

October 2023
FL966A-F
NHTSA #23V-073
Transport Canada #2023-051

Subject: Brake Modulator Valves

Models Affected: Specific model years 2017-2022 Freightliner 114SD, and Cascadia; and Western Star 47X, and 49X vehicles manufactured June 28, 2016, through April 8, 2022.

General Information

Daimler Truck North America LLC (DTNA), on behalf of its Freightliner Trucks Division, and wholly owned subsidiary, Western Star Truck Sales, Inc., has decided that a defect that relates to motor vehicle safety exists on the vehicles mentioned above.

On the affected vehicles, the brake modulator valves on the front axle may corrode, which during a braking event initiated by Electronic Stability Control (ESC) or Roll Stability Control (RSC), may result in full system pressure applied to one front wheel end causing a brake pull differential in braking force. A full system pressure applied to one front wheel end could lead to a brake pull resulting in a sudden change in vehicle direction due to uneven braking on the front axle increasing the risk of a crash.

A Daimler Truck North America authorized service facility will inspect and replace the brake modulator valves as required.

There are approximately 90,000 vehicles involved in this campaign.

Additional Repairs

Dealers must complete all outstanding recall and field service campaigns prior to the sale or delivery of a vehicle. A dealer will be liable for any progressive damage that results from its failure to complete campaigns before sale or delivery of a vehicle.

Owners may be liable for any progressive damage that results from failure to complete campaigns within a reasonable time after receiving notification.

Work Instructions

Please refer to the attached work instructions. Prior to performing the campaign, check the vehicle for a completion sticker (Form WAR260).

Replacement Parts

Replacement parts are now available and can be obtained by ordering the kit and/or part number(s) listed below from your facing Parts Distribution Center (PDC).

If our records show your dealership has ordered any vehicle(s) involved in campaign number FL966, a list of the customers and vehicle identification numbers will be available on the DTNA Portal. Please refer to this list when ordering parts for this recall.

Table 1 - Replacement Parts for FL966

Campaign Number	Kit Number	Part Description	Part Number	Qty.
FL966A-F	25-FL958-000	SOLENOID,ABS MODULATOR VALVE	25-FL958-001	2 ea
		WASHER-FLAT,STEEL,HARDENED,3/8 IN	23-09114-002	4 ea
		SPACER-AL,.375 ID.75 O	23-12240-025	4 ea
		SCREW-HEX FLANGE,M8X1.25X90	23-14064-090	4 ea
		NUT	N913023 008003	4 ea
FL966C		NUT-HEX,FLANGE,LOCK,5/16-18,ZINC	23-13861-105	4 ea
FL966D		SCREW	N910105 008042	4 ea

Table 1 continued on pg. 2

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Campaign Number	Kit Number	Part Description	Part Number	Qty.
FL966E		SCREW	N910105 008042	4 ea
FL966F		SCREW	23-12489-095	4 ea
		NUT-HEXFLGH,PILOTED,M8X1.25	23-14525-000	
		SPACER-AL,,406IDX1 ODX	23-11427-075	
FL958A-F		BLANK COMPLETION STICKER	WAR260	1 ea

Table 1 continued from pg. 1

Removed Parts

U.S. and Canadian Dealers, please follow Warranty Failed Parts Tracking shipping instructions for the disposition of all removed parts. Export distributors, please destroy removed parts unless otherwise advised.

Labor Allowance

Table 2 - Labor Allowance

Campaign Number	Procedure	Time Allowed (hours)	SRT Code	Corrective Action
FL966A-F	Inspect and replace brake modulator valves	1.0	996-R215B	12-Repair Recall/Campaign
FL966B	Inspect brake modulator valves	0.1	996-R215A	06-Inspect

Table 2

IMPORTANT: When the recall has been completed, locate the base completion label in the appropriate location on the vehicle, and attach the red completion sticker provided in the recall kit (Form WAR260). If the vehicle does not have a base completion label, clean a spot on the appropriate location of the vehicle and first attach the base completion label (Form WAR259). If a recall kit is not required or there is no completion sticker in the kit, write the recall number on a blank sticker and attach it to the base completion label.

Claims for Credit

You will be reimbursed for your parts, labor, and handling (landed cost for Export Distributors) by submitting your claim through the warranty system within 30 days of completing this campaign. Please reference the following information in OWL:

- Claim type is **Recall Campaign**.
- In the Campaign field, enter the campaign number and appropriate condition code (e.g. **FL966-A, FL966-B, etc.**).
- In the Primary Failed Part Number field, enter **25-FL966-000**.
- In the Parts field, enter the appropriate kit or part number(s) as shown in the Replacement Parts table.
- In the Labor field, first enter the appropriate SRT from the Labor Allowance table. Administrative time will be included automatically as SRT 939-6010A for 0.3 hours;.
- The VMRS Component Code is **F99-999-005** and the Cause Code is **A1 - Campaign**.
- **U.S. and Canada — Reimbursement for Prior Repairs.** When a customer asks about reimbursement, please do the following:
 - Accept the documentation of the previous repair.
 - Make a brief check of the customer's paperwork to see if the repair may be eligible for reimbursement. (See the "Copy of Owner Letter" section of this bulletin for reimbursement guidelines.)
 - Submit an OWL Recall Pre-Approval request for a decision.

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- Include the approved amount on your claim in the Other Charges section.
- Attach the documentation to the pre-approval request.
- If approved, submit a based-on claim for the pre-approval.
- Reimburse the customer the appropriate amount.

IMPORTANT: OWL must be viewed prior to performing the recall to ensure the vehicle is involved and the campaign has not been previously completed. Also, check for a completion sticker prior to beginning work.

U.S. and Canadian dealers, if you need additional information, contact the Warranty Campaigns Department using the WSC (Warranty Support Center) app on the DTNA Portal. Export distributors, submit a WSC ticket or contact your International Service Manager.

U.S. and Canadian Dealers: To return excess kit inventory related to this campaign, U.S. dealers must submit a Parts Authorization Return (PAR) to the Memphis PDC. Canadian dealers must submit a PAR to their facing PDC. All kits must be in resalable condition. PAR requests must include the original purchase invoice number. Export Distributors: Excess inventory is not returnable.

The letter notifying U.S. and Canadian vehicle owners is included for your reference.

Please note that the National Traffic and Motor Vehicle Safety Act, as amended (Title 49, United States Code, Chapter 301), requires the owner's vehicle(s) be corrected within a reasonable time after parts are available to you. The Act states that failure to repair a vehicle within 60 days after tender for repair shall be prima facie evidence of an unreasonable time. However, circumstances of a particular situation may reduce the 60 day period. Failure to repair a vehicle within a reasonable time can result in either the obligation to (a) replace the vehicle with an identical or reasonably equivalent vehicle, without charge, or (b) refund the purchase price in full, less a reasonable allowance for depreciation. The Act further prohibits dealers from selling a vehicle unless all outstanding recalls are performed. Any lessor is required to send a copy of the recall notification to the lessee within 10 days. Any subsequent stage manufacturer is required to forward this notice to its distributors and retail outlets within five working days.

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Copy of Notice to Owners

Subject: Brake Modulator Valves

This notice is sent to you in accordance with the requirements of the 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 Truck North America LLC (DTNA), on behalf of its Freightliner Trucks Division, and wholly owned subsidiary, Western Star Truck Sales, Inc., has decided that a defect, which relates to motor vehicle safety, exists in certain 2017-2023 Freightliner 114SD, and Cascadia; and Western Star 47X, and 49X vehicles manufactured September 15, 2016, through April 8, 2022.

On the affected vehicles, the brake modulator valves on the front axle may corrode, which during a braking event initiated by Electronic Stability Control (ESC) or Roll Stability Control (RSC), may result in full system pressure applied to one front wheel end causing a brake pull differential in braking force. A full system pressure applied to one front wheel end could lead to a brake pull resulting in a sudden change in vehicle direction due to uneven braking on the front axle increasing the risk of a crash.

A Daimler Truck North America authorized service facility will inspect and replace brake modulator valves as required. The Recall will take approximately 2 hours and will be performed free of charge.

Please contact an authorized Daimler Truck North America dealer to arrange to have the Recall performed and to ensure that parts are available at the dealership. To locate an authorized dealer, search online at <https://northamerica.daimlertruck.com/contact-us>. Scroll down to "Locate a Dealer" and select the appropriate brand. You may also confirm your vehicle's involvement in this recall at the following URL: <https://dtna-dlrinfo.prd.freightliner.com:48518/VinLookup/vin-module/getVinLookupPage>.

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 in the postage-paid envelope 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. If you have paid to have this recall condition corrected prior to this notice, you may be eligible to receive reimbursement. Please see the reverse side of this notice for details.

If you have questions about this recall, please contact the Warranty Campaigns Department at (800) 547-0712, 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday, e-mail address dtna.warranty.campaigns@daimlertruck.com. If you wish to submit a complaint about this recall, you can contact Transport Canada - Road Safety, 80 Rue Noel, Gatineau, Quebec J8Z 0A1, or call (800) 333-0510.

We regret any inconvenience this action may cause but feel certain you understand our interest in motor vehicle safety.

WARRANTY CAMPAIGNS DEPARTMENT

Enclosure

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Copy of Notice to Owners

Subject: Brake Modulator Valves

This notice is sent to you in accordance with the National Traffic and Motor Vehicle Safety Act.

Daimler Truck North America LLC (DTNA), on behalf of its Freightliner Trucks Division, and wholly owned subsidiary, Western Star Truck Sales, Inc., has decided that a defect, which relates to motor vehicle safety, exists in certain 2017-2023 Freightliner 114SD, and Cascadia; and Western Star 47X, and 49X vehicles manufactured June 28, 2016, through March 29, 2022.

On the affected vehicles, the brake modulator valves on the front axle may corrode, which during a braking event initiated by Electronic Stability Control (ESC) or Roll Stability Control (RSC), may result in full system pressure applied to one front wheel end causing a brake pull differential in braking force. A full system pressure applied to one front wheel end could lead to a brake pull resulting in a sudden change in vehicle direction due to uneven braking on the front axle increasing the risk of a crash.

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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 in the postage-paid envelope 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. If you have paid to have this recall condition corrected prior to this notice, you may be eligible to receive reimbursement. Please see the reverse side of this notice for details.

If you have questions about this recall, please contact the Warranty Campaigns Department at (800) 547-0712, 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday, e-mail address dtna.warranty.campaigns@daimlertruck.com. 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 go to <http://www.nhtsa.gov>.

We regret any inconvenience this action may cause but feel certain you understand our interest in motor vehicle safety.

WARRANTY CAMPAIGNS DEPARTMENT

Enclosure

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Reimbursement to Customers for Repairs Performed Prior to Recall

If you have already **paid** to have this recall condition corrected 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 an authorized Daimler Truck North America LLC dealer. 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 vehicle that was repaired
- What problem occurred, what repair was done, when the repair was done
- Who repaired the vehicle
- The total cost of the repair expense that is being claimed
- 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 Daimler Truck North America LLC dealer.

Please speak with your Daimler Truck North America LLC authorized dealer concerning this matter.

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Work Instructions

Subject: Inspect and Replace Brake Modulator Valves

Models Affected: Specific model years 2017-2022 Freightliner 114SD, and Cascadia; and Western Star 47X, and 49X vehicles manufactured June 28, 2016, through April 8, 2022.

IMPORTANT: Due to parts unavailability, this campaign will be released in phases. The phase will be determined based on corrosion factors. You must confirm a vehicle displays FL966 on the OWL coverage information screen before proceeding.

PLEASE DO NOT OVERSTOCK THE KITS, AND DO NOT PERFORM ON THE VEHICLES THAT ARE NOT ACTIVE IN OWL.

FL966B – Front Modulator Valve Inspection

1. Check the base label (Form WAR259) for a completion sticker for FL966 (Form WAR260), indicating this work has been done. The base label is usually located on the passenger-side door, about 12 inches (30 cm) below the door latch. If a completion sticker is present, no work is needed. If a completion sticker is not present, proceed to the next step.
2. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
3. Open the hood.

NOTE: Both the left- and right-hand modulator valves must be inspected. If either one of the modulator valves is bad, replace both modulator valves.

4. Remove the connector from the valve, and inspect the part number underneath the connector. See [Fig. 1](#).

Good part numbers → **472 196 046 0** and **472 196 051 0**

Bad part numbers → **472 196 025 0** and **472 196 037 0**

- If the part numbers are good, install the connector. Clean a spot on the base label (Form WAR259), and attach a campaign completion sticker for FL966 (Form WAR260), indicating this work has been completed.
- If at least one of the part numbers is bad, go to the replacement procedure for the specified group, and replace both the modulator valves.

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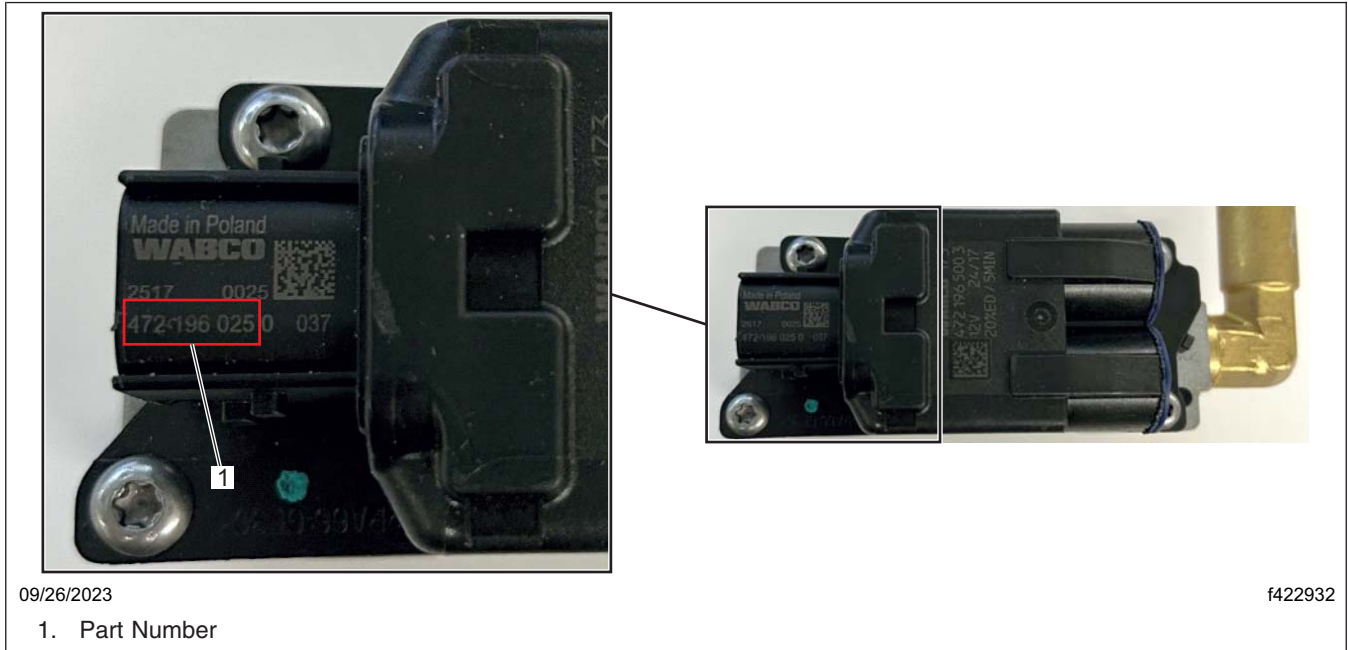


Fig. 1, Modulator Valve

FL966A, B – Front Modulator Valve Replacement

NOTE: Both the left- and right-hand modulator valves must be replaced.

1. Locate the modulator valve on the front-left frame rail, behind the wheel. See [Fig. 2](#).
2. Use the flat end of a screwdriver to disconnect the modulator valve electrical connector located on the front side of the frame rail, above the front axle. See [Fig. 3](#).

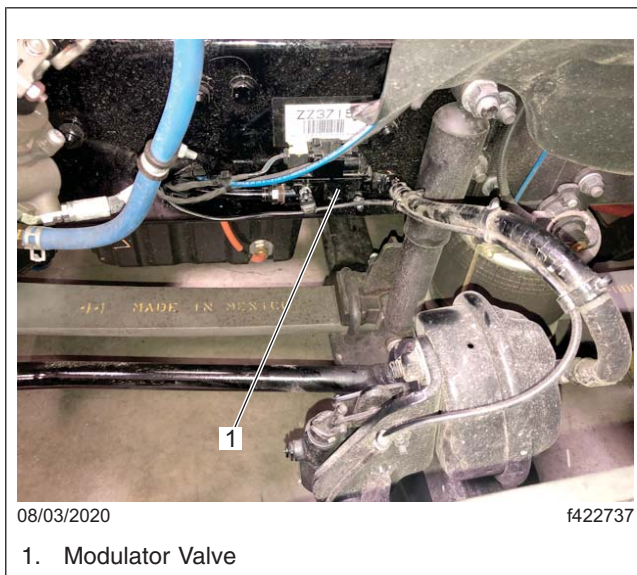


Fig. 2, Location of the Modulator Valve

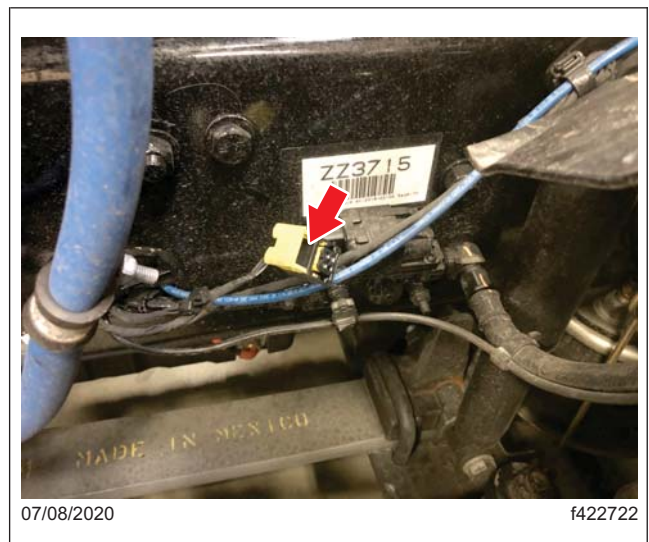


Fig. 3, Location of the Electrical Connector

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3. Remove the antilock braking system (ABS) zip tie from the modulator mounting bolt. See **Fig. 4**.

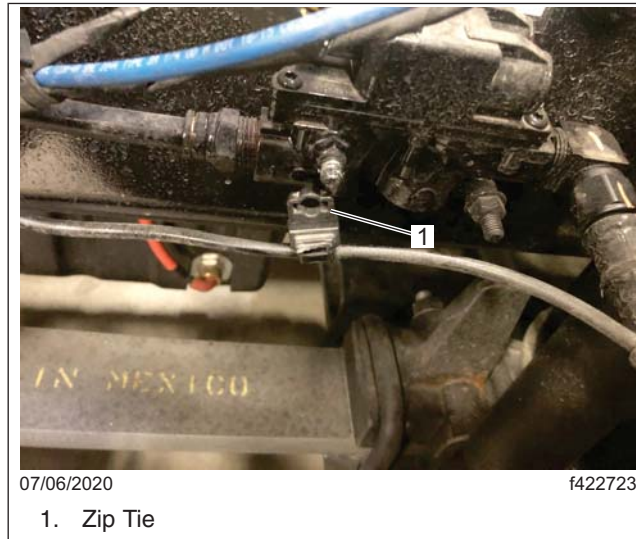


Fig. 4, ABS Zip Tie

4. Use the special tool (NQ307001-1), supplied in the kit, to disconnect the plastic air line from the modulator valve. See **Fig. 5** and **Fig. 6**.

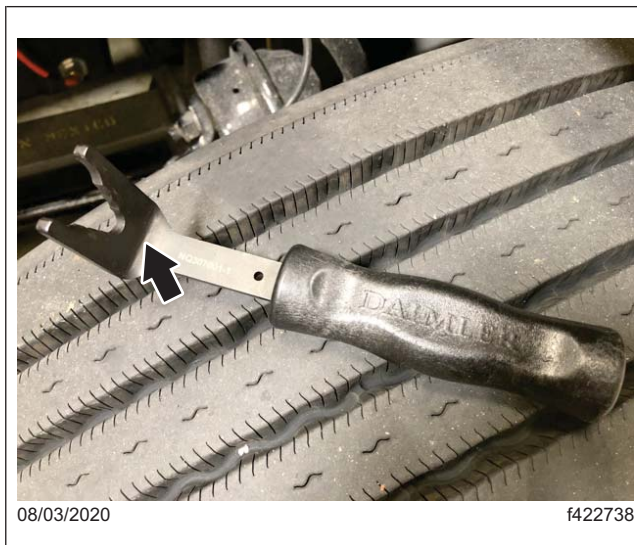


Fig. 5, Special Tool (NQ307001-1)

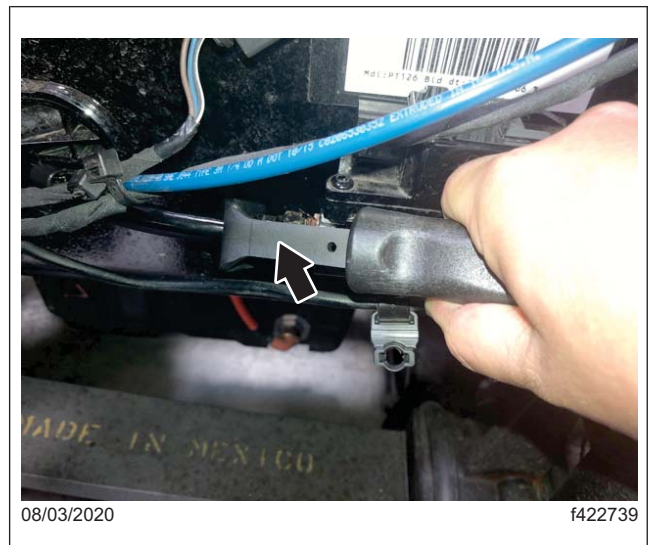


Fig. 6, Disconnecting the Plastic Air Line

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5. Use a 7/8-inch wrench to remove the quick-connect fitting from the modulator. See [Fig. 7](#).
6. Use a 7/8-inch wrench to remove the threaded air line that connects the modulator to the brake chamber. See [Fig. 8](#).

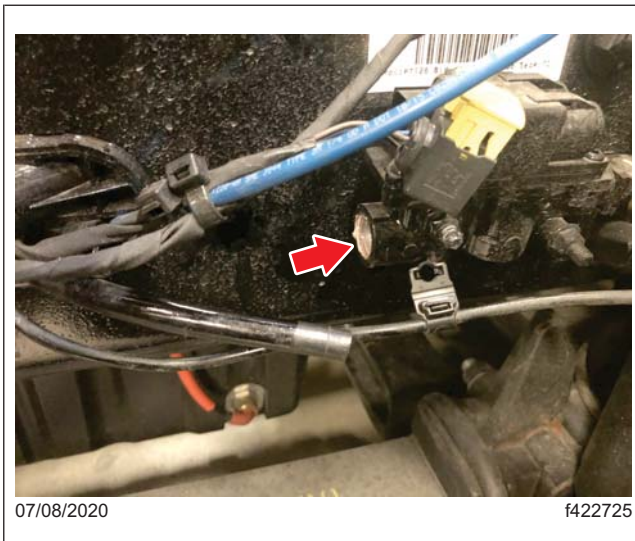
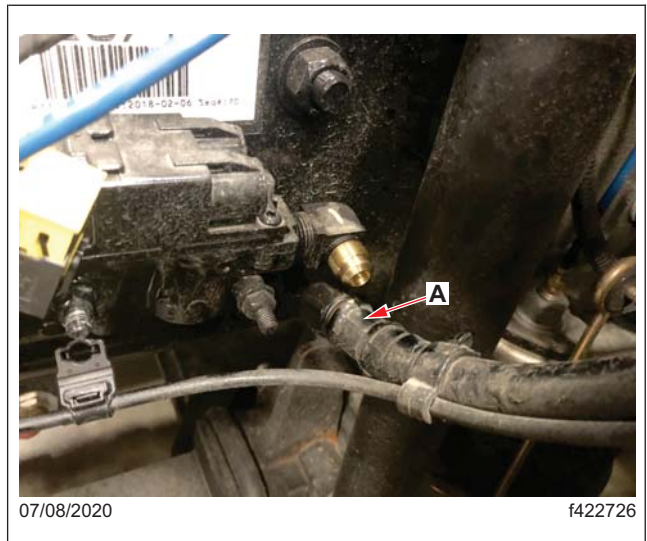


Fig. 7, Disconnecting the Quick-Connect Fitting



A. Remove the threaded air line that connects the modulator valve to the brake chamber.

Fig. 8, Removing the Threaded Air Line

7. Use a 23-mm wrench to loosen the brake chamber air line fitting on the modulator valve. See [Fig. 9](#).

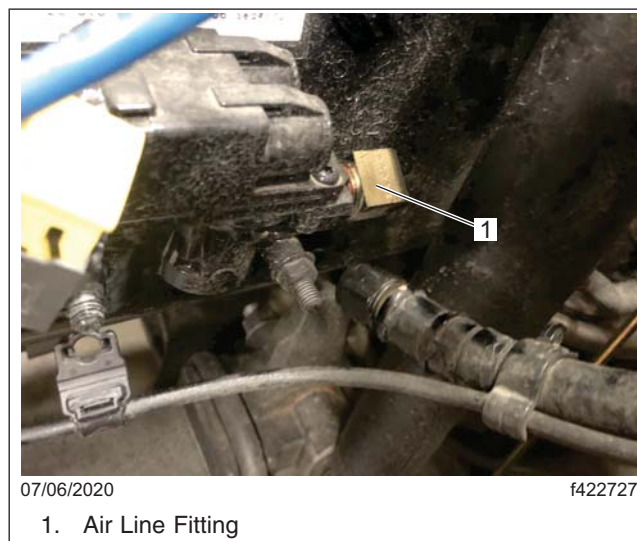


Fig. 9, Loosening the Brake Chamber Air Line Fitting

8. Use a 1/2-inch socket wrench to remove the two modulator valve mounting bolts, then remove the modulator valves from the vehicle.
9. Use a 23-mm wrench to remove the brake chamber air line fitting from the modulator valve.

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IMPORTANT: The quick connect fittings come with pre-applied dry sealant (Vibra-Seal) which can be reused up to five times. Replace the fitting with a new one if the thread sealant is no longer usable.

10. Use a 23-mm wrench to install the brake chamber air line fitting on the new modulator valve.
11. Use a 1/2-inch socket wrench along with the new bolts, spacers, and washers (supplied in the kit) to install the modulator on the vehicle. Tighten the bolts 11 lbf-ft (15 N·m). See [Fig. 10](#), [Fig. 11](#), [Fig. 12](#), and [Fig. 13](#).

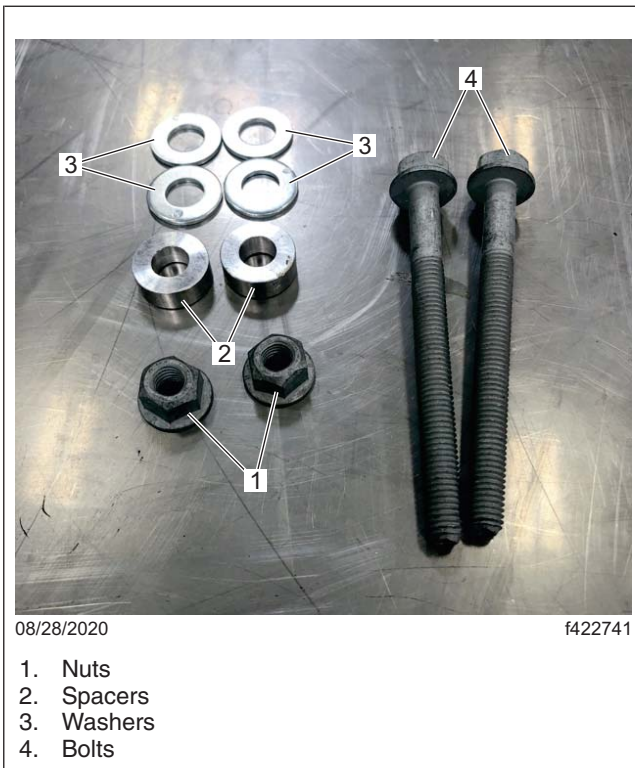


Fig. 10, 25-FL958-000 Kit Components

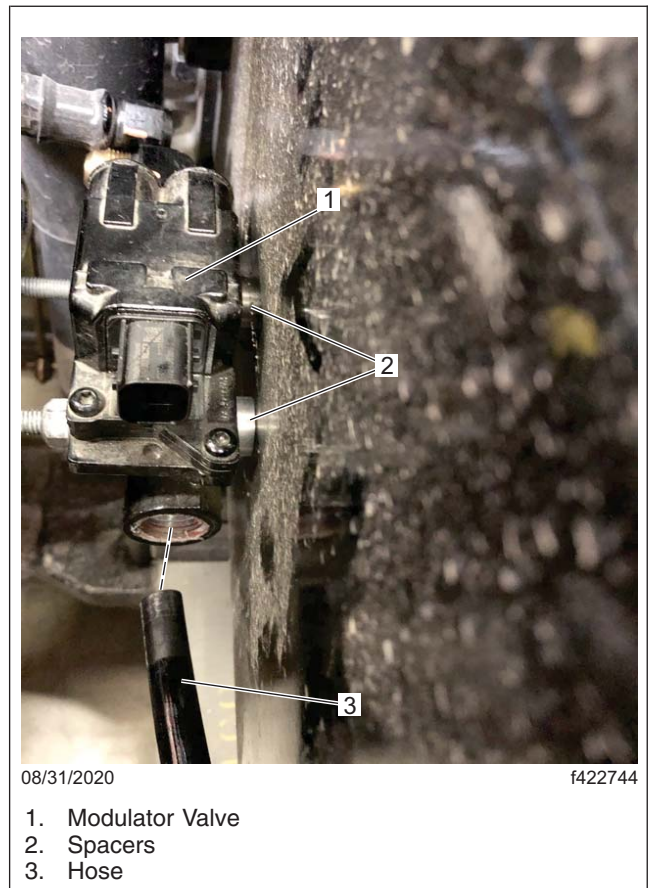


Fig. 11, Installing the Spacers

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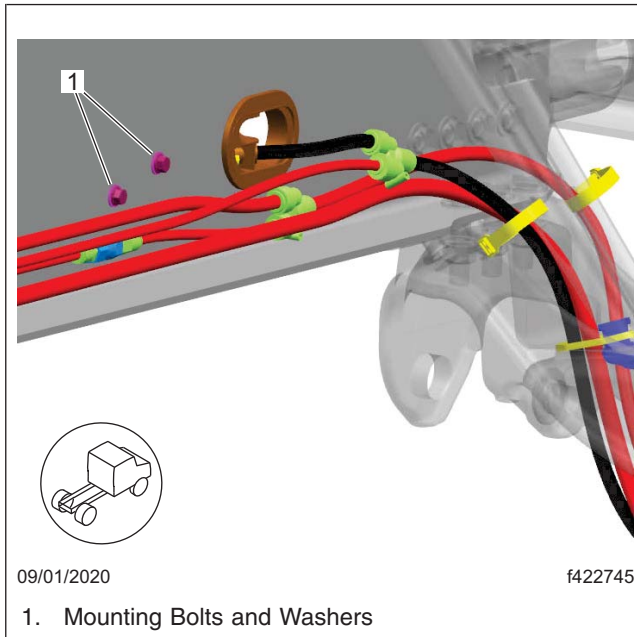


Fig. 12, Modulator Valve Fasteners, Inside Frame Rail View

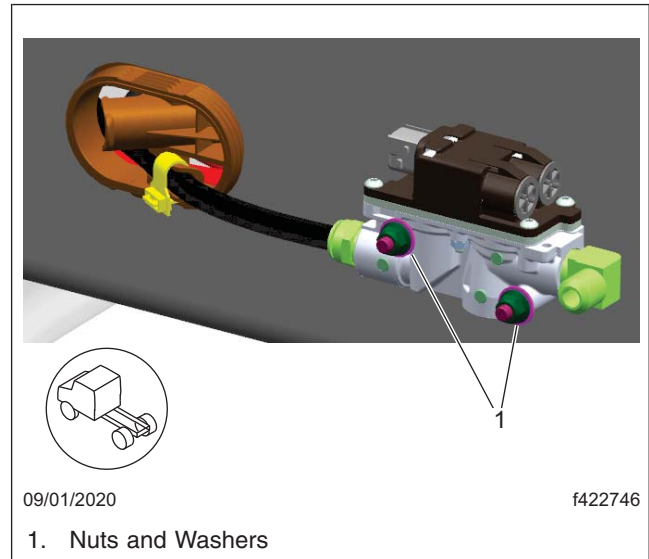


Fig. 13, Modulator Valve Fasteners, Outside Frame Rail View

12. Use a 7/8-inch wrench to install the threaded air line that connects the modulator valve to the brake chamber.

IMPORTANT: The quick connect fittings come with pre-applied dry sealant (Vibra-Seal) which can be reused up to five times. Replace the fitting with a new one if the thread sealant is no longer usable.

13. Use a 7/8-inch wrench to install the quick-connect fitting on the modulator valve.

14. Attach the plastic air line to the modulator.

15. Install the ABS zip tie on the modulator mounting bolt (to prevent chafing).

16. Connect the modulator valve electrical connector.

17. Repeat the procedure for the modulator valve on the other side of the vehicle.

18. Close the hood.

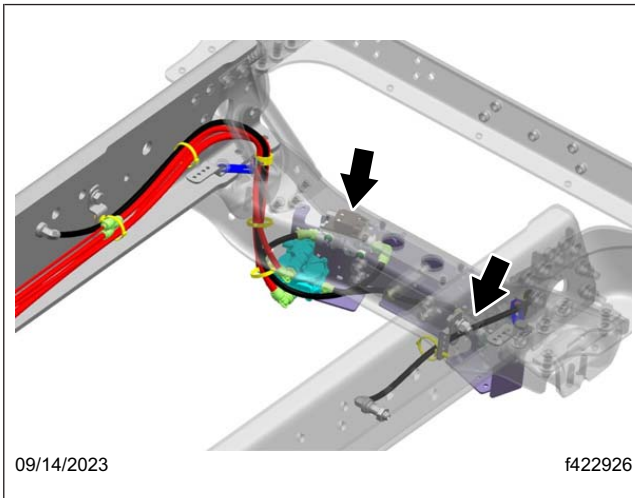
19. Build air pressure to check for leaks and perform six full brake applications in the parking lot to verify proper brake performance.

20. Clean a spot on the base label (Form WAR259), and attach a campaign completion sticker for FL966 (Form WAR260), indicating this work has been completed.

FL966C – Front Modulator Valve Replacement

For vehicles belonging to group C, the replacement procedure is the same as groups A and B, but the location of the valves is different. Location of the modulator valve is shown in [Fig. 14](#) and [Fig. 15](#).

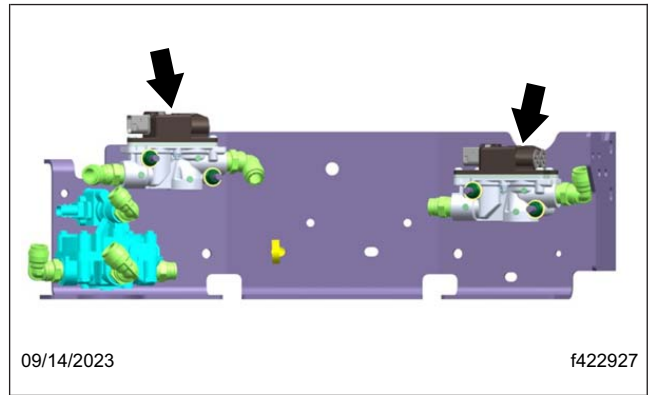
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Fig. 14, Modulator Valve Mounting under the Cross Member



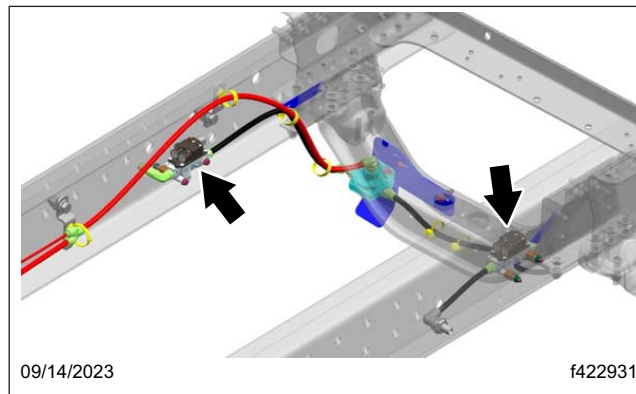
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Fig. 15, Modulator Valve Mounting Location

FL966F – Front Modulator Valve Replacement

For vehicles belonging to group F, the replacement procedure is the same as groups A and B, but the location of the valves is different. Location of the modulator valve is shown in [Fig. 16](#).



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Fig. 16, Modulator Valve Mounting Inside the Frame Rails

FL966D – Front Modulator Valve Replacement

For vehicles belonging to group D, the replacement procedure is the same as groups A and B, but the location of the valves is different. Location of the modulator valve is shown in [Fig. 17](#) and [Fig. 18](#).

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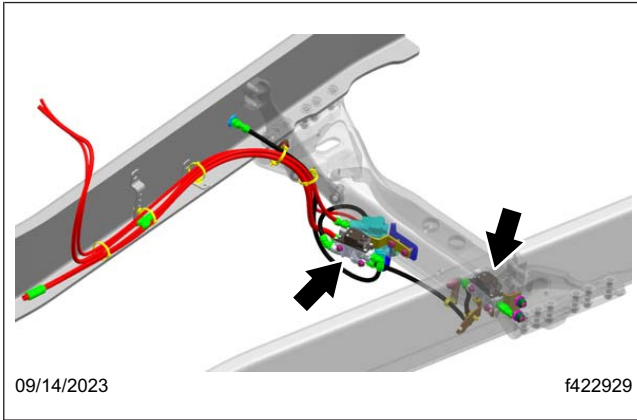


Fig. 17, Modulator Valve Mounting Inside the Frame Rails

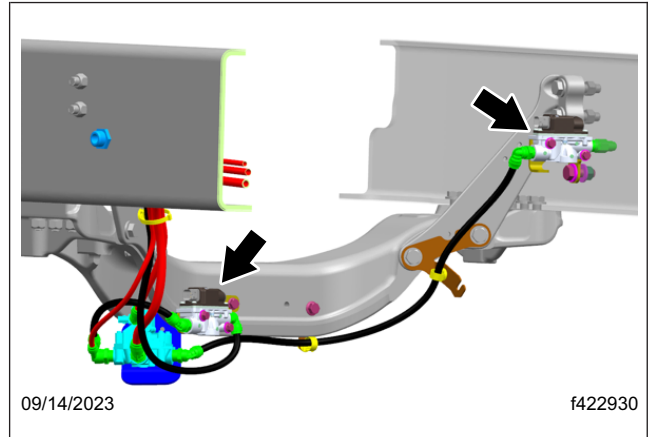


Fig. 18, Modulator Valve Mounting location

FL966E – Front Modulator Valve Replacement

For vehicles belonging to group E, the replacement procedure is the same as groups A and B, but the location of the valves is different. Location of the modulator valve is shown in [Fig. 19](#).

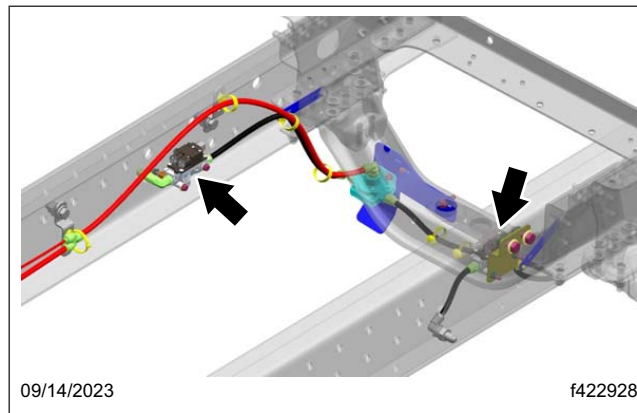


Fig. 19, Modulator Valve Mounting Inside the Frame Rails