



Recall Service Bulletin



DATE: April 12, 2017

APPLIES TO: This Recall service bulletin applies to the following model-model year of incomplete chassis equipped with Independent Front Suspensions (IFS) supplied by Reyco Granning and were to be completed as motor homes built between April 20, 2011 and March 1, 2017:

K2 – 2012 through 2018

K3 – 2011 through 2018

K4 – 2017 through 2018

MM – 2011 through 2017

NHTSA/TC Id: **17V-160**

CONDITION: The central steering system ball joints may not have been properly torqued, or secured with **Loctite® 242®**, as installed into the pitman arms.

CORRECTION: Remove, check breakaway torque, and repair if found loose per instructions below.

LABOR ALLOCATION: **Up to 3 hours**

CLASSIFICATION: **V3**

PARTS NEEDED:

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	S-2585-001C	Kit-Service MH IFS Ball Joints

Kit # S-2585-001C Contains:

<u>QTY</u>	<u>Part Number</u>	<u>Description</u>
1	K714259	Reyco Service Kit
1	RSB17-250-003A	Instruction Document

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Recall Service Bulletin



TOOLS NEEDED:

Side Cutter, Vice Grip, Pliers, 3lb hammer
30mm, 1 5/16" and 1 1/8" socket with 1/2" drive
1 1/2" socket with 3/4" drive
1 1/8" end wrench
Hook style pry-bar and small dull chisel
1/2" clicker style torque wrench (90-100 lbf-ft) - Calibrated
1/2" clicker style torque wrench (155-170 lbf-ft) - Calibrated
1/2" clicker style torque wrench (295-315 lbf-ft) - Calibrated
3/4" clicker style torque wrench (500 to 600 lbf-ft) – Calibrated counter clockwise
1/2" and 3/4" Impact Wrench
Jack stands x two (2) 10t - 12t
Steady vice to hold relay rod for application of 500 lbf-ft breakaway torque
Ball joint tools 40mm: Wrench 708116-02 and Clamp 708116-05.
Loctite® 242® thread-locker (*ensure product is not expired*)

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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 Motors USA, Inc. Customer & Product Support Group.

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

Warranty claim invoice to be complete with suspension serial number, VIN number with information of facility that performed the service.

A description of condition found and service performed each side documented.

Any parts replaced/removed, must be returned, using the return material authorization process, for claim payment approval.

If the ball joints are found to be damaged (e.g. torn boots) at any time during the removal or reassembly process, they must be replaced.

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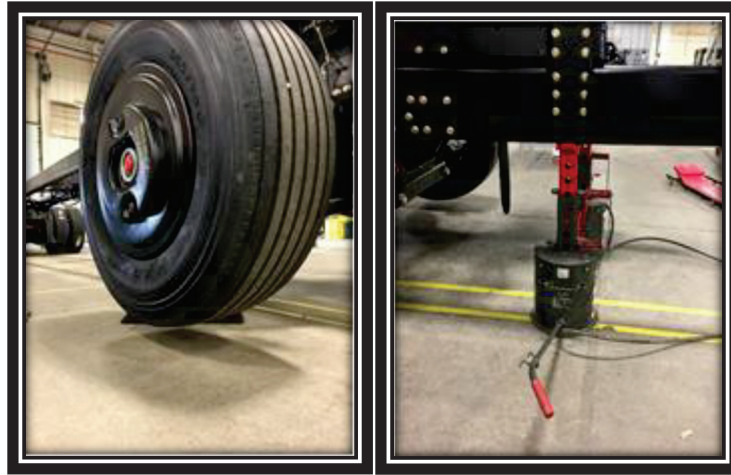


Recall Service Bulletin



STEP-BY-STEP INSTRUCTIONS:

1. Ensure park brake is set and place wheel chocks behind rear wheels.
2. Lift front of vehicle until front wheels are off of the ground. Properly support vehicle with 10t – 12t jack stands.



3. Steer wheels completely to the left.



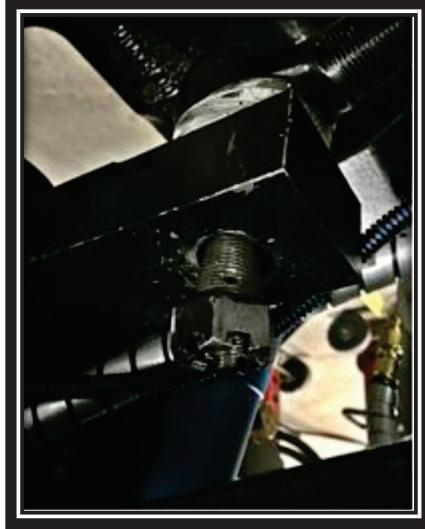
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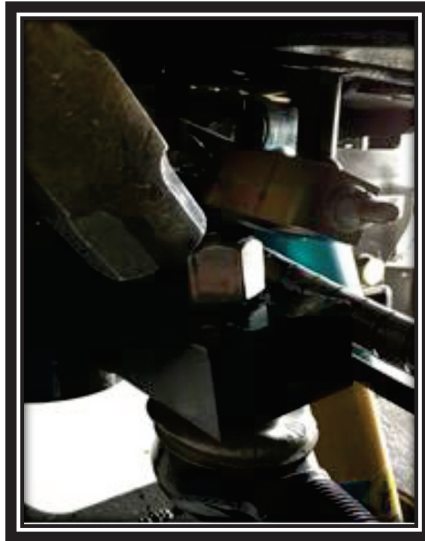
Recall Service Bulletin



4. Beginning on the right side of the vehicle, remove castle nut from tie rod end that is connected to the relay rod.



5. Place sacrificial 7/8"-14 nut on rod end stud and strike with hammer to un-seat tapered connection.



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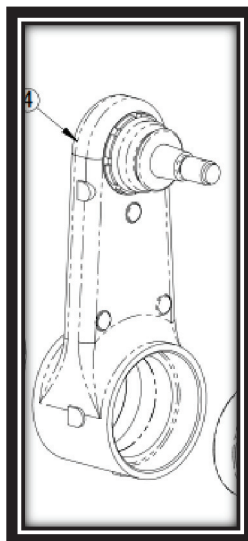


6. Remove tie rod end from relay rod assembly and position tie rod against wheel.



7. The following steps shown pertain to IFS18KS3 and IFS20KS3 (twin gearbox versions). All other units will have an idler arm assembly instead of a slave gear, but the removal of the idler arm equipped units will be similar.

The idler arm assembly is connected via a clevis mount with a 1" bolt/nut, which has to be removed to disconnect the idler arm assembly.



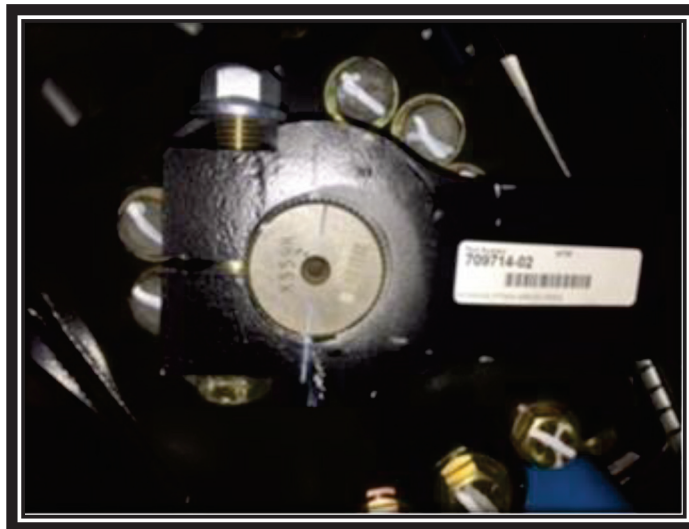
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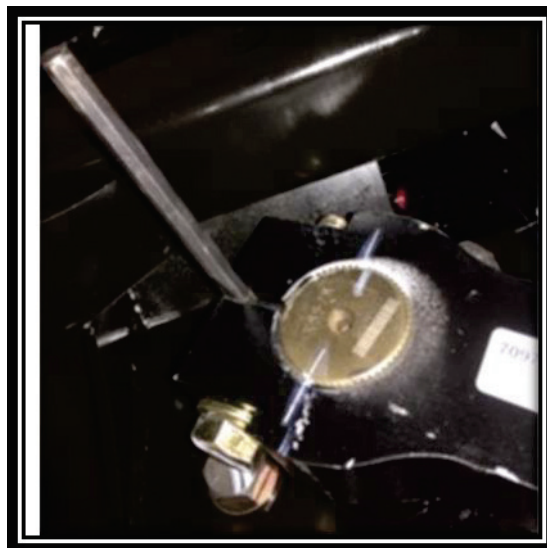
Recall Service Bulletin



8. Mark the pitman arm to steering box output shaft as shown, to ensure correct alignment when re-assembling.



9. Remove pinch bolt nut from right pitman arm (leaving pinch bolt in pitman arm to prevent pitman arm from falling from Sector Shaft.)
10. Using a small chisel, spread pitman arm end.



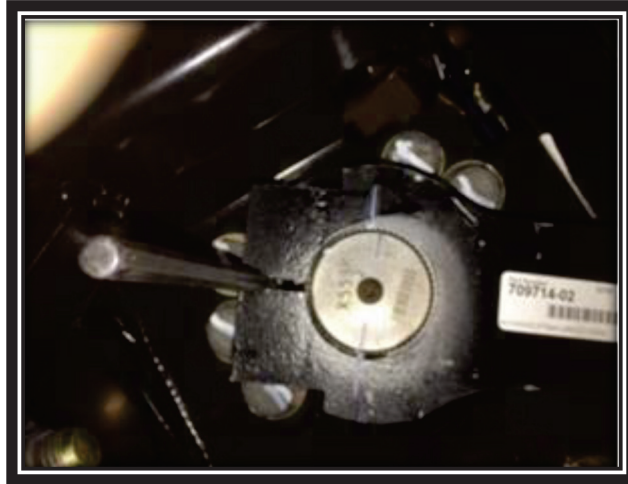
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Recall Service Bulletin



11. Remove pinch bolt from pitman arm.



12. Lower pitman arm and position arm to where it is parallel with the relay rod.



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Recall Service Bulletin



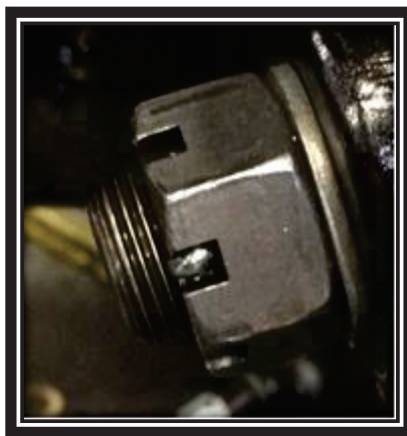
13. Slowly steer wheels completely to the right.



14. Repeat steps 4 – 12.

15. Remove relay rod assembly. (Slide relay rod assembly out towards the left side of the vehicle.)

16. Remove the cotter pin from the ball joint stud.



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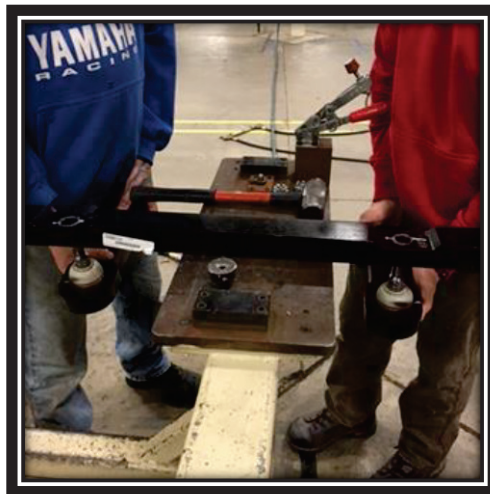
Recall Service Bulletin



17. Remove the castle nut from the ball joint stud, retain for reinstallation. Ensure all washers found under castle nuts are re-installed in their original position.
18. Place sacrificial M20 1.5 nut on ball joint stud. Roll assembly over so sacrificial nut is on bottom resting on a solid surface. Strike relay rod downward with hammer to un-seat tapered connection.



19. Remove ball joints from the relay rod.



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Recall Service Bulletin



20. Place pitman arm (or idler/bell crank) assembly in a vice.



21. Using 40 mm ball joint tool and castle nut, place over ball joint.

USE CAUTION TO NOT TEAR BOOT



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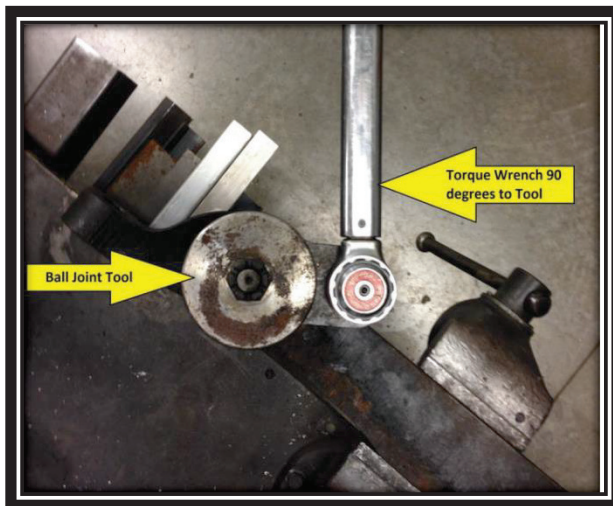
22. For each ball joint, run castle nut down, leaving castle nut slightly loose. **DO NOT RUN DOWN TIGHT**

Note: Tool 708116-05 is used with castle nut to hold tool 708116-02 loosely on the ball joints. Be sure that tooling set up is not binding when loosening, castle nut should come off freely after ball joint is loose.



23. Set torque wrench to 500 lbf-ft. Insert torque wrench in ball joint tool as shown, and apply 500 lbf-ft. of breakaway torque. Torque wrench must be oriented as shown below.

24. If ball joint does not move, begin to reassemble by skipping to Line #34.



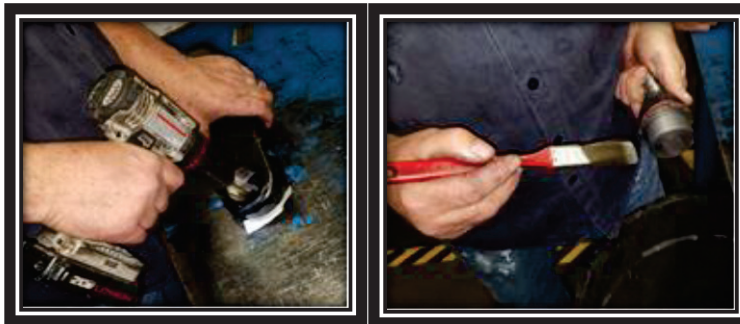
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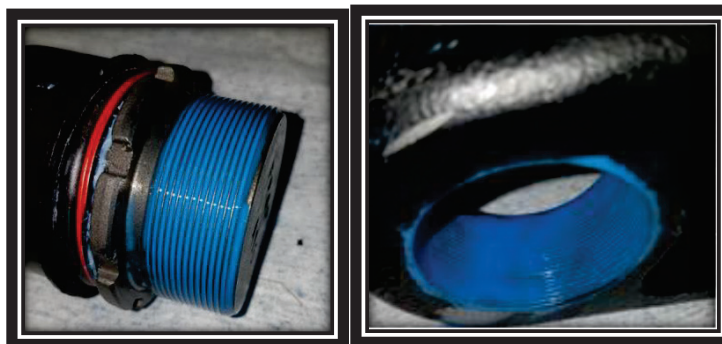


25. If ball joint moves (Breaks loose) before reaching required torque (500 lbf-ft) remove ball joint from pitman arm and clean threads on ball joint and pitman arm using a wire wheel. Clean with denatured alcohol.



26. Ensure threads are clean and dry. **Ensure that the Loctite® 242® is not expired.**

27. Using **Loctite® 242®** apply generously to the external threads of both ball joints and internal threads of the pitman arms. (Ensure that all threads are covered)



28. Install ball joint with **Loctite® 242®** applied into the pitman arm.

29. Screw in by hand until properly seated.

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Recall Service Bulletin



30. Using 50 mm ball joint tool and castle nut placed over ball joint (Use caution to not tear boot) torque the ball joint to 350 lbf-ft.



31. Be sure that tooling set up is not binding when tightening.
32. Castle nut should come off freely after ball joint is torqued.
33. Ensure that the ball joint is fully seated into the pitman arm.
34. Reinstall the relay rod to the front suspension in reverse order to removal using new cotter pins and the following torque specs:
- Tie rod castle nut – 90-100 lbf-ft.**
 - Ball joint castle nut – 155-170 lbf-ft.**
 - Pitman arm attachment bolt – 295-315 lbf-ft.**
 - If applicable the drag link castle nut – 90 - 100 lbf-ft.**
35. When tightening castle nuts ensure specified torque is achieved. Advance the nut to align the castle slot with the thru hole to allow cotter pin to be installed. **DO NOT BACK CASTLE NUTS OFF TO INSTALL COTTER PINS.**

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