



# Spartan Fire, LLC

Technical Service Bulletin  
TSB25-240-001

**DATE:** 3/26/2025

**APPLIES TO:** This service bulletin applies to certain model year 2011-2025 Gladiator and Metro Star, and 2024 KME Panther model emergency response chassis cabs built between January 2011 and February 2025.

**CONDITION:** Certain IFS Steering gear cover may develop a leak as a result of cover fasteners loosening.

**CORRECTION:** Replace cover fasteners with new cover bolts and torque to specification

**LABOR ALLOCATION:** 2 hours per side

**CLASSIFICATION:** T3

**PARTS NEEDED:**

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	K716856	Steering gear cover bolt kit per side

**GENERAL INSTRUCTIONS:**

Thoroughly review entire service bulletin before starting work. If there are questions or concerns with steps defined in this service bulletin, contact Spartan Fire, LLC. Customer & Product Support Group.

All applicable industry safety standards must be followed when performing work identified in this procedure.

Service Bulletins are intended for use by Professional Technicians only. They are written to guide Professional Technicians in performing service to vehicles of specific nature in conjunction with industry standards. Professional Technicians should be appropriately trained on industry standards and have the tools and equipment to perform procedures safely and properly.



## Installation Instructions, D716878

### IFS Fire Truck Steering Gearbox Cover Bolt Replacement

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ReycoGranning® uses the following types of notices for potential safety problems and to give information that will prevent damage to equipment.

#### **WARNING**

A warning indicates procedures that must be followed exactly. Serious personal injury can occur if the procedure is not followed.

#### **CAUTION**

A caution indicates procedures that must be followed exactly. Damage to equipment or suspension components and personal injury can occur if the procedure is not followed.

#### **NOTE**

A note indicates an operation, procedure or instruction that is important for correct service.

All work shall be done with front of vehicle safely supported off the ground and tires/wheels removed.

#### **WARNING**

Never work under a vehicle supported by only a jack(s). Jacks can slip or fall over and cause serious personal injury. Always use safety stands. Do not place jacks or safety stands under the lower control arms to support the vehicle. Lower control arms are not stationary components and could move allowing the vehicle to drop causing serious personal injury.

The vehicle may be supported on safety stands by the suspension sub frame or chassis frame for repairs that require removal of the wheel and tires or deflation of the air springs. Always secure the vehicle by setting the parking brake and block the drive wheels to prevent vehicle movement before performing repairs.

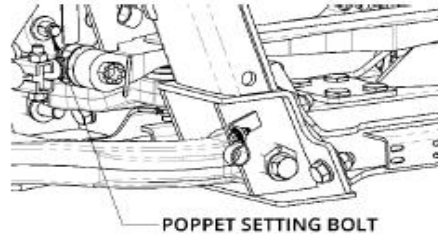
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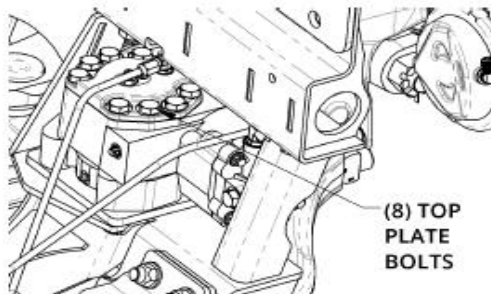
## IFS Fire Truck Steering Gearbox Cover Bolt Replacement Procedure

**NOTE: Instructions below show the replacement of top bolts in the Officer side / main steering gear. Use similar methodology for replacement of top bolts on Captain side / auxiliary steering gear.**

1. Drain steering system.
  - a. Set up funnel and catch pan for fluid.
  - b. Drain steering fluid by removing the poppet bolt shown in image above. When fluid no longer flows from open port, steering fluid level should be sufficiently below threads.



2. Locate top bolts to replace.



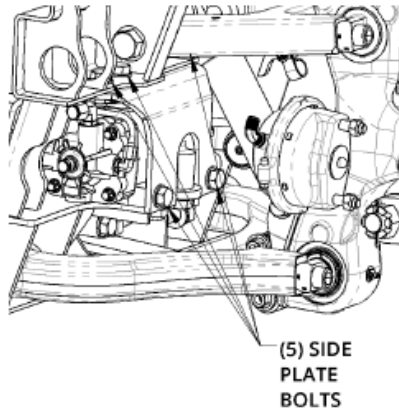
3. Note that new bolts will have a "C" embossed into the top of the bolt head.



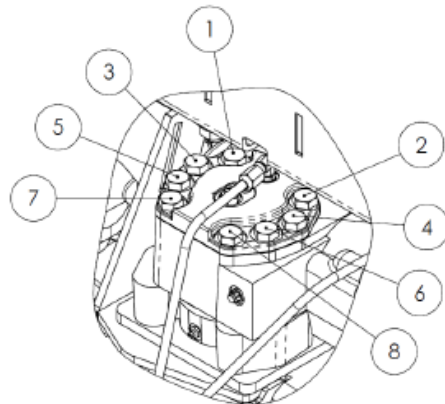
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4. Remove steering gear side cover.



5. Remove top plate bolt 1.



- a. Check that fluid level is below height of internal threads.
- b. If any fluid seeps out of hole after bolt is removed, or if fluid height is not below internal threads, revisit step 1.

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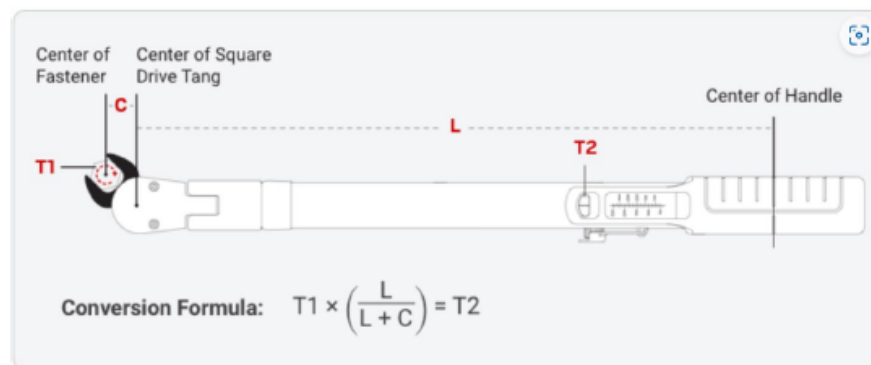


6. Using a clean shop towel, twist a portion such that it will fit down into the now open bolt hole. Spray twisted portion with brake cleaner and insert into open bolt hole. Repeat until no oil residue is visible on shop towel.
  - a. NOTE – Do not spray brake fluid down into open bolt hole as this will contaminate steering fluid in system.
7. Insert new bolt from kit K716856 and thread into hole until bolt head contacts steering gear top plate.
8. Torque new bolt per below steps:
  - a. Use an adjustable torque wrench capable of 250 lb-ft and a 15/16 x 1/2 inch drive torque adapter capable of reaching bolts – see example torque adapter below.

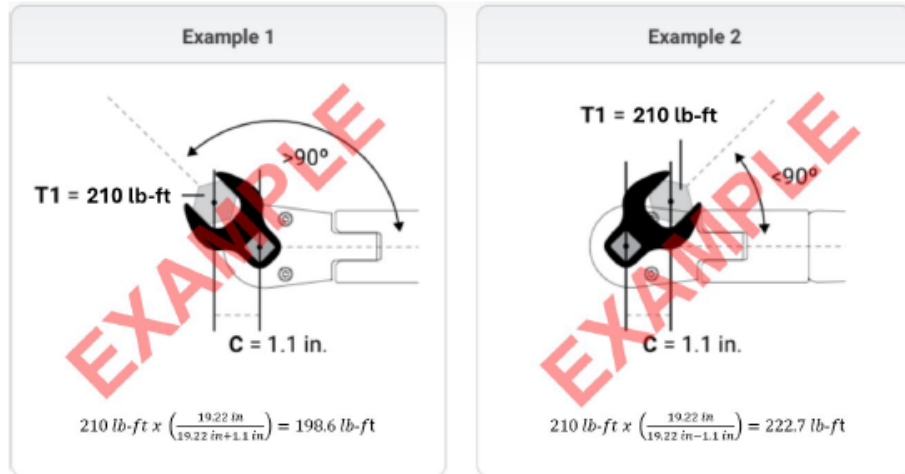


- b. Using 210 lb-ft as T1, calculate torque wrench torque (T2) using formula below:

**NOTE: Formulas and values at the bottom of the image below are examples – you will need to enter the length of your torque adapter and torque wrench to get accurate T2 torque.**



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- c. Using torque wrench and 15/16-inch torque adapter, torque the new bolt using calculated T2 torque as indicated by torque wrench.
9. Repeat steps 5 thru 8 for bolts 2 thru 8.
  10. Visually verify that all 8 bolts in steering gear top plate have been replaced and have a "C" embossed in the top of the bolt head (see image in step 3).
  11. Re-install the poppet setting bolt and torque to 38 to 42 lb-ft.
  12. Reinstall steering gear side mounting plate – torque bolts / nuts to 290 to 310 lb-ft.  
**NOTE: Do not operate vehicle without side plate installed and hardware torqued to spec. Operation of vehicle with side plate not installed or hardware not torqued will result in structural damage to suspension unit.**
  13. Refill steering fluid system using standard vehicle manufacturer instructions.
  14. With vehicle front wheels raised off the ground and vehicle engine running, cycle steering full left and full right 5-10 times to purge any air in steering system.
  15. Check vehicle steering fluid level and refill if necessary.
  16. Repeat steps 14 and 15 until steering fluid level is sufficiently full.
  17. Re-install tires/wheel and safely put vehicle back on ground.

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18. With full vehicle weight on the tires / ground steer vehicle left and right to ensure no binding occurs and that steering is functioning properly.
19. Check steering gear and system for leaks.
20. Test drive vehicle to ensure proper steering operation.

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