Authorized Field Change

NAVISTAR®

AFC 17902

Date: JUNE 2017

Subject File: SPRINGS

Subject: Spring Hanger Inspection and Replacement

Model: DuraStar®, CE Bus, FBC Bus, FE Chassis, SFC Bus
Start Date: 03/15/2017 End Date: 04/17/2017

DESCRIPTION

Certain DuraStar, CE Bus, FBC Bus, FE Chassis, and SFC Bus models may have a gap between the Front Spring Bracket and the lower flange of the frame rails. This gap could cause a portion of the bracket to crack, which could result in noise from the front suspension system and shortened design life of the bracket.

ELIGIBILITY

This procedure applies ONLY to vehicles marked in the International® Service Portal℠ with AFC 17902. Check and complete any other open campaigns also at this time.

TOOLS INFORMATION

IMPORTANT: If requesting a Tool through the Loaner Program, you are required to take the LMS course on the Huck Tool operation. In addition, it is necessary to schedule as many vehicles for repair prior to arrival of the tool. Due to limited availability, loaner tools are issued for one week only.

Table 1. Tools Required

Tool Number	Tool Description
Obtain Locally	Air Hammer and Chisel
If Necessary, Create a Tool Case File and Obtain Through Loaner Tool Program	Huck Tool and Appropriate Nose Piece Adapter **NOTE: Tools requested through the Loaner Tool Program are Huck-Spin® 2 Type Only.**

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PARTS INFORMATION

CAUTION: To prevent vehicle and / or component damage, use the same size bolt or huck removed during disassembly. Use only the type of fastener removed during disassembly to install new spring hanger bracket.

NOTE: Parts quantities will double for vehicles with 2 brackets (with exception of cotter pins and strap cable locks).

Table 2. Parts Information DuraStar Vehicles with One Bracket

Part Number	Description	Quantity
3540855C93	Bracket, Front Spring Front	1
3691086C1	Bolt Huck-Spin 5/8 Diameter-12	4
3691083C1	Nut, Huck Spin Collar	4
103389	Cotter Pin	1
306132C1	Strap Cable Lock	2
3948245C1	Guide Brk Hose & Cable	As Needed if Replacement is Required

Table 3. Parts Information Buses with One Bracket

Part Number	Description	Quantity
3540855C93	Bracket, Front Spring Front	1
3691086C1	Bolt Huck-Spin 5/8 Diameter-12	2
3691083C1	Nut, Huck Spin Collar	2
30750R2	Bolt M16 X 40 mm	2
30756R1	Nut, Hexagon	2
103389	Cotter Pin	1
306132C1	Strap Cable Lock	2
3948245C1	Guide Brk Hose & Cable	As Needed if Replacement is Required

INSPECTION PROCEDURE

WARNING: To prevent property damage, personal injury, and / or death, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING: To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING: To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING: To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING: To prevent property damage, personal injury, and /or death, remove ground cable from negative terminal of main battery before disconnecting or connecting electrical components. Always connect ground cable last.

1. Park vehicle on flat surface.
2. Shift transmission to Park or Neutral and set parking brake.
3. Install wheel chocks.

NOTE: Certain vehicles may need to have the right-side spring hanger bracket replaced in addition to the left-side; follow inspection procedure on right-side of vehicle to verify spring hanger bracket quality.

Table 4. Number of Spring Hanger Brackets on Vehicles

Number of Spring Hanger Brackets	Vehicle Type
1	CE Bus
1	DuraStar with 2017 Emission Engine
2	DuraStar with Pre-2017 Emission Engine
2	FBC Bus
2	FE Chassis
2	SFC Bus

INSPECTION PROCEDURE (CONT.)

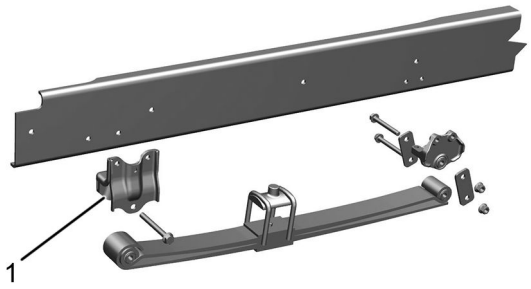

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Figure 1. Front Spring Hanger Bracket Location

1. Spring hanger bracket

4. Locate front spring bracket (Figure 1, Item 1) on left-side of vehicle.

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Figure 2. Spring Hanger Bracket Gap

1. Visible gap

5. Visually inspect between spring hanger bracket and bottom of frame for a visible gap (Figure 2, Item 1). If gap is present bracket should be replaced.

INSPECTION PROCEDURE (CONT.)

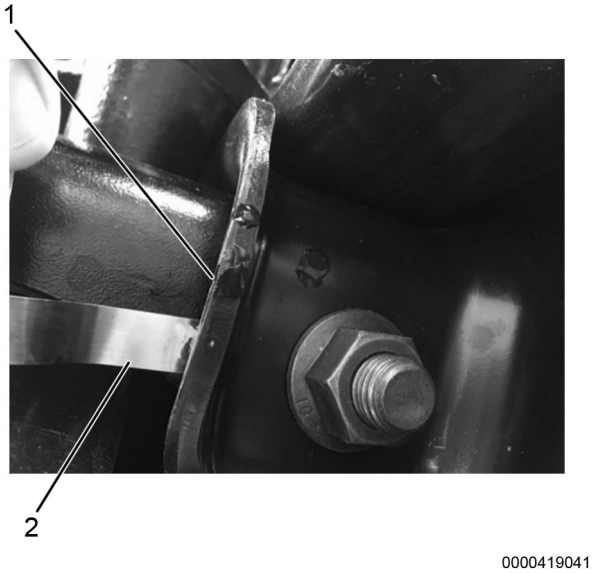

Figure 3. Gap Inspection Location

1. Flange rail / Bracket surface
2. Feeler gauge

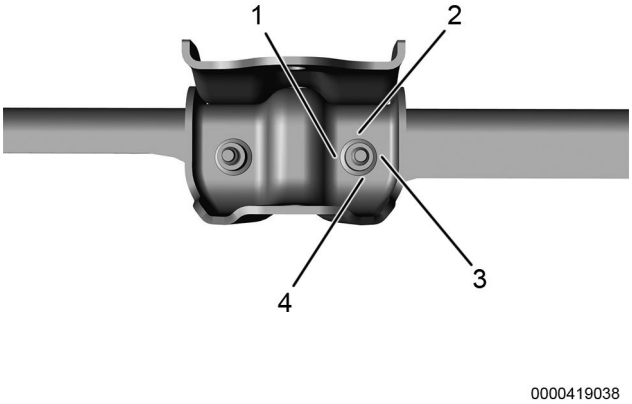

Figure 4. Inspection Points

1. Inspection point 1
2. Inspection point 2
3. Inspection point 3
4. Inspection point 4

INSPECTION PROCEDURE (CONT.)

NOTE: Feeler gauge (0.001 inch thick) should not be able to slide between bracket and flange of rail within nut diameter. If any less then 3 out of 4 fail inspection, replace bracket.

6. Use feeler gauge (0.001 inch thick) (Figure 3, Item 2) to verify contact between spring bracket and bottom flange of frame rail (Figure 3, Item 1) in any three out of four locations (Figure 4, Items 1, 2, 3, & 4) for both huck fasteners or bolts.

7. Locate spring bracket on right-side of vehicle and repeat steps 5 and 6.

8. If vehicle passes inspection proceed to step 9 of Inspection Procedure. If vehicle failed inspection, stop and perform Service Procedure.

9. Remove wheel chocks.

SERVICE PROCEDURE

NOTE: Service Procedure is ONLY required if the spring bracket does not pass inspection and requires replacement.

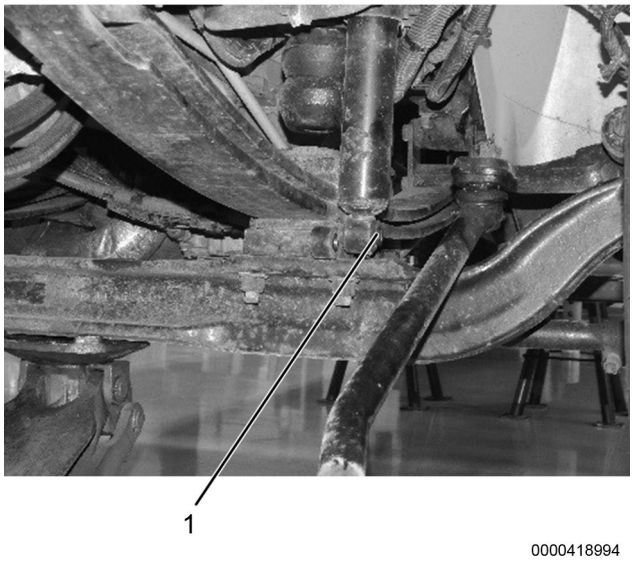

Figure 5. Shock Bolt Location

1. Lower shock bolt / Nut

1. Using a floor jack positioned at a safe location on front axle, lift vehicle approximately 36 inches and secure with 3-foot jack stands on frame just behind exhaust (just behind transmission on buses).

2. Lower vehicle onto jack stands.

SERVICE PROCEDURE (CONT.)

3. Remove left-side front wheel. For vehicles requiring front right spring bracket replacement, remove front right-side wheel.

4. Remove left-side and right-side lower shock bolt and nut (Figure 5, Item 1) and allow shocks to hang.

5. If necessary, remove windshield washer reservoir and bracket.

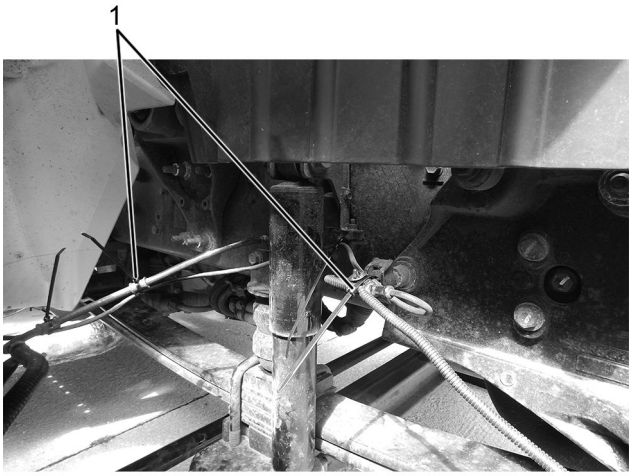

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Figure 6. ABS / Brake Hose Connection

1. ABS / Brake hose connection

6. Remove brake hose from frame fitting on both sides and unclip ABS wire from hose (Figure 6, Item 1) to allow slack in cable.

7. Disconnect drag link from pitman arm.

8. If necessary, disconnect passenger-side radiator stay rod.

WARNING: To prevent property damage, personal injury and/or death, use extreme caution when lowering or raising the jack to allow suspension to move.

NOTE: Use jack to raise or lower front axle to allow removal of the spring bolt from hanger.

9. Remove spring bolts connecting springs to front spring hangers on both sides.

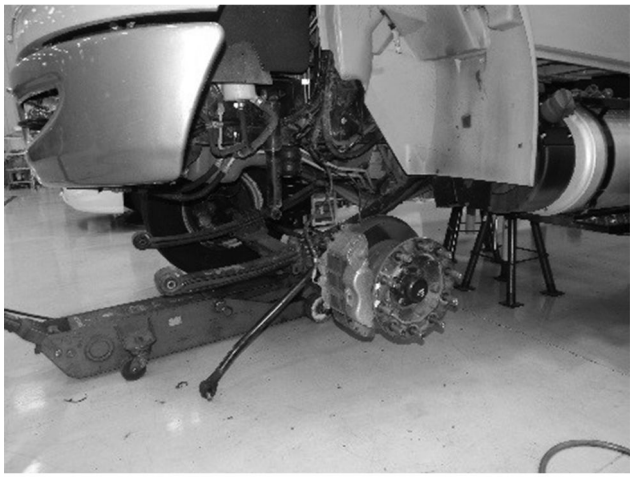

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Figure 7. Lowered Front Axle

10. Lower jack and allow front springs to drop down from spring hangers until jack is lowered completely (Figure 7).

SERVICE PROCEDURE (CONT.)

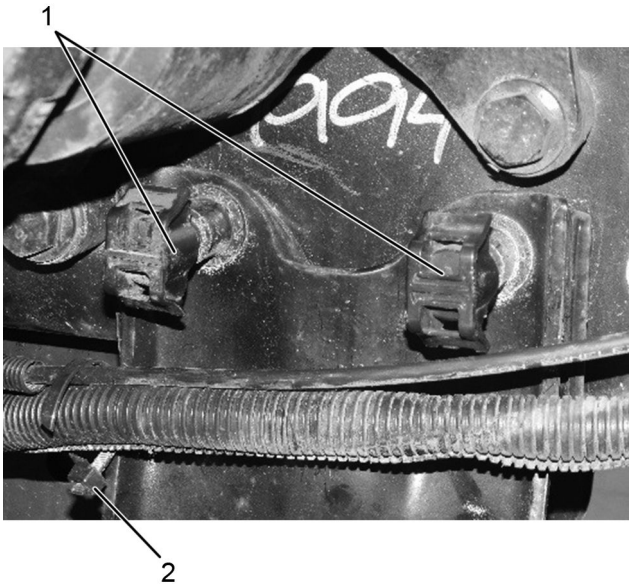

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Figure 8. Huck Fasteners and Tie Straps

1. Huck fastener standoff (2)
2. Tie strap

11. Cut tie straps, remove standoffs from huck fasteners (Figure 8, Items 1 & 2).

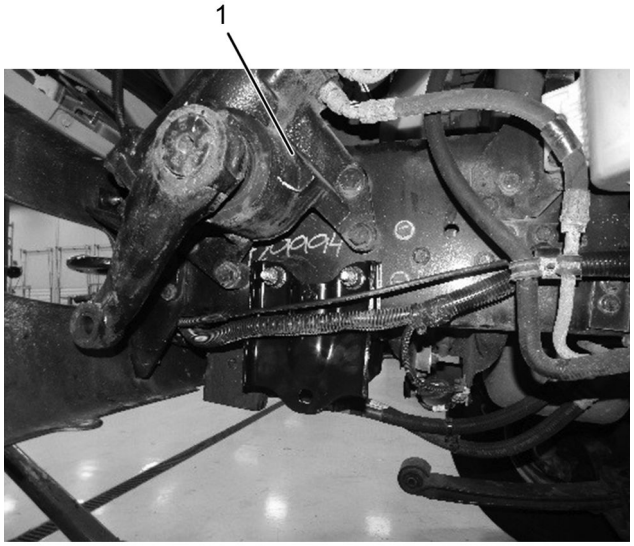

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Figure 9. Steering Gear

1. Steering gear

NOTE: Some vehicles may require the steering gearing box to be repositioned to allow clearance for huck tool. Do Not disconnect steering gear hoses or the steering shaft to the steering gear.

12. If necessary, loosen steering gear box and position steering gear upward (Figure 9, Item 1).

NOTE: Due to radius bend in the bracket, some huck tools may not be able to fit in and completely cut the huck collar. An air hammer and chisel may be required to completely remove the collar from the huck.

13. Using huck tool, air hammer, and chisel, cut and remove huck fasteners from left-side spring hanger (remove 2 bottom bolts on CE buses).

14. Remove defective spring hanger, mark defective, do not reuse. Tag part with affected chassis number for warranty return.

SERVICE PROCEDURE (CONT.)

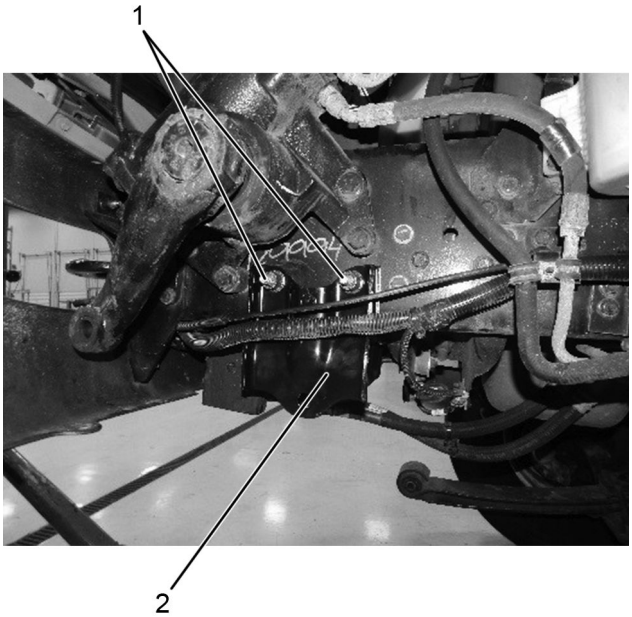

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Figure 10. New Spring Hanger

1. Side huck fastener / Collar (2)
2. Spring bracket

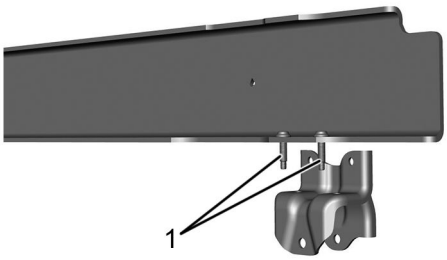

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Figure 11. Spring Bracket Bottom Hucks / Bolts

1. Bottom huck / Bolt (2)

15. Place new spring hanger (Figure 10, Item 2) in appropriate location and install new huck fasteners and collars (Figure 10, Item 1). CE buses; install bottom bolts (Figure 11, Item 1) and nuts.

SERVICE PROCEDURE (CONT.)

NOTE: For instructions on swaging huck fasteners or huck tool usage refer to appropriate frame service manual or appropriate training video.

NOTE: The bottom huck fasteners or bolts must be tightened first.

16. Swage huck fasteners with huck tool starting with bottom first, then side fasteners. CE buses; tighten bottom bolts and nuts to 217 - 240 lb-ft (294 - 240 N•m), then swage side huck fasteners.

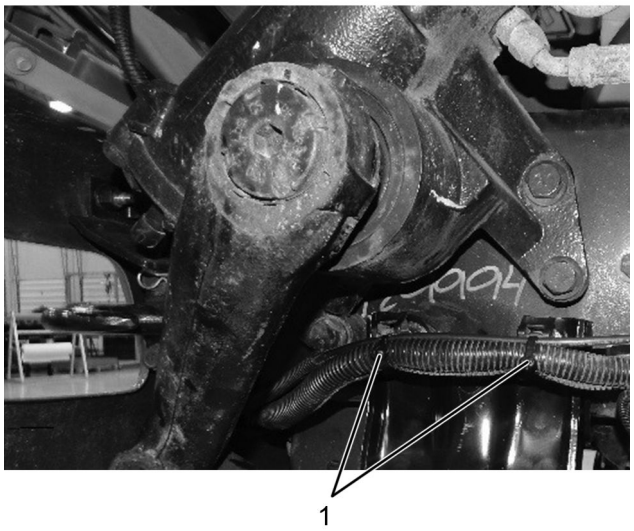

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Figure 12. Tie Straps

1. Tie strap (2)

17. Reinstall standoffs for wiring on top of huck fasteners and install tie straps (Figure 12, Item 1) to secure harness.

18. If vehicle has steel stamped spring hanger bracket on right-side follow steps 11-17 on right-side.

19. If necessary, reposition steering gear box. Using torque wrench, tighten steering gear to 240 lb-ft (325 N•m).

20. Using floor jack lift front axle into position.

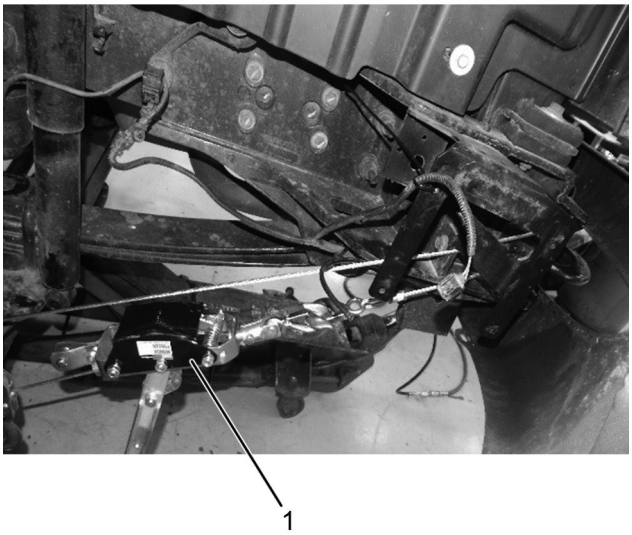


Figure 13. Winch Puller

1. Winch puller

21. Attach winch puller (Figure 13, Item 1) around right-side of axle and around the tow hook.

NOTE: Use pry bar to help with alignment.

22. Use winch puller to move spring forward to align hole for spring bolt.

23. Install spring bolt and nut.

24. Remove winch puller and install on left-side of axle.

25. Repeat steps 21 through 24 on left-side of vehicle.

26. Remove winch puller.

27. Using torque wrench, tighten spring bolts to 330 - 370 lb-ft (447 - 502 N•m).

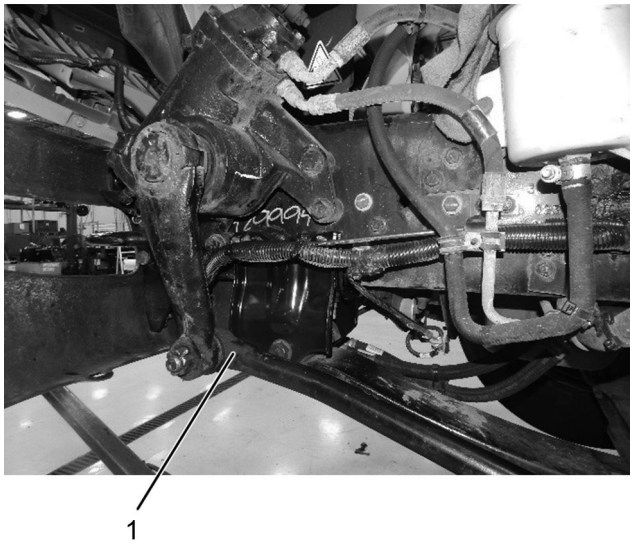


Figure 14. Drag Link

1. Drag link

28. Install drag link (Figure 14, Item 1). Using torque wrench, tighten nut to 163 - 230 lb-ft (221 - 312 N•m).

NOTE: If cotter pin hole is not visible when torqued, tighten castle nut to allow cotter pin installation.

29. Install new cotter pin.

CAUTION: To prevent component damage, position air brake hose behind the shock and tie strap to the frame. The air hose has the potential to rub against the shock and cause component failure if not positioned behind the shock.

30. Connect brake hose; refer to appropriate service manual. Tie strap ABS wiring to hose on left-side and right-side.

31. Reinstall left-side and right-side lower shock bolt and nut. Using torque wrench, tighten bolts to 200 - 240 lb-ft (271 - 325 N•m).

32. If necessary, install passenger-side radiator stay rod. Using torque wrench, tighten bolt to 21 - 24 lb-ft (29 - 32 N•m).

33. Paint new spring hanger and touch up any paint damage on either side.

34. If necessary, reinstall windshield washer reservoir and bracket.

35. Reinstall left-side and right-side wheel (if removed).

SERVICE PROCEDURE (CONT.)

36. Lift vehicle and remove stands.

37. Lower jack and remove from under vehicle.

38. Using torque wrench, tighten wheel nuts to 450 - 500 lb-ft (610 - 678 N•m).

39. Start vehicle and turn wheels from lock to lock, listen for pump to go into relief. If pump does not go into relief then poppetts must be reset. Refer to appropriate service/technician manual for detailed instructions.

40. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Table 5. Labor Information

Operation No.	Description	Time
A40-17902-1	Inspect Spring Hanger Bracket - One	0.3 hr
A40-17902-2	Inspect Hanger Bracket - Both	0.4 hr
A40-17902-3	Inspect and Replace One Hanger Bracket - Left-side	2.9 hr
A40-17902-4	Inspect and Replace Hanger Bracket - Right-side	2.7 hr
A40-17902-5	Inspect and Replace Hanger Brackets - Both	3.1 hr

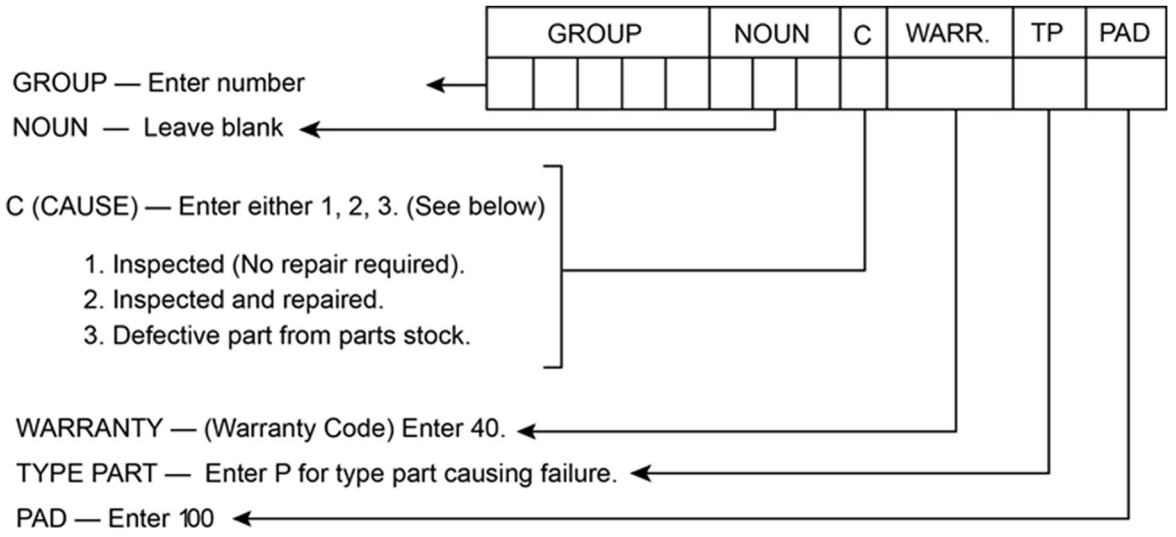
ADMINISTRATIVE PROCEDURE

Expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Authorized Field Change Number 17902.

Section 7 of the Warranty Policy and Procedures Manual contains further information related to the submission and processing of AFC / Recall claims.

As with all claim submissions, items acquired locally must be submitted in the “Other Charges” tab. The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.

To ensure this important improvement is made in a timely manner, all claims for 17902 activity must be submitted by 05 July 2018 or within the normal warranty period for the component, if after 05 July 2018.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PAD
GROUP — Enter number
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C (CAUSE) — Enter either 1, 2, 3. (See below)
1. Inspected (No repair required).
2. Inspected and repaired.
3. Defective part from parts stock.
WARRANTY — (Warranty Code) Enter 40.
TYPE PART — Enter P for type part causing failure.
PAD — Enter 100

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