror, manual or motorized.

B. Document items to be repaired on PDI Report.

13.27 *Roof Hatches/ Emergency Doors - function, buzzers*

- A. Verify Roof Hatches/ Emergency Doors/ Emergency Windows open and close properly without binding, chattering, or excessive effort.
- B. If equipped, verify applicable buzzers function as ordered.
- C. Document items to be repaired on PDI Report.

13.28 *Windows - open/ close properly — no damage*

- A. Windows should open and close properly without binding, chattering, or excessive effort.
- B. Verify Bus Emergency Exit Windows open easily and fully and have decals affixed.
- C. Document items to be repaired on PDI Report.

13.29 *Child Check System - function, all decals*

- A. Verify Child Check System functions correctly by following directions on operating instructions decal.
- B. Verify Child Check System operating instructions decal is properly affixed.
- C. Document items to be repaired on PDI Report.

13.31 *Interior components and floor mat - condition, secure*

- A. Verify Interior components are neat and fit properly.
- B. Verify Interior components are clean.
- C. Verify Interior components are well secured.
- D. Document items to be repaired on PDI Report.

13.34 *Restraints, seats, windows, mirrors*

A. Verify Proper installation, anchorage, condition, and operation of:

1. Seats and Seat Belts.
2. Windows and windshield
3. Mirrors/ Electric Mirrors

- B. Document items to be repaired on PDI Report.

13.36 *Passenger Seats/Restraints - installation condition*

- A. Verify Proper installation and condition of Seats and Seat Belts.
- B. Document items to be repaired on PDI Report.

13.37 *Passenger Area - restraints, seat(s), windows, mirrors*

- A. Verify Proper installation, condition, and operation of:
 - 1. Seats and Seat Belts.
 - 2. Windows and windshield
 - 3. Mirrors/ Electric Mirrors
- B. Document items to be repaired on PDI Report.

13.39 *Driver's Seat/ Restraints - secured, condition, functional*

- A. Verify Proper installation, condition, and operation of Seats and Seat Belts.
- B. Document items to be repaired on PDI Report.

13.40 *Driver's Area - restraints, seat, windows, mirrors*

- A. Verify proper installation, condition, and operation of:
 - 1. Seats and Seat Belts.
 - 2. Windows and windshield
 - 3. Mirrors/ Electric Mirrors
- B. Document items to be repaired on PDI Report.

13.43 *Driver's Area Hybrid Decals are installed*

- A. Verify Driver's Area Hybrid Decals are installed.
- B. Document items to be repaired on PDI Report.

13.46 *Sleeper Accessories - are clean, secure, function*

- A. Verify sleeper controls and accessories are neatly installed and secure.
- B. Verify sleeper controls and accessories are clean and undamaged.
- C. Verify sleeper controls and accessories (including, but not limited to HVAC, Voltage inverter, TV, appliances, folding upper bunk or fold-out lower bed, etc.) function properly. Plug in a 120 volt light to assure inverter (if present) operation.
- D. Document items to be repaired on PDI Report.

13.49 Inverter - Turn On - powers 110V appliance (10A max)

- A. Inverter should power 110V appliance of 10A or less current draw.
- B. Inverter should be well secured.
- C. Document items to be repaired on PDI Report.

13.52 Auxiliary Coolant Heater - functions, secure

- A. Auxiliary Heater should function.
- B. Auxiliary Heater should be well secured.
- C. Document items to be repaired on PDI Report.

13.55 Engine Cover Fit - FE only

- A. Verify that engine cover fits well and does not move at all when tugged or rocked.
- B. Engine cover should seal engine heat and fumes.
- C. Document items to be repaired on PDI Report.

13.58 Clear Inactive Fault Codes

- A. Observe and document as-received fault codes using in-cab method, or Vehicle Information Display, EZ Tech, or applicable device.
- B. Clear inactive fault codes.
- C. Document active fault codes on PDI Report and complete associated repairs prior to Road Test if necessary.

13.61 Gauges sweep/ Dash warning lights ON then OFF

(Multiplexed Instrument Panel Systems only)

NOTE: Air pressure gauges on 5000i and 9000i Series vehicles may not self recalibrate because they are not multiplexed. This is acceptable.

- A. With engine off and key moved from OFF to ON position, gauges (except air pressure) will reset by moving counter clockwise (or in some cases, clockwise) against internal stop and then to actual reading position.
- B. On RE and FE buses, the gauges will make a full sweep and then return.
- C. If any gauge goes to 6 o'clock position, data is out of range or not available.
- D. Verify operation of all warning lamps - With engine off and key moved from OFF to ON position, warning lights will illuminate momentarily.

NOTE: It is acceptable for some warning lights such as Parking Brake or low air pressure to remain illuminated where applicable.

- E. Document component defects to be repaired on PDI Report.

13.64 *Starter only Cranks in N, P, or with Clutch depressed*

Automatic Transmission/ Automated Manual Transmission without clutch pedal:

- A. Select all gear ranges and turn key to START position. Starter MUST NOT ACTIVATE except in NEUTRAL or PARK position.

NOTE: Some Automated Manual Transmissions will start with R or D selected and blinking; however, R or D are not attained and the N selector button light will illuminate automatically after the engine starts.

- B. Start vehicle.
- C. Document items to be repaired on PDI Report.

Manual Transmission/ Automated Manual Transmission with clutch pedal:

- A. Starter MUST NOT ACTIVATE except when clutch pedal is depressed.
- B. Start vehicle.
- C. Document items to be repaired on PDI Report.

13.67 *Starter only Cranks in P (test 12V starter)*

13.70 *Turn off engine*

13.73 *HEV Service Disconnect ON 2 minutes before START*

13.76 *Hybrid Enable switch ON*

- A. Turn HEV switch to the ON position.

15.10 *Hydraulic Brake Fluid Level*

FULL POWER SYSTEM:

- A. Turn key ON if engine is not already running. Pump brake pedal quickly five times. Wait until pump motors stop running.
- B. Hydraulic Brake fluid level should register between midpoint of MIN-MAX indicators and MAX indicator on transparent reservoir.
- C. DO NOT OVERFILL. Reservoir can appear to be overfilled when key is in OFF position. Add appropriate fluid as needed to correct fluid level.

HYDROMAX SYSTEM:

- A. The fluid level must be up to the bottom edge of the ring on each reservoir fill port.
- B. DO NOT fill to the top of the reservoir.
- C. Add appropriate fluid as needed to correct fluid level.

OTHER SYSTEMS:

- A. The fluid level should be within the acceptable fluid range.
- B. DO NOT OVERFILL.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

NOTE: Brake fluid is extremely harmful to paint. DO NOT allow brake fluid to contact painted surfaces.

15.20 Automatic Transmission Fluid Level - in COLD range

- A. With vehicle transmission/ coolant cold and vehicle running and in neutral or park position, check transmission fluid level. Fluid level should register in COLD range.
- B. Add appropriate fluid as needed to correct fluid level.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

15.30 Power Steering Fluid Level - in COLD range

- A. Fluid level should register between COLD MIN and COLD MAX marks on reservoir or dipstick.
- B. Add or drain appropriate fluid as needed to correct fluid level.

NOTE: To prevent a hot overfill, fluid must be drained from reservoir if fluid is cold and above COLD MAX line.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

15.40 Coolant Level - above mid range/ lower view eye

- A. Verify acceptable COLD Coolant level:
 - 1. Translucent Surge Tank:
 - Coolant level should register between midpoint of MIN-MAX indicators and 1" (25 mm) over MAX indicator on Surge Tank.
 - 2. View-Eye equipped Surge Tank:
 - Coolant level must at least cover the lower view-eye on Surge Tank.
 - Coolant level may cover both the lower and upper view-eyes on Surge Tank.
- B. Add similar type of coolant as needed.

NOTE: Use a 50/50 mix of coolant and water or a 50/50 pre-mix.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

15.50 Hybrid System Coolant Level - upper half of range

- A. The HEV system coolant level should be above half full in the indicated range.
- B. Add coolant as needed.

17.00 ROAD TEST - Achieve 55 mph (88 kph) ~20 minutes

- A. Pre-Planned Road Test Course should be nominally 6 miles (10km) and should include
 - 1. Reverse operation.
 - 2. Full-lock turns in right and left directions.
 - 3. Road speed of 55 mph/ 90 kph or higher.
 - 4. A section of rough pavement to evaluate squeaks, rattles, ride, etc.
- B. Before starting the Road Test:
 - 1. Be sure the Battery Charger has been disconnected and the Battery Box Cover and Chassis Skirts have been reinstalled.
 - 2. Be sure the Bumper, Hood, Luggage Doors, Passenger Door, Trailer connections, etc. are securely fastened/ closed.
 - 3. Be sure the vehicle has enough fuel to complete the test.
 - 4. Be sure the vehicle is adequately licensed and insured.
 - 5. Be sure the Driver has a valid Commercial Driver's License.

17.05 Bump Track + Dyno or Road Test - No Concerns

- A. Verify documentation shows Bump Track plus Dyno Tests or a Road Test was successfully completed. Bump Track + Dyno or a Road Test should verify among other things:
 - 1. Absence of squeaks, rattles, unusual noises, vibration, abnormal ride quality
 - 2. Steering wheel alignment correct(ed)
 - 3. Driver's controls operating properly
 - 4. Full-lock turns in right and left directions.

NOTE: If using Bump Track test only, perform 360-degree right and left hand turns at 5+ mph to force liquid axle lubricant into rear wheel hubs prior to axle lube level check.
- B. Document items to be repaired on PDI Report.

17.13 Parking Brake - holds, releases

- A. With Parking Brake set and engine at idle and transmission in 1st gear attempt to move vehicle. Vehicle must not move.
- B. With area clear, Parking Brake released, engine at idle, and transmission in 1st gear, attempt to move vehicle. Vehicle should move.
- C. Document items to be repaired on PDI Report.

17.16 Clutch pedal free travel 1" to 1 1/2"

- A. Depress the pedal until resistance is felt.
- B. Free play should be 1" to 1 1/2".
- C. Document items to be repaired on PDI Report.

17.19 Clutch pedal free play - 1-1/4 to 1-3/4" (32 - 44mm)

- A. Measure the clutch pedal distance traveled while depressing the pedal until resistance is felt. Measure at the midpoint (not lower or upper edge) of the side of the pedal pad.
 - Free play should be 1-1/4 to 1-3/4" (32 - 44mm).
- B. Correct as needed by performing an internal clutch (not linkage) adjustment during PDI.
 - Adjust finger to bearing gap to 1/8" (3mm)
 - Adjust bearing to clutch brake gap to 1/2" (13mm)
 - Re-measure the clutch pedal distance traveled while depressing the pedal until resistance is felt.
- C. If internal clutch adjustment does not provide proper free play, clutch linkage adjustment is then necessary during PDI.

17.22 Brake warning light, buzzer, motor, air brake tests

WARNING – Always chock the wheels before manually releasing the parking brakes, otherwise the vehicle could roll, causing property damage, personal injury, or death.

AIR BRAKE SYSTEMS:

- A. Low Pressure Alarm turns off
 - 1. Assure vehicle will not roll, using chocks, and then release Park Brake and Service Brakes.
 - 2. With the key switch in the OFF position, the light must be off. The pressure reading in at least one air pressure gage must be below 55 psi. If necessary, cycle service brake pedal until the system pressure in both air pressure gages drops below 55 psi.
 - 3. Turn the key switch to the ON position. The low air pressure light and or buzzer must be on when the air pressure is below 55 psi.
 - 4. Start the engine and let it run. The light and buzzer must go off once the pressure readings in the air pressure gage with the lowest reading is between 55 and 76 psi.
- B. Pressure Build
 - 1. Rev engine to maximum RPM. Pressure should build from 85 - 100 psi in 25 seconds or less.
 - 2. Governor should cut out at an air pressure gage reading of 115 to 135 psi.

C. Pressure Bleed

1. Turn OFF engine, switch key to ON position, release service brake.
2. Air pressure reading in either air pressure gage should drop no more than 2 psi in one minute .
3. Fully apply and hold service brake pedal.
4. Air pressure reading in either air pressure gage should drop no more than 3 psi in one minute.

D. Low Pressure Alarm

1. Cycle service brake pedal to deplete air pressure.
2. Alarm must sound if the reading in either air pressure gage drops to 55 to 76 psi.

E. Park Brake Application

1. Continue cycling service brake pedal to deplete air pressure
2. Park brake must apply when the reading in air pressure gage #2 drops to 20 to 40 psi.

F. Document items to be corrected on PDI Report.**FULL POWER SYSTEMS:**

- A. With the key switch in the OFF position the park brake and brake pressure lights should be off. The system may have enough stored fluid pressure to apply the brakes without starting the motor. With the key switch in OFF position the motor should operate (audible pumping sound is heard) when the brake pedal is pressed. If it does not, cycle (apply and release) the brake pedal, up to a maximum of 10 times, until the motor starts. (If the motors do not start when pedal is cycled and key is OFF, there is most likely a problem with the brake light switch in the master cylinder, or there may be a communication problem with the ESC.) The motor will operate until hydraulic pressure has been built in the accumulators.
- B. Brake pressure buzzer should sound and brake pressure light should stay on until acceptable pressure (approximately 1500 psi) is built in accumulators.
- C. The motors must turn off once cut-out pressure is reached.
- D. Engage the park brake if it is not already set, and turn the key switch to ON. The park brake light must turn on.
- E. Start the engine and let it run. The park brake light should remain on since the park brake is still set.
- F. Press the brake pedal and disengage the park brake. The park brake light must go off.
- G. Document items to be corrected on PDI Report.

HYDROMAX SYSTEMS:

- A. With the key switch in OFF position the park brake light should be off. The brake motor will operate (audible) when the brake pedal is pressed.
- B. Engage the park brake and turn the key switch to ON. The park brake light must go on. The motor should operate continuously.
- C. Start the engine and let it run. The brake motor must turn off. The park brake light will remain on since the park brake is still set.

- D. Press the brake pedal and disengage the park brake. The park brake light must go off.
- E. Document items to be corrected on PDI Report.

17.25 Gear Selector/ Switches — functional

Manual Transmission

- A. Verify that all gears are selected and achieved.
- B. If present, verify Range Selector Lever and Splitter Switch operate smoothly.
- C. Document items to be repaired on PDI Report.

Automatic or Automated – Manual Transmission

- A. Verify service brake or clutch (as applicable) must be depressed to move from Neutral to Drive or Reverse.
- B. Verify that all gears are selected and achieved.
 - 1. If present, verify the 3 Steering Wheel-mounted Automated Manual Transmission Shift Switches are functional - MANUAL/AUTO override, Upshift, Downshift, and +/- shift switches
 - 2. Verify the applicable console-mounted Automatic or Automated Manual Transmission Shift Switches are functional - Neutral, Drive, Reverse, Hold, Upshift, Downshift, MANUAL/AUTO override shift switches, MODE, etc.
- C. Document items to be repaired on PDI Report.

17.28 Recalibrate Compass - See Operator's Manual for Procedure

NOTE – Labor to recalibrate compass is to be included in dealer cost of the vehicle and is not covered under PDI labor.

17.31 Horn and Steering Wheel Switches — functional

- A. Verify functionality of Steering Wheel Switches and Shift Console Switches
 - 1. Air horn (May be lanyard activated)
 - 2. Electric horn
 - 3. Radio/Cassette/CD Player (optional) — on/off switches, volume +/- switches
 - 4. Radio/CD Player (optional) - Controls: Volume, AM FM, Station Change, CD Player, and Speakers function properly. NOTE: Remember to remove CD immediately so it will not be left behind.
 - 5. Cruise Control [only operable over 35 mph (55kph)]:
 - Verify functionality of ON/OFF, SET/CRUISE, RESUME/ACCEL functions using Dash-mounted and or Steering Wheel-mounted Switches (if present).
 - Verify Cruise Control deactivates after brake apply.
 - 6. Bus Warning Flashers switch and Door open/ close switch

- B. Document items to be repaired on PDI Report.

17.32 *Hand Throttle/ Cruise Control - functional*

- A. Verify Hand Throttle operation by activating the Cruise Control switch.
 - 1. Verify holding and then releasing ACCEL switch will hold an elevated engine speed.
 - 2. Verify that momentarily touching DECEL switch will decrease and hold a lower engine speed.
 - 3. Verify touching brake pedal will return engine to idle speed.
- B. Document items to be repaired on PDI Report.

17.34 *Engine Brake/ Retarder (if present)*

- A. Engine Brake:
 - 1. Verify Engine/Exhaust Brake turns ON/OFF using Dash-mounted and or Steering Wheel-mounted Switches (if present).
 - 2. Verify Engine Brake activates appropriately at all available power settings.
- B. Document items to be repaired on PDI Report.

17.37 *Driver Controls — functional*

- A. Check for proper function of systems:
 - 1. Service brake
 - 2. Accelerator
 - 3. Steering
 - 4. Retarder (Use caution when engaging retarder on slick road surfaces)
 - 5. Cruise Control / Hand Throttle
 - 6. Self-Cancelling Turn Signal
 - 7. Power Divider Lock
 - 8. Differential Locks
 - 9. Air Suspension Dump
 - 10. Two Speed Axle
- B. Document items to be repaired on PDI Report.

17.40 Gauges and Warning Lamps — functional, no warnings

A. While in motion, with vehicle warmed up, check for proper function of gauges:

1. Speedometer
2. Tachometer
3. Oil Pressure
4. Water Temperature
5. Voltmeter
6. Air Pressure
7. Fuel level
8. Any optional gauges
9. Odometer Display

B. Verify no warning lamps are illuminated

C. Document component defects to be repaired on PDI Report.

17.43 Engine, Transmission, Brakes, Steering - performance

A. The following characteristics should be considered:

1. Idle quality - smooth
2. Acceleration - smooth and powerful; Accelerator Pedal operates smoothly.
3. Shifts:
 - Manual Trans - Smooth quiet operation of clutch and gear shift lever, shifts crisp but not harsh
 - Automated Manual Trans - Smooth quiet operation of clutch, auto-shifts crisp but not harsh
 - Automatic Trans - shifts crisp but not harsh
4. NVH (Noise, Vibration, and Harshness) - smooth and quiet, no shuddering, squeaking, buzzing, hissing, whining.
5. Braking (Service Brakes, Retarder, and Engine/ Exhaust Brake) - smooth and powerful
6. Steering - Tight and straight, no pull or vibration
7. Oil Pressure - 25 - 50 psi, engine warm
8. Water Temperature - 225 F (107 C) max, engine hot
9. Volts - 13.0 - 15.0 Volts

B. Each parameter should be within an acceptable range per vehicle type and class.

C. Perform full left to right lock to lock turns to set steering and purge air from PS fluid.

D. Document items to be repaired on PDI Report.

17.45 *Air Suspension - dumps, lifts*

- A. Document items to be repaired on PDI Report.

17.46 *Rear Air Suspension - dumps, lifts*

- A. Document items to be repaired on PDI Report.

17.49 *Front Air Suspension - dumps, lifts*

- A. Document items to be repaired on PDI Report.

17.52 *Auxiliary Gear Selectors - function*

- A. Gear selector should select correct gear in each gear selector position
B. Document items to be repaired on PDI Report.

17.55 *Steering Wheel Alignment - straight +/- 3/4" (18 mm)*

NOTE – If the vehicle pulls significantly to the left or right, the axles may be out of alignment. Do not attempt to reposition an off-center steering wheel until axle alignment is deemed to be proper.

- A. If the axle alignment is deemed acceptable, verify the location of the steering wheel rim centerline is off-center by less than 3/4" (18 mm) for an 18-inch wheel.
B. Re-align the steering wheel as part of PDI if steering wheel alignment is out of spec.

Adjustment Specifications Chart:

72 Tooth Spline Steering Wheel:

- The 72 tooth spline steering wheel can be adjusted by +/- 5 degrees.
- 18 inch wheel - each tooth = 3/4 inch at the outside of the wheel.

NOTE: Labor to adjust steering wheel alignment is included in PDI.

- C. Document items to be adjusted/ repaired (including axle alignment) on PDI Report.

NOTE – Labor for intentionally misaligning the steering wheel to meet a special customer request is not covered under PDI or PTD Warranty, but is to be charged towards the purchase cost of the vehicle.

17.58 *Steering Wheel Alignment — straight per spec*

NOTE – If the vehicle pulls significantly to the left or right, the axles may be out of alignment. Do not attempt to reposition an off-center steering wheel until axle alignment is deemed to be proper.

- A. If the axle alignment is deemed acceptable, verify the location of the steering wheel rim centerline is off-center by less than 3/4" (18 mm) for an 18-inch wheel, or less than 7/8" (22 mm) for a 20-inch wheel.

Adjustment Specifications Chart:

Models: CE Bus, 3200, 4100, 4300, 4400, 7300, 7400, 7500, 7600, 7700, 8500, 8600

72 Tooth Spline Steering Wheel:

- The 72 tooth spline steering wheel can be adjusted by +/- 5 degrees.
- 20-inch wheel - each tooth = 7/8 inch (22 mm) at the outside of the wheel.
- 18 inch wheel - each tooth = 3/4 inch (18 mm) at the outside of the wheel.

Models: CITYStar CF, RE Bus, FE Bus, 5000i, 9000i

36 Tooth Spline Steering Wheel:

- The 36 tooth spline steering wheel can be adjusted by +/- 10 degrees.
- 20-inch wheel - each tooth = 1.75 inch at the outside of the wheel.
- 18-inch wheel - each tooth = 1.5 inch at the outside of the wheel.

B. Document items to be adjusted/ repaired (including axle alignment) on PDI Report.

NOTE – Labor for intentionally misaligning the steering wheel to meet a special customer request is not covered under PDI or PTD Warranty, but is to be charged towards the purchase cost of the vehicle.

17.61 *REGENERATIVE BRAKING - 10 seconds minimum*

17.64 *Wind noise - no leaking body seals*

- A. Verify there is no unusually excessive wind noise or water leaks if raining.
- B. Document items to be corrected on PDI Report.

17.67 *Climate Controls - Fan Speed, Temperature, Ducts*

- A. Check for proper operation of:
 1. Heater
 2. Defroster
 3. A/C
 4. Blower Fan
 5. Adjustable Vents
 6. Auxiliary Heaters
 7. Auxiliary A/C

NOTE: If sleeper equipped, apply the parking Brake with Engine ON. Be sure to leave the driver's seat and operate the controls in the sleeper.

- B. Document component defects to be repaired on PDI Report.

17.70 *Sleeper Accessories/ Controls with Engine Running*

NOTE: If sleeper equipped, apply the parking Brake with Engine ON. Be sure to leave the driver's seat and operate the controls in the sleeper.

- A. Verify sleeper controls and accessories function properly including, but not limited to:
 - 1. HVAC system: Fan speeds, Heat and AC Temperature control, Ducts
 - 2. Radio controls in sleeper
 - 3. Inverter (if present and not inspected prior to Road Test). Plug in a 120 volt light to assure inverter operation.
 - 4. TV, any appliances present, etc.
 - 5. APU or Idle reduction equipment controls
- B. Document items to be repaired on PDI Report.

17.76 *Optional Accessories - performance, programming*

- A. Perform any necessary programming and verify proper function and programming of all other interior controls and accessories that might be present, including but not limited to:
 - 1. Programming AWARE
 - 2. Programming Theft Deterrent System password
 - 3. Programming Keyless Entry Systems
 - 4. Calibrate optional Compass (readout is in odometer in instrument cluster or overhead console)
 - 5. Ambient Temperature Thermometer (must be present with Compass option)
 - 6. No-Idle solutions - Heaters, AC, Charging
 - 7. Cummins ICON
 - 8. Vehicle Information Display (VID)
 - 9. Etc.
- B. Perform any necessary programming and verify proper function and programming of all other exterior controls and accessories that might be present, including but not limited to:
 - 1. Block Heaters
 - 2. Shore Power
 - 3. Auxiliary Generator Set
 - 4. Chassis Auto-Lube Greasing System programming and functionality
 - 5. Etc.
- C. Document items to be repaired or programmed on PDI Report.

17.77 Optional Accessories - performance

- A. Verify proper function of all other controls and accessories that might be present, including but not limited to:
 - 1. Block Heaters
 - 2. Shore Power
 - 3. No-Idle solutions - Heaters, AC, Charging
 - 4. Auxiliary Generator Set
 - 5. Chassis Auto-Lube Greasing System programming and functionality
 - 6. Vehicle Information Display (VID)
 - 7. Gates/ Guards/ Lights/ Electronics/ Etc.
- B. Calibrate optional Compass - No tools required. (readout is in odometer in instrument cluster or overhead console)
- C. Document items to be repaired on PDI Report.

NOTE: Labor cost for programming optional components is not part of the PDI but is to be charged to the vehicle's cost via the assigned Stock Unit# / VIN / Tag# / Etc.

17.79 Body Switches — functional

- A. Verify that all body switches operate accessories as labeled.

NOTE: Labor to inspect any switches installed after leaving the factory is to be charged toward the dealer cost of the vehicle and is not included in the PDI labor.

- B. Document items to be repaired on PDI Report.

17.82 Turn Off Engine**17.85 Hybrid Lights - RED / AMBER / HOOD OPEN work**

- A. With the Eaton system, ensure that HEV lights work.

NOTE: the hood open switch will only be present on units with the e-PTO option.

17.88 Start Engine with Hybrid Motor / Generator

- A. With the Eaton HEV system the motor / generator should start the engine when the HEV batteries are charged.
- B. Start the engine and listen to make sure that the motor / generator is starting the engine. It will sound different than the normal 12V starter.
- C. Document items to be repaired on PDI Report.

17.91 Hybrid fault light on dash - check

- A. Verify that no Hybrid Fault light is present.
- B. Document items to be repaired on PDI Report.

17.94 *Idle Reduction: ICON, APU, Coolant heater, etc.*

- A. Verify Proper Operation of Idle Reduction features.
- B. Document items to be repaired or programmed on PDI Report.

NOTE: Repairs/adjustments performed on Dealer-installed Idle-Reduction features are not covered under PTD or Vehicle In-Service Warranty.

19.10 *Hot Coolant Level: MAX +/- 1" or above lower view eye*

- A. After Road Test, Hot coolant level should register within +/- 1" (25 mm) of MAX indicator on transparent surge tank or cover one or both view eyes on a view eye equipped surge tank. Coolant should not be overflowing.
- B. Add coolant only if outside this range.



WARNING – To avoid being scalded by hot coolant, wait until engine cools and then slowly unscrew surge tank cap if necessary.

NOTE: Use a 50/50 mix of coolant and water or a 50/50 pre-mix..

19.20 *Hot Coolant Level - above lower view eye, no overflow*

- A. After Road Test, Hot coolant level should cover one or both view eyes on a view eye equipped surge tank. Coolant should not be overflowing.
- B. Add coolant only if outside this range.



WARNING – To avoid being scalded by hot coolant, wait until engine cools and then slowly unscrew surge tank cap if necessary.

NOTE: Use a 50/50 mix of coolant and water or a 50/50 pre-mix..

19.30 *Hot Coolant Level - MAX line +/- 2 inch (50mm)*

- A. Check HOT coolant level after road test. The coolant level should be within 2 inches, above or below, of the MAX line due to expansion.
- B. Add coolant only if outside this range.



WARNING – To avoid being scalded by hot coolant, wait until engine cools and then slowly unscrew surge tank cap.

NOTE: Use a 50/50 mix of coolant and water or a 50/50 pre-mix..

19.40 Automatic Transmission Fluid Level - in HOT range

NOTE: This test can only be done immediately after the Road Test with transmission hot.

- A. With vehicle running and in neutral or park position, check transmission fluid level. Fluid level should register between midpoint and FULL mark in HOT range.
- B. Add or drain appropriate fluid as needed to correct fluid level.

NOTE: If fluid level is in acceptable operating range, further fluid additions are not covered by PTD Warranty. Only fluid added, not labor, is covered by PTD Warranty.

19.45 Battery & Alternator Test using Midtronics EXP

- A. Verify Battery, Starting Voltage and Alternator Output is acceptable using Midtronics Intellect EXP electrical charging system tester.
- B. Document items to be repaired or programmed on PDI Report.

19.50 Coolant Freeze Point: protection to -34 (-37C) or lower

Verify coolant Freeze point is -34 F to -42 F (-37 C to -41 C) using a refractometer and adjust concentration as necessary by adding coolant concentrate or de-mineralized water to obtain specified freeze point.

19.60 No Fluid, Exhaust or Air Leaks - entire vehicle

NOTE: It is recommended that the appropriate detector (ultrasonic leak detector (required tool) or refrigerant sniffer) is used in addition to normal hearing, sprayed-on soap solution on suspect components, or visual signs of leakage.

- A. With Vehicle running inspect exhaust connections and CAC hosing for audible or visible leakage.
- B. Return vehicle to a quiet inspection bay where small air leaks can be heard.
- C. Install wheel chocks.
- D. Turn OFF key.
- E. Release parking brake. (This pressurizes additional air hoses)
- F. Apply Service Brakes during the inspection using a prop-rod between the driver's seat and the brake pedal.

-
- G. Verify there are no visible fluid, exhaust, or audible air leaks anywhere on the vehicle. Items included in check: (HVAC condensate (water) is not included as that is desirable)
1. Refrigerant hoses - as evidenced by localized oil mist on hose, sender, or fitting
 2. Air hoses
 3. Fuel hoses, Fuel Tank, Fuel Delivery System
 4. Radiator
 5. Coolant / heater/ in-transit heat hoses
 6. Power steering reservoir and hoses
 7. Transmission cooler and hoses
 8. Engine
 9. Transmission
 10. Drive Axles
 11. Wheel Seals
 12. Add-on hydraulic equipment/ hosing.
- H. Verify manual operation of air tank drain valves.
- I. Check that muffler / tailpipe assembly is still clamped and positioned correctly.
- J. Document items to be corrected on PDI Report.

19.70 *Fault Codes - Check and Record*

- A. Check for fault codes using in-cab method, or Vehicle Information Display, EZ Tech, or applicable device.
- B. Document on PDI Report, active or inactive fault codes and any associated symptoms that appeared during Road Test.

21.10 *Hybrid power supply cord is with vehicle*

21.20 *Operator's Manual, other required documents present*

- A. Supporting documents potentially required by law including:
 - 1. Truck Chassis Operator's Manual
 - 2. Engine Operator's Manual
 - 3. Seat Belt Installation, Usage and Maintenance Guide
 - 4. Fifth Wheel Instructions Handbook
 - 5. Special Equipment/ options Operator's Manuals
 - 6. Incomplete vehicle document (only if vehicle is shipped incomplete: No 5th wheel or Body installed)
- B. Other documents that may be present:
 - 1. Radio Owner's Manual
 - 2. Full Features List/Line Setting Ticket
 - 3. Vehicle Electronics Programming Station Electronics Parameter Report
 - 4. ABS Brake Test Sheet

NOTE: Not all documents on these lists may necessarily be classified as required documents. Check your local laws for details.

21.30 *Install Instruction stickers found in Operator's Manual*

If Vehicle Operator's Manual has instruction sticker page in front, install various stickers in applicable locations on vehicle.

21.40 *Write PDI Location Code, Date on VIN Label*

- A. Using a permanent felt or roller ball style pen with black ink, write the PDI Location Code, and PDI Date on the Vehicle Identification Label.
- B. Cover the written PDI Location Code and PDI Date with high-quality transparent tape to preserve the writing.

21.50 *Install Vehicle Certification Label (if required)*

- A. If vehicle is considered incomplete assure an Incomplete Vehicle Label is applied to the appropriate location.
- B. If vehicle is receiving PDI after a body builder has installed a body, verify the vehicle has a complete vehicle label applied to the appropriate location.

21.60 *Install PDI Identity Label CTS-1122 to windshield (optional)*

This label allows the dealer personnel and the receiving customer to see from a distance that the vehicle has received its pre-delivery inspection.

21.70 ADD COMMENTS TO PDI REPORT

- A. Document details of problems/corrections made during PDI
- B. Document details of repairs to be made, open Recalls, open AFCs, Uptime issues.
- C. Check off completed repairs.
- D. Include any applicable R.O. numbers if desired.

21.80 Wash, Vacuum, and Dry Vehicle - look for interior leaks*

*For buses, rather than searching for water leaks, verify document is present, verifying that vehicle passed factory rain leak test.

CAUTION – Do not wipe dirt off the vehicle when it is dry as that can scratch the finish.

- A. Assure the vehicle is clean inside and out and no dirt or trash is visible.
 - 1. Wash vehicle (add mild soap solution if necessary) using cloth or soft clean brush.

NOTE: Give extra attention to wheels that have had axle oil on them due to the axle being removed during delivery.
 - 2. Rinse thoroughly with fresh water.
 - 3. Starting with the windows, dry the vehicle fully with a soft clean towel to prevent water spots and soap etching.
 - 4. Using mild soap solution, remove any dirt that has entered the cab/ interior.
 - 5. Clean inside of windows with glass cleaner.
 - 6. Clean floor mat using a vacuum. Clean floor mat with soap, sponge, brush, and towel if necessary to eliminate all signs of dirt. Make sure all signs of visible glue are removed.
 - 7. Remove any protective coverings from interior unless the final customer desires them to remain.
- B. Verify there are no water leaks into the interior or vehicle has documentation to prove it has successfully passed a previous water spray booth test.
- C. Document items to be corrected on PDI Report.

NOTE: Remember to remove any Dealer-owned, temporary License Plates from the vehicle. Check to make sure all tools and supplies have been removed from the vehicle.

21.90 Wash Vehicle - look for interior leaks

- A. Thoroughly wash vehicle
- B. Inspect interior for leaks following wash
- C. Document items to be corrected on PDI Report.