

Subject: TM2020 LuK Clutch Disc Replacement

Models Affected: TM 2020 C Model Transmissions equipped with LuK Brand Clutch

General Information

Daimler Trucks North America LLC, on behalf of its DETROIT™ Powertrain Division, is initiating Recall Campaign D21R3 to replace the LuK Clutch Disk in certain TM2020 models.

Certain TM2020 units equipped with the LuK clutch assemblies need the clutch disc and pressure plate replaced to prevent future damage and failure while in service.

All units with a clutch disk in the effected date range require a new clutch disc, pressure plate, mounting bolts.

Additionally, all the vehicles in the population require programming updates for the ACM, MCM, CPC and TCM. Please refer to the attached work instructions for **MINIMUM** software versions.

Affected LuK clutches were manufactured between July 8, 2020 and August 15, 2020. Identify them using the following date codes:

Suspected window

With DMC

With Laser Mark

Julian Date 192, equivalent July 8th, 2020 (0G08)

Julian Date 228, equivalent to August 15th, 2020 (0H15)

Suspected parts (as discs) were built between July 8th, 2020 and Aug 15th, 2020

First ID date 002141080802**0192**0XXXXX203002608001066

Last ID date 002141080802**0228**0XXXXX203002608001066

First Digit	Year	2nd Char	Month	4-5th Digit	Day
8	2018	A	Jan	0-31	Day
9	2019	B	Feb		
0	2020	C	Mar		
		D	Apr		
		E	May		
		F	Jun		
		G	Jul		
		H	Aug		
		I	Sep		
		K	Oct		
		L	Nov		
		M	Dec		

First ID date **0G08**

Last ID date **0H15**

There are approximately 1244 units affected by this Recall Campaign.

Work Instructions

Please refer to the attached work instructions. **Prior to performing the recall campaign, check the vehicle for a completion sticker (Form WAR261).**

Replacement Parts

Replacement parts are now available. Order new part number(s), listed below, from your facing Parts Distribution Center.

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Table 1 – Replacement Parts for D21R3-A (1234 vehicle)

Campaign Group	Part Number	Part Description	Quantity
A	A02-14108-001	CLUTCH-ASSY,HD AMT,430,1-PLT	1
A	23-13329-095	BOLT-HEX FLG,PC 10.9,M10X95	12
A	TCX T130130349AC2	CLAMP-4" HDEP SPHERICAL	1
A	TCX AMS012	GASKET-4" SPHERICAL	1
A	TCX T130158342AC2	CLAMP-5" HDEP SPHERICAL	1
A	TCX AMS013	GASKET-5" SPHERICAL	1

Table 2 – Replacement Parts for D21R3-B (10 vehicles)

Campaign Group	Part Number	Part Description	Quantity
B	A02-14108-001	CLUTCH-ASSY,HD AMT,430,1-PLT	1
B	23-13329-095	BOLT-HEX FLG,PC 10.9,M10X95	12
B	TCX T130130349AC2	CLAMP-4" HDEP SPHERICAL	1
B	TCX AMS012	GASKET-4" SPHERICAL	1
B	TCX AMS294	CLAMP KIT-AXIAL SLIP,120MM	1

Removed Parts

Please follow Warranty's Failed Parts Tracking shipping instructions for the disposition of all removed parts.

Labor Allowance

Table 3 – Labor Allowance for D21R3

Procedure	Time Allowed (hours)	SRT Number	Corrective Action
D21R3			
CLUTCH, LUK, INSPECT & 4 ECU UPDATE (D21R3)	7.2	996-R018A	06- Inspect
CLUTCH, LUK, REPLACE & 4 ECU UPDATE (D21R3)	7.7	996-R018B	12-Repair Recall/Campaign

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Claim Reimbursement

Obtain reimbursement for parts, labor, and handling (landed cost for Export Distributors) by submitting your claim through the Warranty system within 30 days of campaign completion. Please reference the following information in OWL.

Table 4 – Claim Reimbursement

Claim Type	Recall Campaign
Campaign (number with appropriate condition code)	D21R3
Component Code	023-002-001
Cause Code	A1 - Campaign
Primary Failed Part	A02-14108-001
Procedure A¹	
Use this operation if the clutch date code is NOT in the affected range.	
Labor Number	996-R018A
Labor Hours	7.2 Hours CLUTCH, LUK, INSPECT & 4 ECU UPDATE (D21R3)
Part Number	Refer to Replacement Parts list above
Parts Return	NONE
Procedure B¹	
Use this operation if clutch replacement was required.	
Labor Number	996-R018B
Labor Hours	7.7 Hours CLUTCH, LUK, REPLACE & 4 ECU UPDATE (D21R3)
Part Number	Refer to Replacement Parts list above
Parts Return	SCRAP
¹ Administrative time (SRT 939-6010A) for 0.3 hours is automatically added to the claim.	

U.S. and Canadian dealers should contact the Warranty Campaigns Department via Web inquiry at DTNACconnect.com/WSC, if they have any questions or need additional information.

**Copy of Notice to Owners
IMPORTANT SAFETY RECALL
This notice applies to your vehicle(s)**

Subject: TM2020 LuK Clutch Disc Replacement

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act. This is to inform you that your vehicle may contain a defect that could affect the safety of a person.

Daimler Trucks North America LLC, on behalf of its DETROIT™ Powertrain Division, has decided that a defect, which relates to motor vehicle safety, exists on certain model year 2021 Freightliner Cascadias equipped with TM 2020 C Model transmissions and LuK brand clutch manufactured July 8th, 2020, through September 8th, 2020. DTNA is initiating Recall Campaign D21R3 to replace the clutch disk.

On certain DT12 TM2020, models equipped with LuK brand clutch disc the clutch flange may break due to the heat-treating and stamping process. If flange failure occurs, loose parts may fall into the clutch pressure plate assembly, resulting in clutch disengagement, thereby increasing the risk of a crash.

Records indicate that your vehicle has one of the affected clutch assemblies. Instructions for this recall campaign were sent to your local Authorized Freightliner Repair Facility and the labor time required to perform this replacement is 7.7 hours.

Please contact an Authorized Freightliner Repair Facility and arrange to have the recall campaign performed. To locate an authorized facility, search online at <https://demanddetroit.com/find-a-dealer>. This service will be completed for you at no charge under the provisions of this notice. You may be liable for any progressive damage that results from your failure to complete the Recall within a reasonable time after receiving notification.

If you do not own the vehicle that corresponds to the identification number(s), which appears on the Recall Notification, please return the notification to the Warranty Campaigns Department with any information you can furnish that will assist us in locating the present owner. If you have leased this vehicle, Federal law requires that you forward this notice to the lessee within 10 days. If you are a subsequent stage manufacturer, Federal law requires that you forward this notice to your distributors and retail outlets within five working days.

You must make an appointment with the repair facility at least two weeks in advance of the actual repair so the repair facility can stock the replacement part(s) needed to complete this recall campaign. Failure to provide advance notification to the repair facility may result in a delayed repair.

If you have paid to have this recall condition corrected prior to this notice, you may be eligible to receive reimbursement. Requests for reimbursement may include parts and labor. Reimbursement may be limited to the amount the repair would have cost if completed by a Freightliner Authorized Repair Facility.

The following documentation must be presented to your dealer for consideration for reimbursement. Please provide original or clear copies of all receipts, invoices, and repair orders that show:

- The name and address of the person who paid for the repair.
- The Vehicle Identification Number (VIN) of the repaired vehicle.
- What problem occurred, what repair was done, date of the repair.
- Who repaired the vehicle.
- The total cost of the claimed repair expense.
- Proof of payment for the repair (such as the front and back of a cancelled check or a credit card receipt).

Reimbursement will be made by check from your Freightliner dealer. Please speak with your authorized Freightliner dealer concerning this matter.

If you have questions about this Recall, please contact the **Detroit Diesel Customer Support Center**, 13400 Outer Drive West, Detroit, MI 48239, or call **(800) 445-1980 (Eastern Standard Time)**. **Detroit Diesel's Customer Support Center is open 24 Hours / 7 Days a Week**. If you are not able to have the defect remedied without charge and within a reasonable time, you may wish to submit a complaint to the Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590; or call the Vehicle Safety Hotline at (888) 327-4236 (TTY: 800-424-9153); or to <http://www.safercar.gov>.

We are sorry to cause you this inconvenience. However, we have taken this action in the interest of your continued satisfaction with our products.

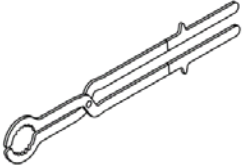
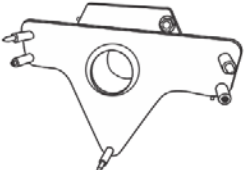

DETROIT WARRANTY CAMPAIGNS DEPARTMENT

Enclosure

Work Instructions
Subject: TM2020 LuK Clutch Disc Replacement

Models Affected: TM2020 C Model Transmissions equipped with LuK Brand Clutch

Special Tools

Tool	Description	Part Number
 <p>f580502</p>	Input Shaft Pliers	DDE W715589013700
 <p>11/29/2018 f250714</p>	Clutch Jack Adapter Tool	DDE DSN012T16001
 <p>11/29/2018 f250713</p> <p>d580319</p>	Clutch Alignment Tool	DDE W950589006100 or DDE DSN012T20022

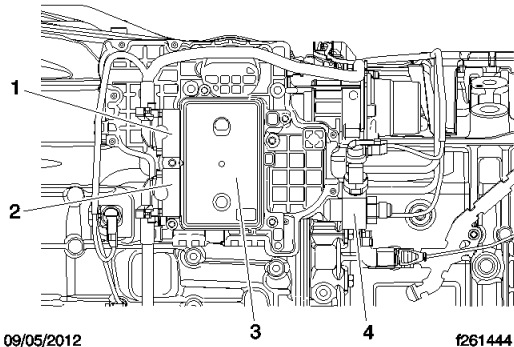
Corrective Procedure

Transmission Removal

1. Park vehicle on a level surface, turn ignition OFF, set parking brake and chock tires.
2. Disconnect batteries at the negative post, including the batteries for the auxiliary HVAC, if equipped.
3. If required, remove the right-hand forward side-fairing panel. If needed, see the vehicle workshop manual.
4. Remove the left- and right-hand cab-mounted splash shields.
5. To improve access, raise the front of the vehicle and support it with safety stands.
6. Remove the ATD outlet/tail pipe, if it is routed inboard of the frame rail.

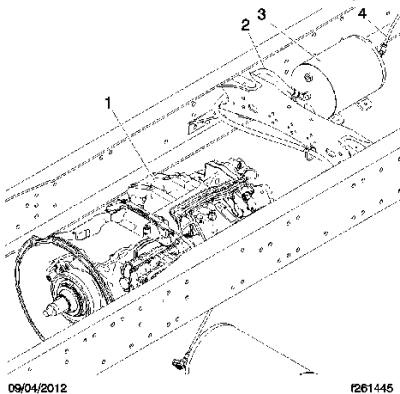
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7. Remove the ATD inlet pipe and bellows in one piece.
8. Drop the front of the driveline. If needed, see the vehicle workshop manual.
9. Remove any brackets and wire routing attached to the transmission's top.
10. Remove the battery cable routing brackets (if applicable) from the transmission's bottom.
11. Disconnect the oil cooler lines, if equipped.
12. Disconnect the chassis harness connector from the transmission control module (TCM), and the transmission harness from the clutch position sensor pass-through.



Item	Description
1	Transmission Harness Connector
2	Chassis Harness Connector
3	Transmission Control Module (TCM)
4	Air Supply Connector

13. Drain the main air system and the isolated transmission reserve air tank.



Item	Description
1	Transmission
2	Air Supply to Transmission
3	Transmission Reserve Air Tank
4	Air Supply to Reserve Air Tank

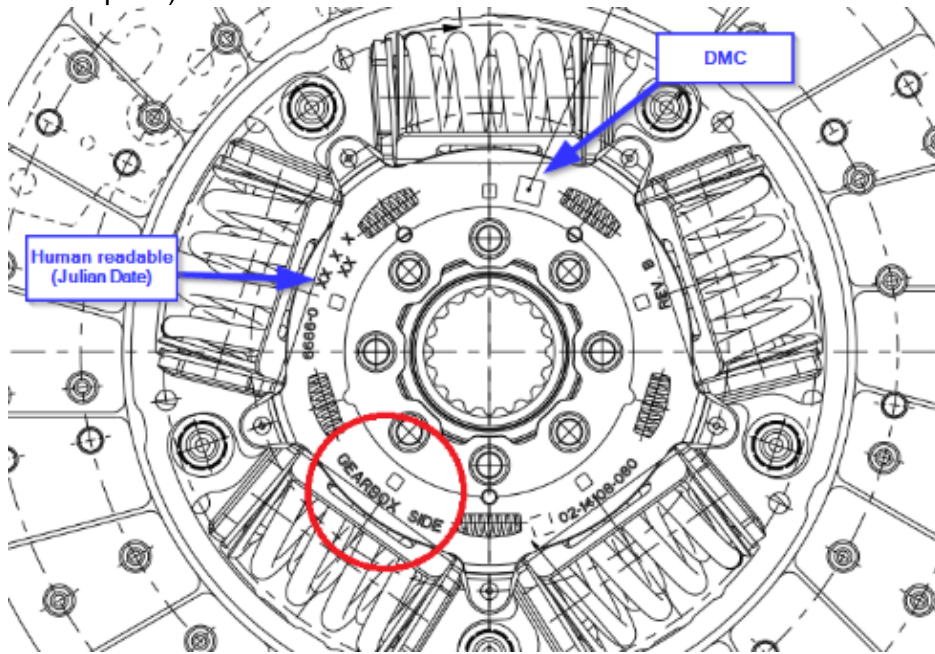
14. Remove the air supply quick disconnect from the transmission's back.
15. Raise a transmission jack against the transmission's bottom, and secure it to the jack.
16. Remove the flywheel-housing-to-clutch-housing fasteners.

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17. Roll the transmission back, keeping the flange of the clutch housing parallel to the flywheel housing, and the input shaft centered in the clutch, until they clear the engine.


Clutch Inspection

18. With the pressure plate installed, find the date code etched in the hub of the disk, in the location shown below (between the "GEARBOX SIDE" text, and Data Matrix Code (DMC), on the center plate).



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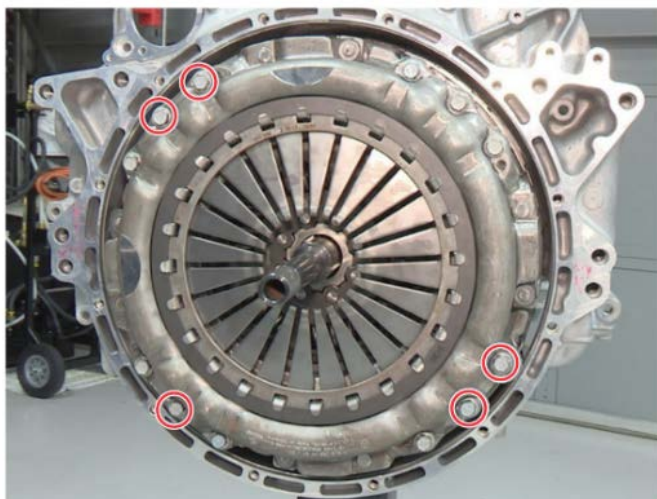
19. Determine if clutch is in, or out of the affected population, by comparing the code elements in the table below to the date code on the disk.

Element	Character	Range	Example
Year Code	1 st	0 (2020)	0G10 – Build date is July 10, 2020
Month Code	2 nd	G (Jul) and H (Aug)	
Day of the Month	3 rd and 4 th	08 through 31 and 01 through 15	

20. If the clutch has a build date between and including 0G08 through 0H15, continue with the Clutch Removal steps. If the build date is before, or after the affected range, continue with the Transmission Installation steps.

Clutch Removal

21. Remove two of the three bolts, from each bolt group, holding the pressure plate to the flywheel. Make sure the five bolts required to attach the Clutch Lift Adapter (DDE DSN012T16001), are included in those removed.



11/26/2018

f250715

22. Insert the clutch disk alignment tool (DDE W950589006100) in the pilot bearing bore.

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23. Loosen each remaining clutch bolt, in the four bolt groups, incrementally in a star pattern, until the pressure plate spring is unloaded. Do not remove bolts.
24. Install the Clutch Lift Adapter (DDE DSN012T16001), on a shop supplied clutch jack, and secure it to the pressure plate with the retaining pins.

NOTICE

The pressure plate has an internal adjustment mechanism, which cannot be reset. The pressure plate does not need to be “caged” nor adjusting during removal, but rough handling or an improper resting position can affect the adjustment. Do not drop the pressure plate, and always store it so it rests on the friction surface to prevent unintended adjustment.

25. Remove remaining bolts, and withdraw the clutch. If the pressure plate is removed from the jack, store it with the weight resting on the friction surface.
26. Inspect the flywheel surface. The accumulated mileage should not require replacing the pilot bearing or resurfacing the flywheel. If this not the case, contact the Campaigns Department for approval.

Clutch Installation

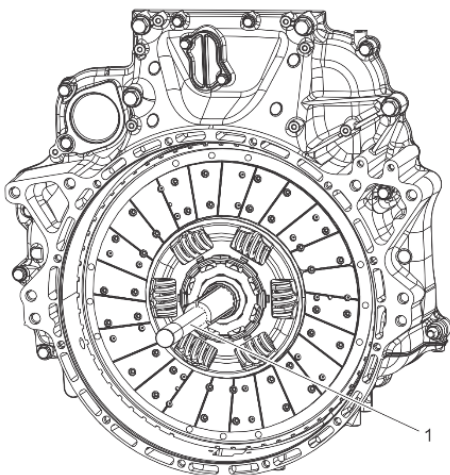
NOTICE

Do not apply lubricant to the input shaft splines. The dust will contaminate the lubricant and cause slow clutch response time.

NOTICE

The flywheel and/or pressure plate can be damaged if the spring force is not compressed incrementally.

27. Insert the disk alignment tool, with the disk installed, into the pilot bearing.



11/29/2018

f250710

28. Use the Clutch Lift Adapter to load the pressure plate onto the jack, and secure the pressure plate using retaining pins.

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NOTICE

Install the clutch using new bolts. The bolts are one-time use and must be replaced when installing, or re-installing the pressure plate.

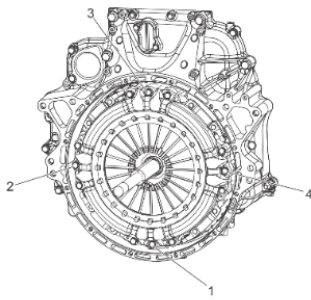
- 29. Loosely install all accessible bolts.
- 30. Remove the lift adapter and loosely install remaining bolts.

NOTICE

While tightening the clutch bolts, if the force required changes significantly before the diaphragm spring is fully compressed, the pressure plate may not have piloted into the counter-bore of the flywheel correctly. Back all bolts off and start over, or the flywheel could be damaged.

NOTE: During the first steps of the tightening process, confirm the clutch alignment tool is centered and movable in the disk and pilot bearing, otherwise it will be difficult to remove the tool and install the input shaft.

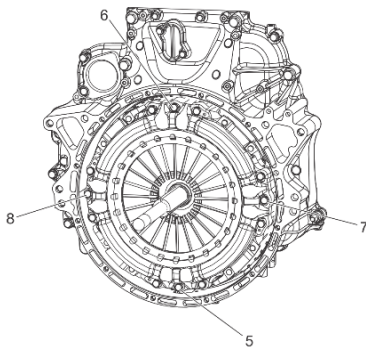
- 31. Go to the bottom-most bolt group, and while lifting the pressure plate into alignment with the flywheel bore, tighten one of the three bolts in the group, in the order of 1-2-3-4, no more than two turns.



11/29/2018

I250711

- 32. Move clockwise around the flywheel in the sequence shown, turning one bolt in each group no more than two turns.
- 33. Change to a criss-cross pattern and continue tightening the same four bolts, in the order of 5-6-7-8. Tighten each bolt one turn or less, until the pressure plate is seated against the flywheel.



11/29/2018

I250712

- 34. Tighten the remaining bolts until snug.
- 35. Torque all bolts to 60 N·m (44 lbf·ft).

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Transmission Installation

36. Ensure that the clutch actuator (CPCA) is fully collapsed before mating the transmission to the engine. If not, collapse the CPCA by hand, or loosen the attachment bolts enough to break the O-ring seal, hold the actuator collapsed, and tighten the fasteners to 55 N·m (41 lbf·ft).

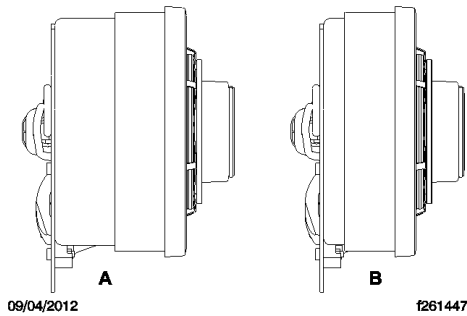
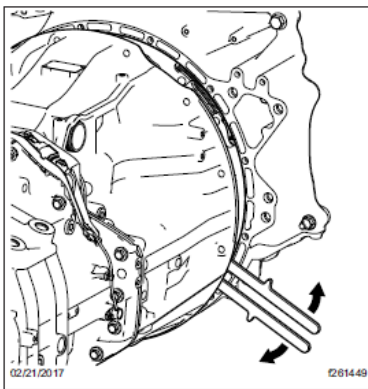


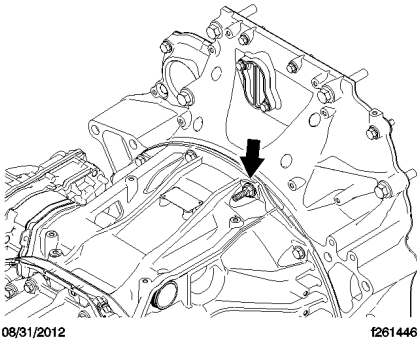
Image	Condition
A	Expanded
B	Collapsed

NOTE: Do not apply lubricant to the input shaft splines. Dust will contaminate the lubricant and cause slow clutch response time.

37. Raise the transmission up, align the faces of the housings, center the input shaft in the clutch, and begin fitting the transmission to the engine. Using input shaft pliers (DDE W715589013700), align the splines with the clutch, then push the transmission to the flywheel housing.



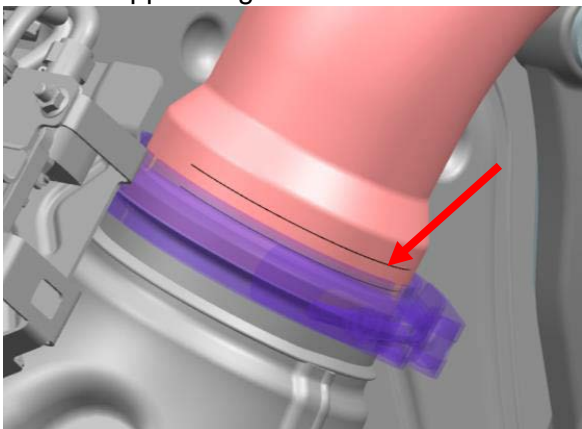
38. Apply medium-strength thread locker to the fasteners that attach the flywheel housing to the clutch housing, or use new fasteners with pre-applied locking compound. Install the fasteners, and using a star pattern, tighten them finger-tight. Then, using the same star pattern, tighten the capscrews between 61 and 72 N·m (45 and 53 lbf·ft).



39. Remove the transmission jack from under the vehicle.
40. Connect the chassis wire harness to the TCM, and the transmission harness to the clutch position sensor pass-through, and secure harnesses with wire ties.
41. Attach the air supply connection to the quick-connect fitting at the transmission's back.
42. If applicable, attach the battery cable routing to the transmission's bottom.
43. Attach any brackets and wire routing to the transmission's top.
44. Connect the driveline to the transmission output yoke. If needed, see the vehicle workshop manual.
45. Clean any gasket material from all the exhaust connection surfaces, being sure not to drop any material into the ATD or piping.
46. Using new clamps and gaskets, fit the ATD inlet pipe so all clamps and supports are in place and tight enough to close any gaps, but loose enough to still allow minor adjustments.

Note: The bellows is not designed to be bent. The pipe connections and supports must be adjusted to keep the bellows straight.

47. Center the ATD inlet and confirm the bellows are in-line.
48. For ATDs with a slip clamp inlet connection, confirm pipe has the minimum engagement. Only the upper depth engagement mark on the inlet pipe, should be visible above the slip gasket support ring.



49. Tighten the spherical, or slip clamp at the ATD inlet connection first, as follows.
 - Tighten the nut to 20 N·m (15 lbf·ft).
 - Using a plastic or rubber mallet, tap around the outside of the clamp, in several locations, to seat the clamp against the pipe.
 - Tighten the nut a second time to 20 N·m (15 lbf·ft).

50. If applicable, tighten the pipe support U-bolt to 22 N·m (16 lbf·ft).
51. Tighten the spherical clamp at the turbo outlet connection last, as follows.
 - Tighten the nut to 20 N·m (15 lbf·ft).
 - Using a plastic or rubber mallet, tap around the outside of the clamp, in several locations, to seat the clamp against the pipe.
 - Tighten the nut a second time 20 N·m (15 lbf·ft).
52. If applicable, install the ATD outlet piping.
53. Install the left- and right-hand cab-mounted splash shields.
54. Remove the safety stands and lower the vehicle.
55. If applicable, install the right-hand forward side-fairing panel. If needed, see the vehicle workshop manual.
56. Connect all batteries.
57. Charge the air system.
58. Connect DiagnosticLink® and under the actions dropdown menu, perform “Clutch Learn Procedure.”

Programming Procedure

		Vehicle Model	
		New Cascadia & Western Star 49X	All Other Models
GHG21 DD13	MCM Software Version	14.3.1.1 ZGS 001	14.3.1.1 ZGS 001
	ACM Software Version	7.61.1.0 ZGS 001	7.61.1.0 ZGS 001
	CPC Software Version	R20.31.00.00A	R44_00_000A
	TCM Software Version	NAMT201403	NAMT201403
GHG21 DD15 & DD16	MCM Software Version	6.9.0.2 ZGS 001	6.9.0.2 ZGS 001
	ACM Software Version	7.61.1.0 ZGS 001	7.61.1.0 ZGS 001
	CPC Software Version	R20.31.00.00A	R44_00_000A
	TCM Software Version	NAMT201403	NAMT201403

Minimum Software Versions

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- 59. You **MUST** use DiagnosticLink® Professional 8.13 Service Pack 1 (or higher) when reprogramming. **REFERENCE** DTNACconnect “My Communications” notice dated 12/15/2020 for more information on DiagnosticLink® 8.13 Service Pack 1.
- 60. Begin the process by connecting DiagnosticLink® to the vehicle. Make sure that all modules (ACM, CPC, MCM, and TCM) are connected.

NOTICE: BEFORE you begin programming, make sure the VIN is correct in all modules. If the VIN is incorrect in any modules, you will receive an error message when attempting to reprogram.

- 61. Make sure the VIN is correct in all modules by looking at the “Identification” screen in DiagnosticLink®. If the VIN is incorrect, you can correct the VIN under the Actions drop-down menu in DiagnosticLink® by selecting the “Check VIN Synchronization” item. Select “Start” from this panel and follow the prompts. You will be prompted to cycle the key until the routine has completed. When synchronization is complete, turn the key back on and continue with the download process.
- 62. On the Identification screen, check the current ACM, MCM, CPC, and TCM software and fuel map levels. Listed in the table above, are the **MINIMUM** levels required. See figure below for an example of the Identification screen for the TCM.

TCM software **NAMT191402** is not at the **MINIMUM** software level required, and needs updating.

UDS-3 TCM01T - Transmission Control Module	
Device Configuration	
Software Mode	Running in Application
Device Information	
Software Version	NAMT191402
Diagnostic Version	20
ECU Serial Number	00-00-00-00-00-12-70-29-00-43
Hardware Part Number	A050 446 36 09 ZGS 002
Software Part Number	A050 448 18 09 ZGS 001

63. Is the software and fuel map ZGS version level for the ACM, MCM, CPC, and TCM less than the software and fuel map ZGS revision levels listed in the table on page 1?
NOTE: The ACM, MCM, CPC, and TCM software and fuel map ZGS version level must meet the **MINIMUM** requirements.
- a) Yes, proceed to step 64.
 - b) No; it is equal to, or greater than the minimum software and fuel map ZGS version levels. No programming is necessary. Proceed to the Completion Stickers section.
64. Select “Parameters” option along the left side of the DiagnosticLink® screen. Wait for parameters to be read.
65. Select "Program Device" option along the left side of the DiagnosticLink® screen. There will be "Data to Upload". Click "Connect to Server".
66. Select the “Add” button in the upper right corner of the DiagnosticLink® screen and enter the engine serial number. Then click the “Connect to Server” button in the bottom right corner of the DiagnosticLink® screen. See Figure 2.

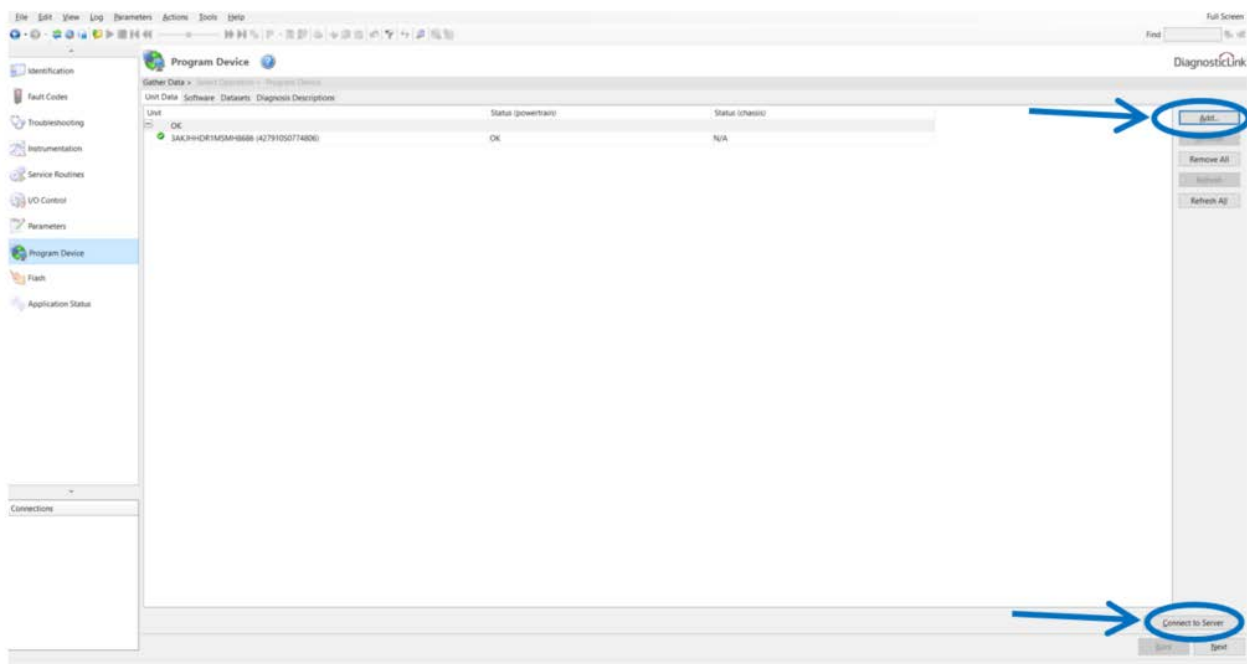


Figure 2 – Adding Engine Serial Number and Connecting To Server

67. Program the ACM, MCM, CPC, and TCM, based on the above inspection results and engine serial number listing included with this recall campaign.
- **NOTE:** If equipped with ICUC, program the ICUC to the latest software.
 - **NOTE:** ACM software 7.61.1.0 with Model Year 2020 fuel map ending in ZGS 002 is older than ACM software 7.61.1.0 with Model Year 2021 fuel map ending in ZGS 001. Make sure that the ACM is programmed to 7.61.1.0 ZGS 001.

68. When programming is complete, click the “Finish” button and perform the following to allow the modules to synchronize with each other:
- Disconnect the USB Link at 9-pin vehicle diagnostic port.
 - Turn the vehicle ignition OFF and wait one minute.
 - Turn the vehicle ignition ON and wait one minute.
 - Turn the vehicle ignition OFF and wait one minute.
 - Turn the vehicle ignition ON and wait one minute.
 - Reconnect the USB Link, reconnect DiagnosticLink® to the MCM, ACM, CPC, and TCM, and confirm the proper software and fuel map levels.

NOTICE: CHECK with the customer to see if Auto Elevate can be enabled. Auto Elevate can prevent Aftertreatment System (ATS) issues.

69. Ask the customer if they would like Auto Elevate activated. **REFERENCE** Detroit™ Technical Service letter 16 TS-18 for full details on Auto Elevate.

70. Repairs are complete.

Completion Stickers

- Upon completion of Recall Campaign **D21R3**, clean a spot on the base label (Form WAR259), write the Recall Campaign Number **D21R3** on a blank, completion sticker (Form WAR261), and attach the completion sticker to the base label.

Label ordering info: DTNAConnect > Services and Reference > Publications & Warranty
Supplies > Warranty