

Subject: Important Safety Recall (NHTSA #15E067) for possible ball joint installation defect. Some ball joints may not have been torqued correctly and/or missing Loctite.

Applies To: IFS1000-WF

Date of Manufacture Range: 09/05/2013 through 02/23/2015

Vocation: Motor Home

Labor Time: 1.0 hr for inspection, additional 3.0 hrs. if repair is required.

Purpose: To provide instruction in inspection and possible repair before coach is driven.

Please Read the Entire Service Bulletin Before Proceeding With Any Work. We recommend only technicians with wheel bearing experience perform repair procedure on following page.

Inspect Ball Joint Installation:

1. Due to the low stance of coaches using the leveling control to assist in getting a jack in place maybe helpful. Consult with Tiffin.
Lift and safely support front of coach high enough so that the front tires are off the ground.
2. Steer the front wheels fully to the left to gain access for inspection.
3. Use a 3lb. hammer and punch to try to turn the ball joints clockwise as shown in photo below. Do this to both ball joints each side. Be careful not to damage the sealing boot of the ball joints.





4. If the ball joint will not turn in the casting they are installed correctly and no further service is required.
5. Any ball joint bases that turn in the casting will require repair procedure in following instructions. Please note which ball joints were found loose and read following instructions. Then call Mark Bachman @ 765-838-0361 ext.6 with VIN# for loaner tools and seal/s. Credit card info required for security on the tools.

Exceptional Tools Needed:

1. $\frac{3}{4}$ " torque wrench capable of 600 ft/lbs. and $\frac{1}{2}$ " drive torque wrench
2. $\frac{1}{2}$ " drive impact and $\frac{3}{4}$ " drive impact
3. 1 $\frac{5}{16}$ " socket for lug nuts and tie rod castle nut.
4. Six point spindle sockets 2 $\frac{1}{8}$ ", 2 $\frac{1}{4}$ ", and 2 $\frac{5}{8}$ "
5. 30mm and 1 $\frac{13}{16}$ " sockets for ball joint castle nuts.
6. Hook style pry-bar, pliers, dull chisel or punch, and side cutters
7. Basic SAE socket set, dial indicator with magnetic base, and small bottle jack
8. Gear puller with capacity of 4" X 4"
9. Ball joint loaner tools; call Mark Bachman @ 765-838-0361 ext 6 for specific tooling.

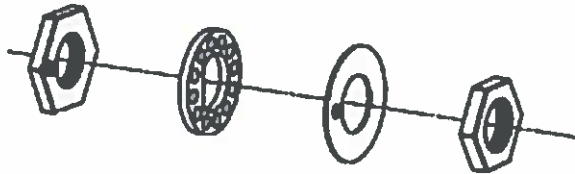
Important Safety Notice:

Failure to safely support the vehicle and follow the procedures in this bulletin can lead to material damage and/or personal injury.

Repair Instructions:

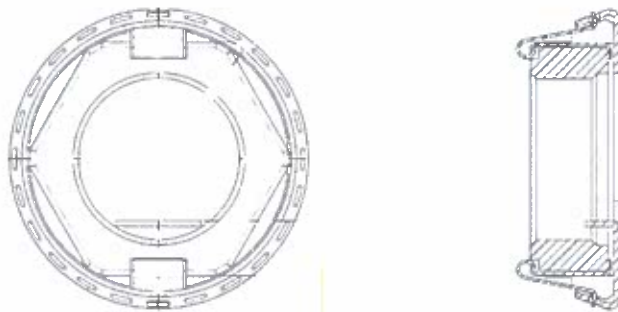
6. Due to the low stance of coaches using the leveling control to assist in getting a jack in place maybe helpful. Consult with Tiffin.
Lift and safely support front of coach high enough so that the front tires are off the ground.
7. Remove the appropriate front tire and wheel then remove brake drum.
With help or mechanical aid the hub and brake assembly can remain on the spindle. If you choose this method disconnect brake hose, ABS cable and proceed to "Removal of Knuckle" on page 5.
8. Place a drain pan under hub and remove hub oil cap and let drain.
9. Remove air brake hose from the air chamber and any ties holding ABS wire to the brake assembly.
10. Remove the cotter pin and castle nut that attaches the tie rod to the knuckle arm.
11. Separate the tie rod end from the knuckle arm taking care not to damage boot or threads.
12. Place a rag between hub and lower brake pad to catch any oil from following process.

Hub removal with standard double nut assembly: (Early production image below)



1. Use dull chisel or punch to flatten the bent locking washer and remove the outer nut (2 1/4"), D washer, and inner nut (2 5/8") and retain and cover for reassembly.
2. Remove outer bearing and hub, set aside and cover to protect from dirt.
3. Wipe excess oil from spindle to prevent dripping on brake pad.

Hub removal with single Axilok nut, Conmet pre-set: (Post Aug. 2013 Production, image below)



1. 2 1/8" socket must be installed fully onto nut to release lock mechanism.

2. Use above methodology and remove spindle nut and outer bearing.
4. Note that in this assembly there is a spacer used in between the two bearings that will stay in hub until inner bearing is removed from hub.
5. Remove hub set aside with previous parts and cover for later reassembly.
6. Wipe excess oil from spindle to prevent dripping on brake shoe

Remove brake assembly:

1. Push ABS sensor inward and out the back side of knuckle. Hang sensor and wire out of the way to prevent damage.
2. Loosen slack anchor and rotate for clearing knuckle pictured below.



3. Remove the seven 5/8" bolts and pull off the brake assembly.

Removal of Knuckle:

Note: In the following procedure the air spring must be fully exhausted by disconnecting the air line from the air spring.

1. Remove the cotter pins and loosen the castle nuts just to end of studs on the ball joints.
2. Place a jack under the lower control arm and jack up a couple inches.
3. Loosen ball joint studs from the upper and lower control arms. The use of a gear puller (see image) can assist with this.



4. Remove castle nuts and jack up lower control arm above top of lower ball joint stud.
5. Swing bottom of knuckle outward then lift off of upper control arm.
6. Using the loaner tools address the ball joint/s that were found loose in the inspection by backing it out of the casting so the notched flange is 3/4" from spot face.
7. Use small brush and compressed air to remove debris from threads and apply Loctite 242.
8. Screw ball joint clockwise to seat flange against casting and use appropriate tool to torque to specification below.
Lower ball joint torque 550 ft/lbs. Upper ball joint torque 350 ft/lbs.

Note: Use formula provided with tools for proper setting on torque wrench.

Reassembly: Be careful not to damage spindle, ball joints, boots, and threads

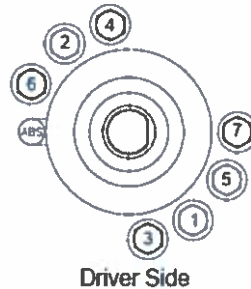
1. Install the knuckle onto upper control arm.
2. Position the lower ball joint stud under lower control arm hole and drop lower control arm onto lower ball joint.
3. Install castle nuts on the studs.
4. With knuckle steered straight ahead use impact to snug castle nuts.
5. Torque lower castle nut to 350 – 360 ft/lbs then advance to align for cotter pin.

6. Torque upper castle nut to 160 – 170 ft/lbs than advance to align for cotter pin.
7. Install the cotter pins and bend over.

Note if Hub and Brake assembly were not removed from spindle re-connect AS cable and proceed to step 4 of page 8

Install brake assembly:

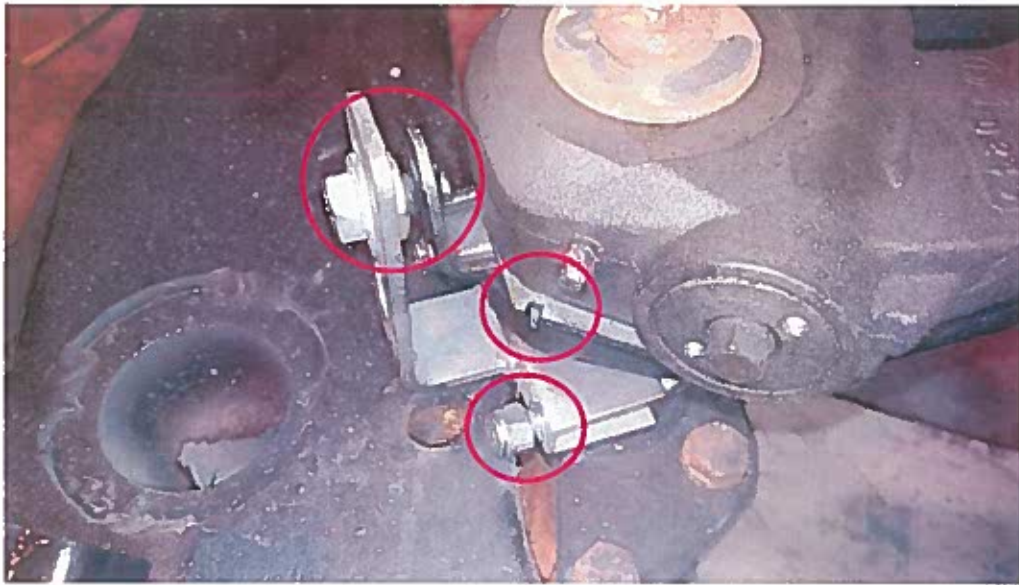
1. Apply Loctite 242 to the 7 bolts for mounting brake assembly.
2. Place brake assembly on knuckle being careful not to damage spindle surfaces.
3. Align with mounting holes and start bolts by hand, snug with impact then torque to 170 – 190 ft/lbs. with sequence shown.



4. Assembly tip in image below, install bolt in this position last by prying spring away for access.



5. Place slack anchor back in correct position shown below with indicator in window and tighten u-bolt nuts.



6. Drive new seal RG# 7977 onto spindle with Stemco head tool 555-5062



7. Insure spindle, bearings and mating hardware are clean.
8. Install large wheel bearing onto spindle.
9. If bearing assembly had spacer between bearings place it on spindle now, if not proceed.
10. Install hub on spindle holding it centered and then install outer bearing on spindle and into hub.

Single Axilok nut application: Reference type in previous removal steps

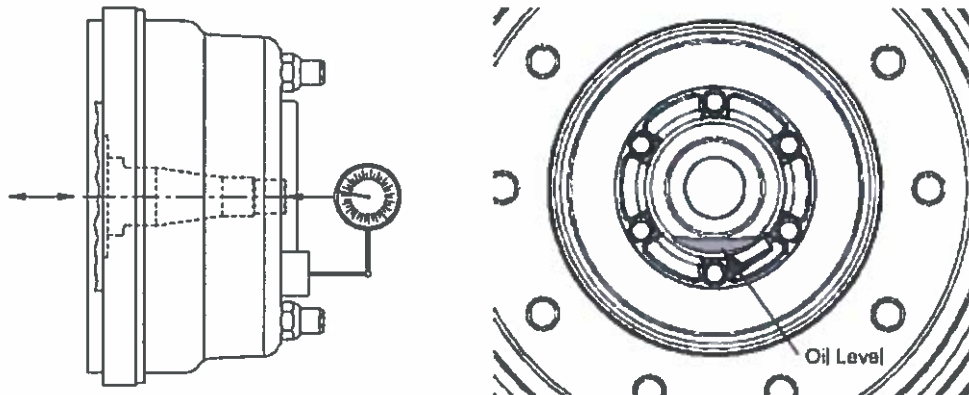
1. Place Axilok nut into 2 1/8" socket and by hand only start nut on spindle.
2. With hand tools torque Axilok nut to 300 ft/lbs. Rotate hub back and forth and repeat the torque. Do this total 3 times to insure seating of assembly.

3. Remove socket and verify locking clip tabs have engaged the adjustment slots in retainer cage.
4. Measure end play between hub and spindle and confirm it is .000 to .006

Standard double nut assembly: Reference type in previous removal steps

1. Start large inner nut by hand with pin outward. Tighten to 180 ft/lbs while rotating hub in both directions. Repeat twice.
2. Loosen nut completely.
3. Then torque nut to 20 ft/lbs.
4. Back off ¼ turn and install the D washer fitting onto the pin of nut.
5. Install the thin washer with protrusion engaging the D washer.
6. Install outer nut and torque to 200 – 300 ft/lbs
7. Check end play with dial indicator. Must be .001 - .004 If not go back to step 4 above and adjust inner nut accordingly. Once correct end play is achieved bend thin washer out over one flat of outer nut to lock in place.

Note bearing end play to be measured as direct movement between spindle and hub as shown in following image best done with drum removed.



Install oil cap and fill:

1. Clean gasket face of hub and cap, install new gasket and cap. Tighten the six cap screws to 20 – 25 ft/lbs.
2. Remove center plug and fill with oil. Proceed while oil settles and come back to this repeatedly until full to line in window. Shown above.
3. Install the ABS sensor driving gently until it contacts the tone ring.
4. Cable tie ABS wire as was originally.
5. Connect tie rod to knuckle arm, torque castle nut to 95 ft/lbs then advance to alignment for cotter pin.
6. Re-connect air brake hose as original.
7. **If air line was removed from air spring or HCV re-connect at this time.**



Recall Service Bulletin TLBJ 0815

Date: 8/18/2015

REV: OR

8. Install brake drum, tire and wheel.
9. Make sure drum and wheel or started onto pilots before tightening.
10. Remove supports and let coach back down on ground.
11. Start coach and let suspension air up to ride height.
12. Torque lug nuts to 450 – 500 ft/lbs.
13. Check and correct oil level in hubs.

**Vehicle now should have front suspension alignment checked for toe prior to any long trips.
This service has no effect on rear axle alignment.**