



# Spartan Motors Chassis, Inc.

## SERVICE BULLETIN

RSB14-250-006

NHTSA Id: 14V-812

1/20/2015

Transport Canada Id: TC14-579

**SUBJECT:** IFS Ball Joints

**CONDITION:** Ball joints may be loose

**APPLIES TO:** This bulletin applies to Motorhome and Emergency Response Cab Chassis assembled with Reyco® Granning® front suspension with removable ball joint manufactured between November 28, 2012 and October 15, 2013.

**CORRECTION:** Tighten ball joints to required torque

**LABOR ALLOCATION:** 1.0 hrs. for inspection  
3.0 hrs. labor for defect

### **TOOLS REQUIRED:**

#### **1. For Inspection**

- a. Feeler gauge of 0.001 inch
- b. Small punch and hammer

#### **2. If Repair Required**

- a. Pliers, 30 mm sockets, 1/2 inch torque wrench
- b. Ball joint tools 708116-03, 708116-06, and Loctite® 242® Thread locker
- c. 3/4 inch drive torque wrench

**NOTE:** Suspension serial number and VIN must be on invoice, completed with information of facility that performed the service. A description of condition found and service performed each side documented.

### **GENERAL INSTRUCTIONS:**

Please thoroughly review entire work procedure before starting work. If there are questions and/or concerns with steps defined in this procedure, contact Spartan Motors Chassis, Inc. Customer & Product Support Group.

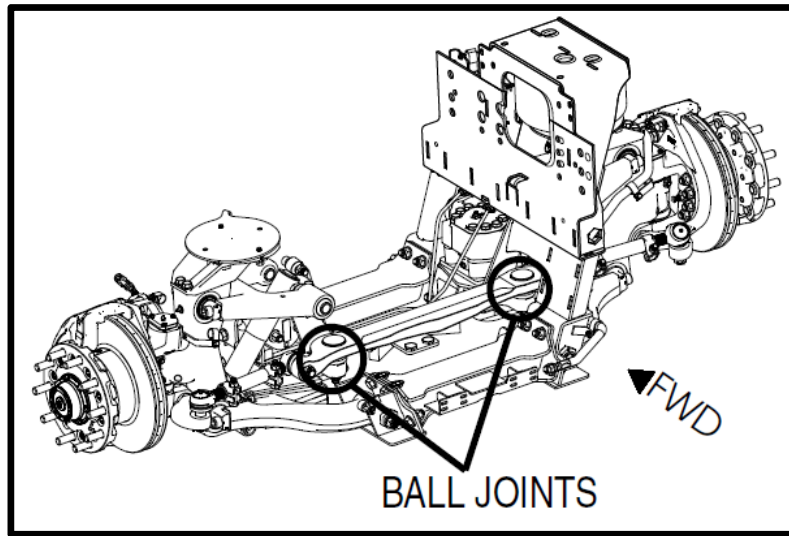
All applicable industry safety standards must be followed when performing work identified in this procedure.

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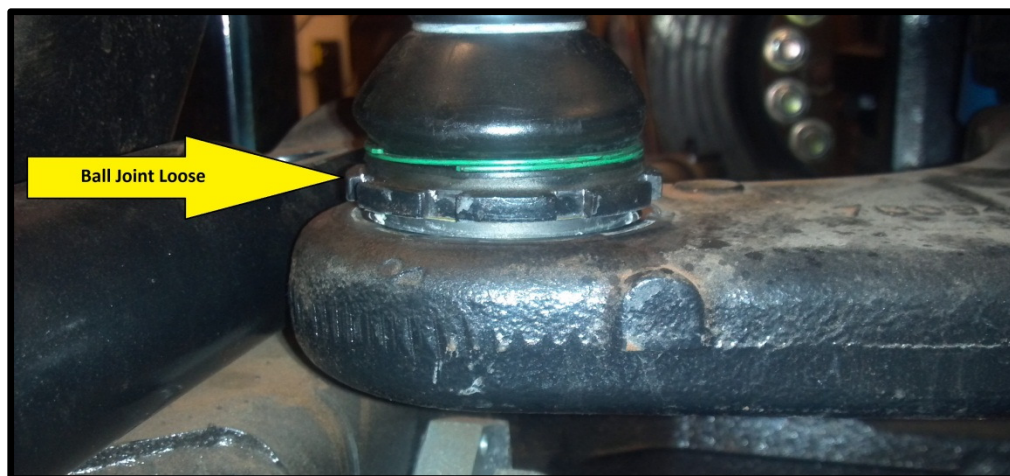
**INSPECTION OF BALL JOINTS INSTRUCTIONS:**

1. Follow normal maintenance and safety procedures to gain access to the pitman arm ball joints. Refer to FIG. 2-1.



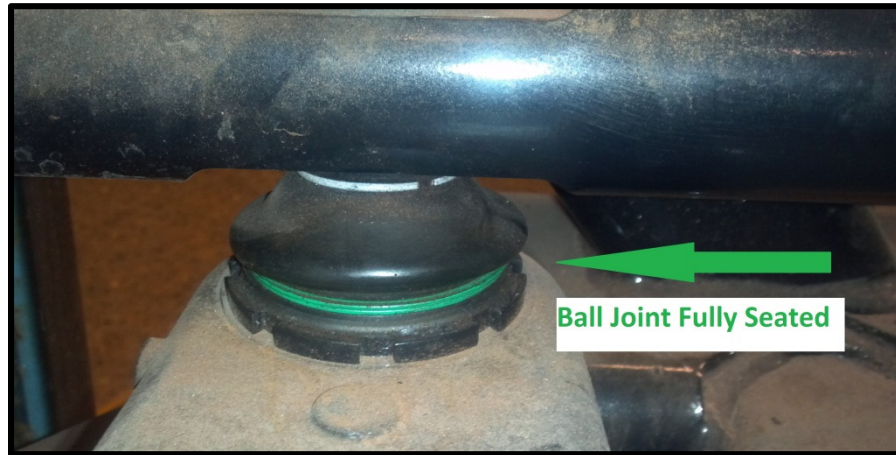
**FIG. 2-1**

2. Visually inspect the ball joints located in pitman arms, the ball joints will be seated in both pitman arms off of the steering gears. The ball joint shall be fully engaged with the notched flange in contact with the surface of the pitman arms. If it is not, please proceed to the repair procedure. Refer to FIG. 2-2 and 3-1 (pictures may not represent suspension you are working on).



**FIG. 2-2**

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**FIG. 3-1**

3. If the ball joint appears to be seated, using a 0.001 inch feeler gauges to check under the notched flange. If the feeler gauge slides under the flange, please proceed to the step by step instructions.
4. With a punch and hammer use moderate force in an effort to tighten the ball joint in place. If it moves proceed to the step by step instructions. If it is tight this will finish the inspection and vehicle can be returned to service.

**STEP-BY-STEP INSTRUCTIONS:**

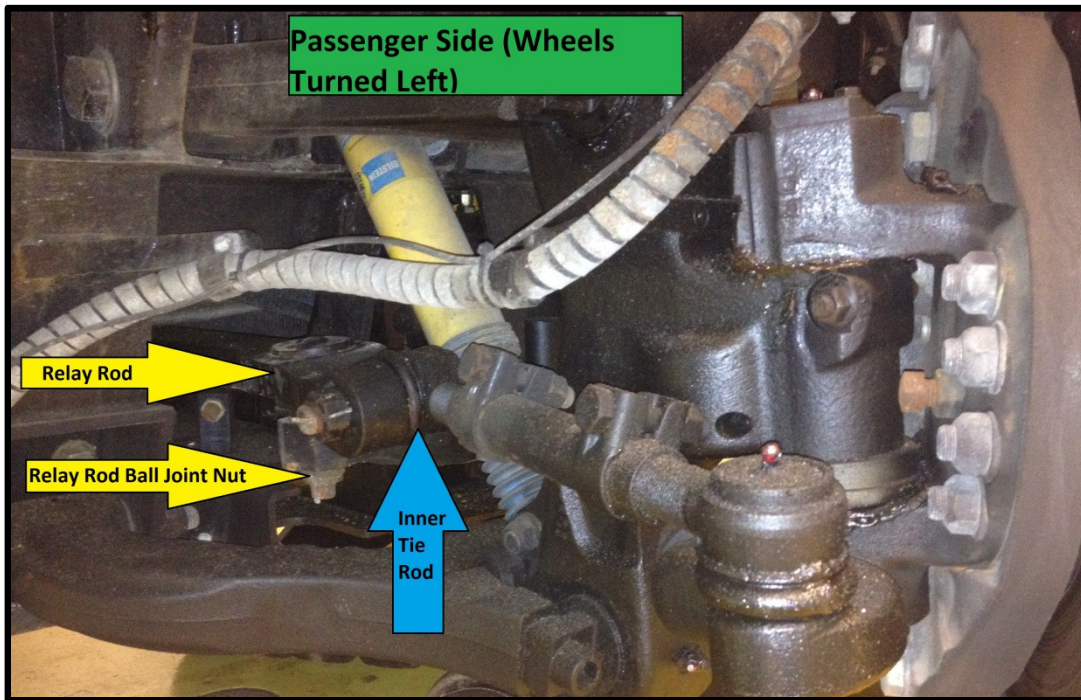
**NOTE:** Below steps are to be used for ball joints not seated or loose.

**NOTE:** Ensure to not damage the sealing boot of the ball joints.

1. If a ball joint is found loose contact Mark Bachman at 765-838-0361 ext. 6 to acquire loaner tools 708116-03, 708116-06, and Loctite® 242® Thread locker. Credit card information required for security on tools.
2. Using industry standards means lift the front of the truck high enough to remove the front tires. Secure the truck and remove the front tires.
3. Turn the steering to full left lock to gain access to the relay rod from the passenger side. Starting on the passenger side remove the following from the relay rod. Refer to FIG. 4-1:
  - Inner tie rod joint
  - Relay rod ball joint from the pitman arm.
  - Pitman arm from steering gear (only needed on the passenger side).

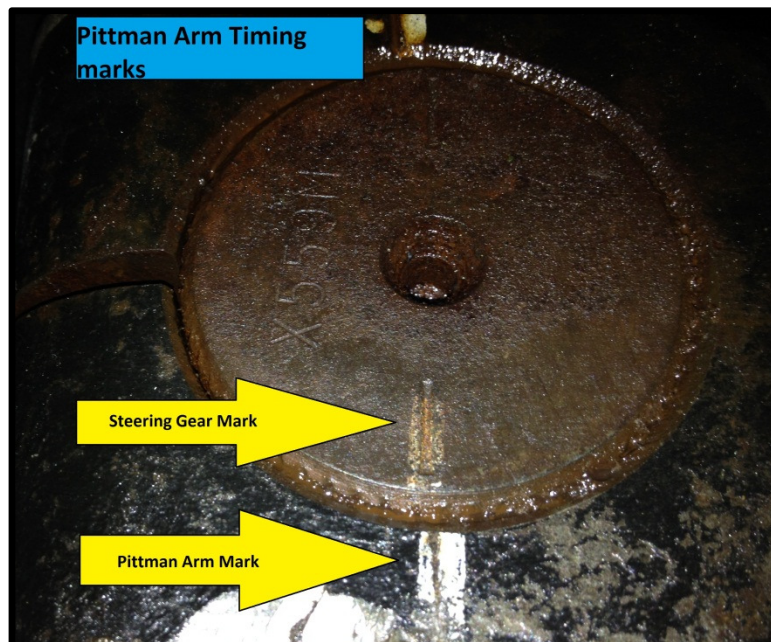
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**FIG. 4-1**

**NOTE:** Mark the pitman arm to gear timing marks for aid in reinstallation. Refer to FIG. 4-2. There are two sets of marks; you will line up the outward set of marks.



**FIG. 4-2**

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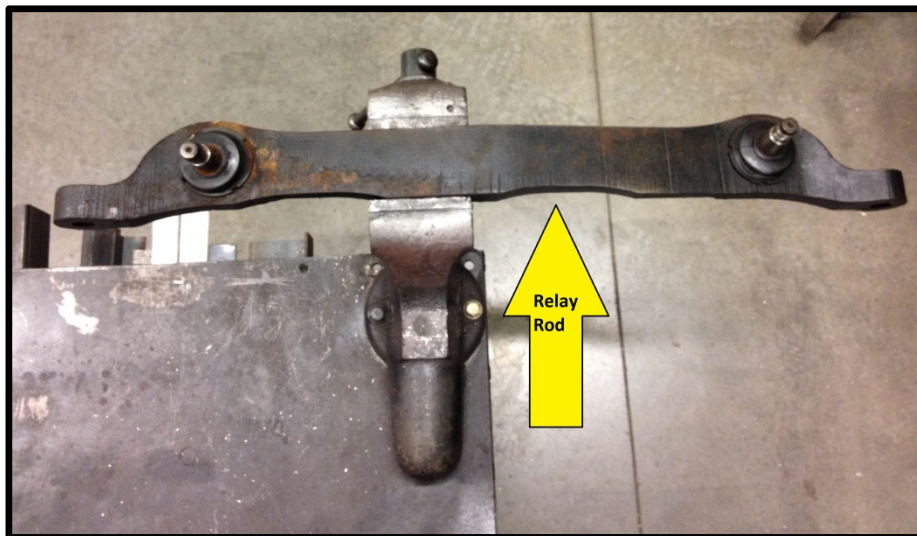
4. Turn the steering wheel full right lock to gain access to the relay rod from the driver's side.

**NOTE: Guide the relay rod through the cradle while steering to the right.**

Remove the following from the driver's side end of the relay rod:

- Inner tie rod joint
- Relay rod ball joint from the pitman arm

5. Remove the relay rod from the cradle and secure in a vise for repair. Refer to FIG. 5-1.



**FIG. 5-1**

6. Back the ball joints out of the relay rod and clean the threads. Apply Loctite 242 to ball joint threads and thread ball joint back into the relay rod. Set up provided ball joint tool. Refer to FIG. 6-1. Place a torque wrench 90° to ball joint tool and torque to 425 lbs.-ft. Refer to FIG. 6-2.





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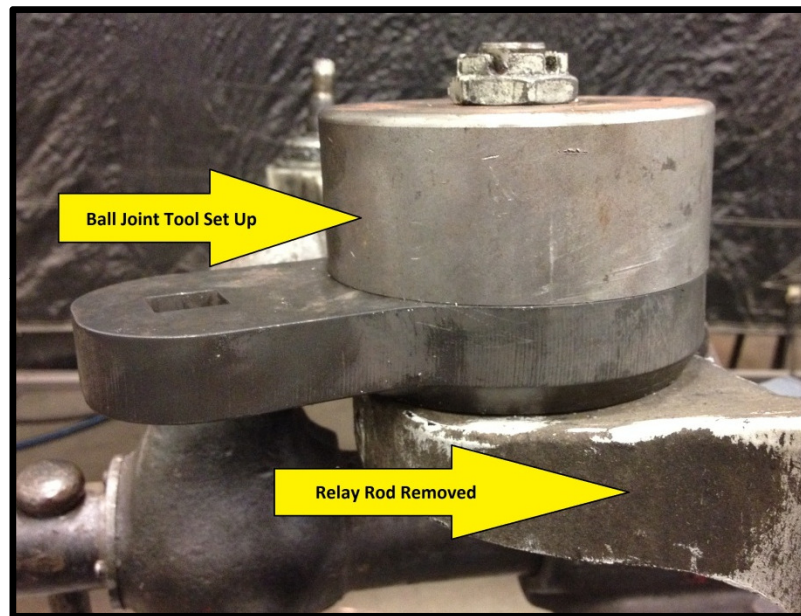
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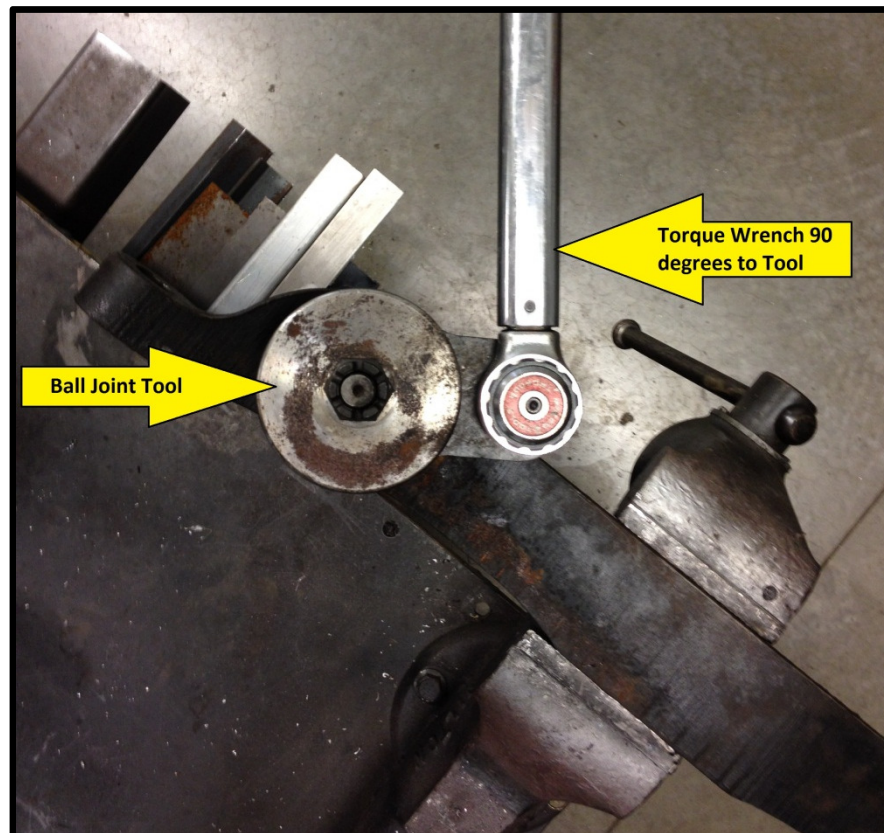
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**FIG. 6-1**



**FIG. 6-2**



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7. 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 lbs.-ft.
  - Ball joint castle – 225-245 lbs.-ft.
  - Pitman arm attachment bolt – 295-315 lbs.-ft.
8. Reinstall front wheels and torque lugs to 450-500 lbs.-ft.

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