



Global Electric Motorcars, LLC

A DaimlerChrysler Company

Schedule "A"

INSTRUCTIONS

Product: GEM Electric Motorcars

Models: All

Subject: Instructions to determine tab or riveted bearing.

Effected VIN Range: 007400 Thru. 016485

Effected Date Range: 11/08/99 Thru. 10/26/01

Recall Number: 12A1001

Technical Service Bulletin #: 001A

Estimated Completion Time: .3 Hours

PARTS:

PART NO.	DESCRIPTION	QTY.
0522-00113	BOLT, HEX-HHCS-3/8"-16 X 1.75"	1
0524-00178	WASHER, LOCK INTERNAL STAR	1
0521-00010	NUT, HEX NYLOCK - 3/8"-16 UNC	1

REQUIRED TOOLS:

- | | |
|---------------------------------|--|
| (1) Hydraulic jack | (1) Inspection Mirror |
| (2) Jackstands | (1) Torque wrench |
| (1) 3/8" Ratchet | (1) Standard screwdriver (small) |
| (1) 9/16" wrench | (1) Standard screwdriver (medium to large) |
| (1) 9/16" Socket | (1) Green paint marker |
| (2) Q-tips | (1) Red paint marker |
| (1) Flashlight or Trouble light | |

WARNING!

To prevent personal injury or property damage: Switch the 72-volt Master Disconnect to "OFF", be sure the ignition switch is always in the "OFF" position and that the "KEY" is removed. Then make sure that all moving parts have come to a complete stop before servicing, adjusting, or repairing.

WARNING!

Set the parking brake and place wood blocks (4" X 4" or larger) to the rear surfaces of the rear tires.

The following instructions are for determining the bearing type of the steering gear for GEM vehicles. Once the bearing type is determined, it will then be necessary to either replace the entire steering gear assembly, (Refer to **Schedule "B"**) or put the vehicle back into operation.

The new steering gear assembly replaces previously sold models of GEM cars to current production specifications, which uses riveted bearings.

To determine bearing type, proceed as follows.

IMPORTANT

SERVICE PROCEDURE:

Before any work is completed, first inspect the steering gear assembly and look for either **"WHITE"**, **"GREEN"** or **"YELLOW"** paint markings located on the steering gear assembly (See Fig. # 1 for location). If there are **"WHITE"**, **"GREEN"** or **"YELLOW"** paint markings visible, no further service work is necessary. If **"WHITE"**, **"GREEN"** or **"YELLOW"** paint markings do not exist, proceed to the next step.

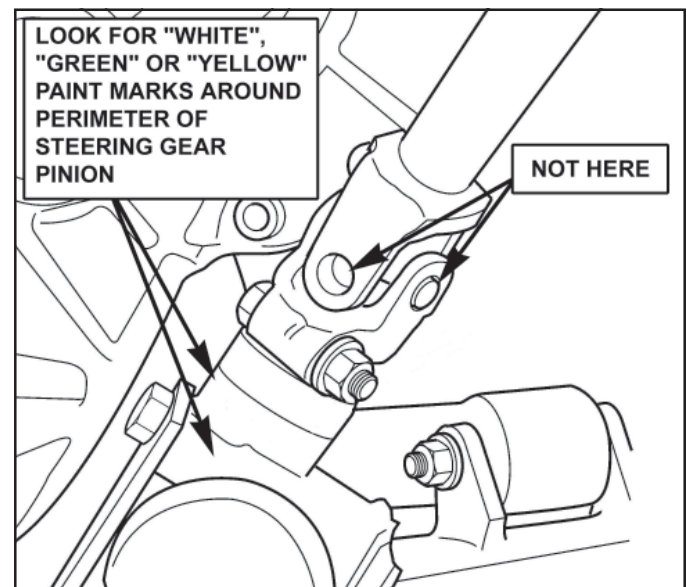


Fig. # 1 Look for **"WHITE"**, **"GREEN"** or **"YELLOW"** paint markings around perimeter of steering gear pinion

DISASSEMBLY:

1. Raise the vehicle at the front end with a hydraulic jack positioned under the A-frame. (See Fig. # 2)



Fig. # 2 Raise vehicle with hydraulic jack.

2. Use Jack-stands positioned at points shown in (Fig # 3) to **safely support** the vehicle.



Fig. # 3 Position jack stands

3. Remove the 3/8" pinch bolt that joins the steering column shaft to the pinion of the steering gear. Discard the lock washer and 3/8" nylock nut, re-use the 3/8" X 1.75" bolt if not damaged. (See Fig. # 4).
4. Have a helper support the steering column shaft by pulling upward with the steering wheel as the steering gear and steering column shaft is gently pried apart.

NOTE: Be careful not to damage the rubber boot when prying steering column shaft free.

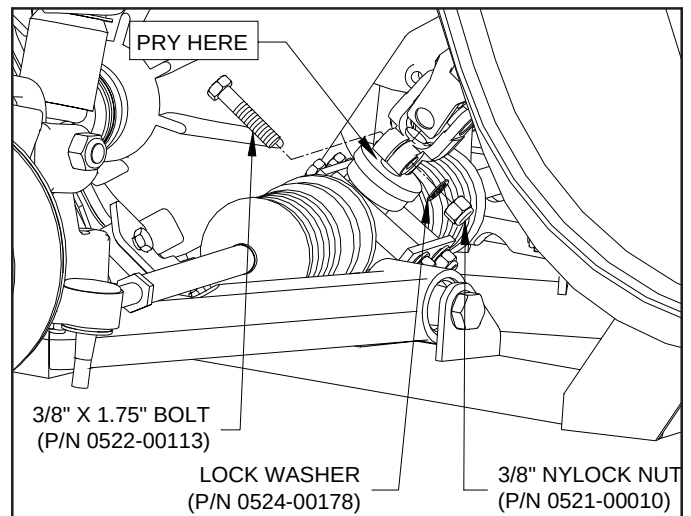


Fig. # 4 Remove pinch bolt

5. Remove the rubber boot from the steering gear assembly. (See Fig. # 5)
6. Use a thin tip standard screwdriver to remove the bearing seal. (See Fig. # 5)

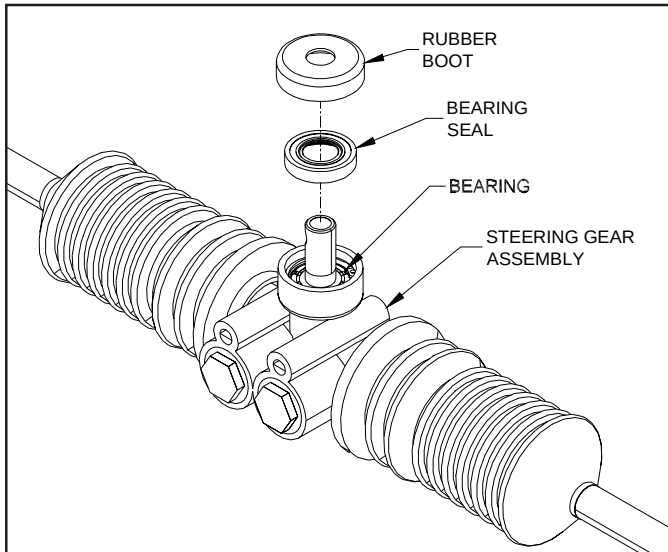


Fig. # 5 Remove rubber boot and bearing seal.

7. Use a flashlight and an inspection mirror to visually inspect the bearing to determine the bearing type. (See Fig. # 6, 6A & 7)

NOTE: It may be necessary to clear some of the grease away from the bearing with a Q-tip to get a clear view.

8. If the bearing is a riveted bearing, then no replacement is necessary. Proceed to step # 1 in the “**ASSEMBLY**” section of these instructions.
9. If the bearing is a tabbed bearing then replacement is necessary. Immediately mark the steering gear assembly with a “**RED**” paint marker as shown in (Fig. # 8). Then proceed to step # 1 in the “**DISASSEMBLY**” section of instruction sheet (**Schedule “B”**).

NOTE: There is no top or bottom to the tabbed bearing, during assembly the tabbed bearing may have been assembled with the tab shown (See Fig. # 6) or not shown (See Fig. # 6A).

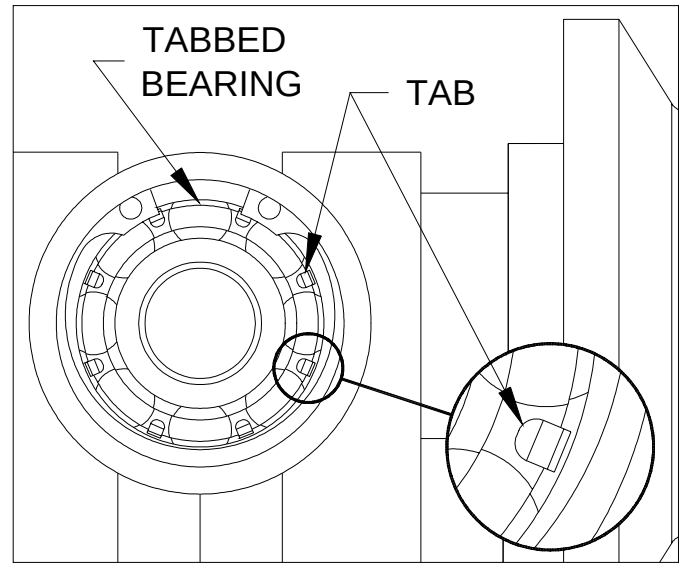


Fig. # 6 Steering gear using a tabbed bearing with tabs shown

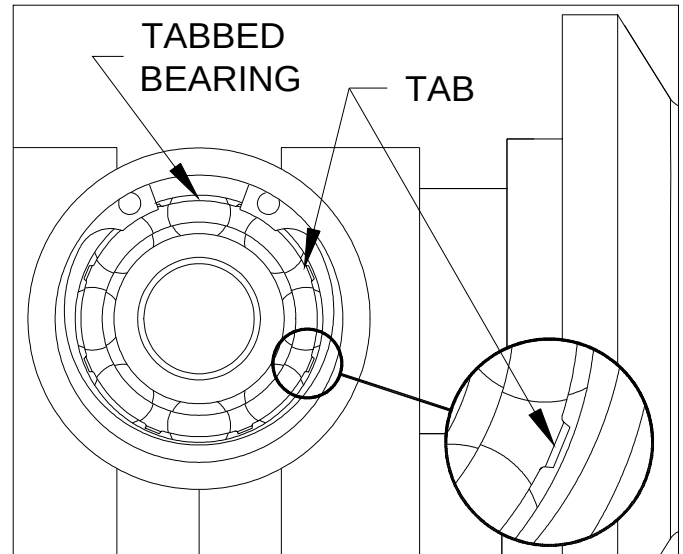


Fig. # 6A Steering gear using a tabbed bearing with the tabs not shown

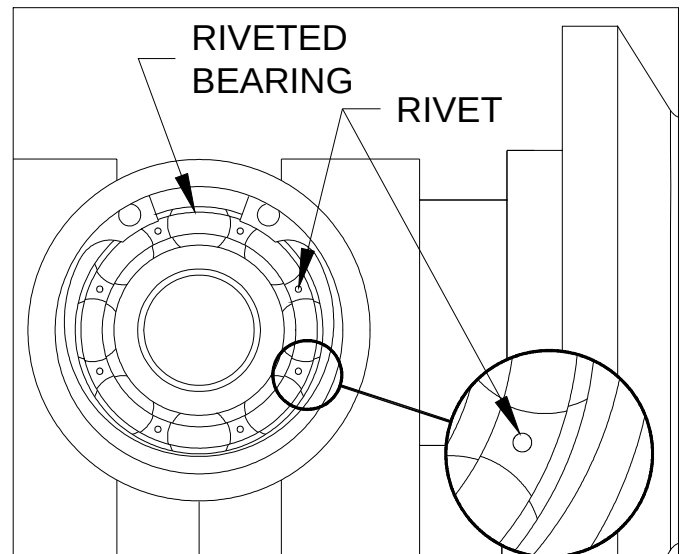


Fig. # 7 Steering gear using a riveted bearing

ASSEMBLY:

1. Replace the bearing seal and rubber boot back onto the steering gear assembly. (See Fig. # 5)
2. Insert lower end of steering column shaft over pinion stud. Install a new 3/8" X 1.75" pinion bolt, lockwasher and 3/8" nylock nut. Tighten the 3/8" pinch bolt to approx. 30 ft.-lbs. (41 N.m)
3. Mark the steering gear assembly with a "**GREEN**" paint marker indicating that the bearing was checked and was a riveted bearing. (See Fig. # 8)

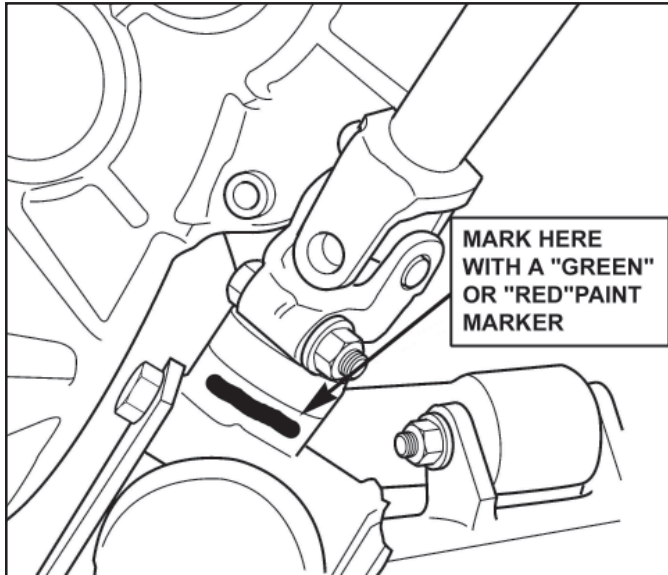


Fig. 8 Mark assembly with **GREEN** or **RED** paint marker

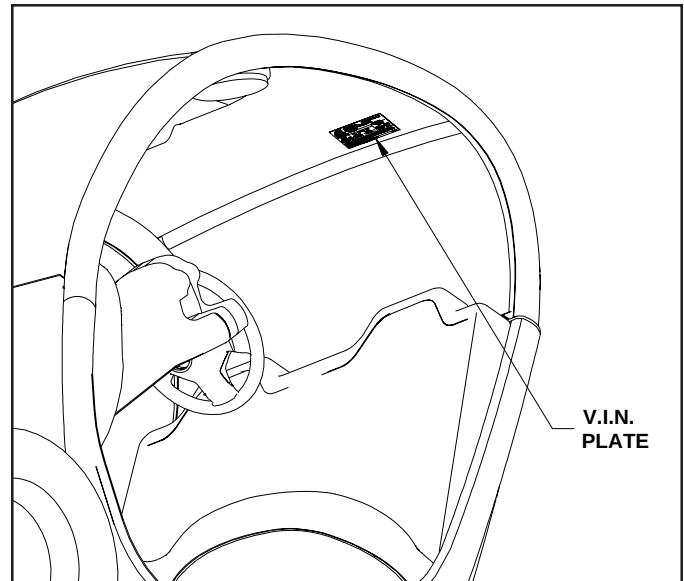


Fig. 9 V.I.N. plate location

		MANUFACTURED BY: U.S. Patent No. Des. 419,107	
		Global Electric Motorcars, LLC.	
Web: www.gemcar.com		DATE OF MFG: 11/5/01	
GVWR: 953KG (2,100 LBS)		COLD INFLATION PRESSURE	
GAWR	TIRE - DIMENSION - RIM		
Front 495KG (1,023 LBS)	165/70R-12 T12x4J	KPA/PSI	SGL/DUAL
Rear 495KG (1,077 LBS)	165/70R-12 T12x4J	207KPA (30PSI)	SINGLE
		207KPA (30PSI)	SINGLE
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS (FMVSS) IN EFFECT ON THE DATE OF MANUFACTURE SHOWN A			
V.I.N. XXXXXXXXXXXXXXXX XXXX			
TYPE OF VEHICLE:		U.S. VIN	

LAST SIX NUMBERS
OF V.I.N.

Fig. # 10 V.I.N. use last six numbers

COMPLETION REPORTING AND REIMBURSEMENT

Claims for vehicles which have been serviced must complete the Recall Report (**Schedule "C"** for Dealers or **Schedule "D"** for Field Technicians). Use (Fig. # 9 & 10) to locate the V.I.N. plate.

<u>LABOR DESCRIPTION</u>	<u>LABOR OPERATION NUMBER</u>	<u>TIME ALLOWANCE</u>
Determining bearing type	STR-01-300	0.3 Hours

ADDITIONAL INFORMATION

If you have any questions or need assistance in completing this action, please contact GEM Technical Support at 866.764.0616



Global Electric Motorcars, LLC

A DaimlerChrysler Company

Toll Free: 866.764.0616

Fax: 701.446.0105

e-mail: service@gemcar.com

Web Site: www.gemcar.com