

<b>STANDARD OPERATING PROCEDURES</b>			
<b>TIE ROD AND BALL JOINT SEPARATION</b>			
Supersedes Policy Dated		Revision Date	<b>5/07/18</b>

To: All Channels

From: Service Ops

Re Policy: **Tie Rod and Ball Joint separation**

**Purpose:** This document is intended to communicate the 4 Wheel Parts policy regarding safe work practices while performing Tie Rod and Ball Joint separation.

**Scope:** We will explain the correct techniques, tools and procedures to follow while performing vehicle front end repairs.

**Definitions:** For purposes of this document, tie rod and ball joint will be defined as a “mechanical” device that secures the steering and pivot axis to the vehicle chassis. Examples of tie rod and ball joint are pictured below.



**Ball Joint**



**Tie Rod**

**References:** Mitchell 1 and ALLDATA

**Requirements:** Mechanics must be trained on safe work practices before performing repairs and or installation of aftermarket suspension kits and components.

**Required PPE:** Work uniform (includes long pants), safety glasses with side shields, cut/abrasion resistant gloves, safety- toe leather boots

Please review the necessary tools and procedures to perform the separation of vehicle tie rods and ball joints from the vehicle chassis:

1. All PPE “Personal Protective Equipment” must be worn to prevent injury to employee.
2. Vehicle needs to be safely racked on the automotive hoist and supported by approved “pole jacks” located at both the front and rear of the vehicle.
3. Tire and wheel must be removed from vehicle prior to start of the procedure.

**Only use the correct tools for the job that are in good working order.**

- I. Never use a tool(s) that are compromised or damaged.
- II. Only use tools that have been purchased from a reputable supplier and are in good working order.



**Procedures:** There are several ways the tie rods and ball joints can be separated from the chassis.

- I. The first step is to remove any cotter pins that may be keeping the nut from coming loose.
- II. Loosen retaining nut for area being worked on but do not remove completely. (leave approximately 4 threads on the nut)
  - a. This will keep the chassis component from falling down causing injury to the employee.

**Tools and method**

**The safest way to separate the rod end is to use a tie rod removal tool listed below when applicable.**

**Ball joint separator**

- I. Before separating ball joints make sure A-arm and/or knuckle is supported by a jack stand.
- II. Loosen nut but do not fully remove.
- III. Attach tool as shown below.
- IV. Tighten adjuster until tie rod is loose.
- V. Remove tool, remove nut and pull tie rod away from chassis.



**Pickle fork method**

- I. Before separating ball joints make sure A-arm and or knuckle is supported by a jack stand.
- II. Loosen nut but do not remove.
- III. Slide forked end of the tool between grease boot and chassis.
- IV. Keep supporting hand clear of striking contact point.
- V. Sharply strike the end of the tool until rod end separates.
- VI. Remove tool and nut and separate from chassis.



### Hammer to Chassis method

- I. Before separating ball joints make sure A-arm and or knuckle is supported by a jack stand.
- II. Loosen nut but do not remove.
- III. Keep hands away from area being struck
- IV. With both hands on the hammer handle, sharply strike the side of the spindle, pitman arm or knuckle until loose.
- V. Remove nut and separate from chassis.



**Responsibilities:** Failure to follow any/or all safety guidelines listed above will result in disciplinary actions up to and including termination. Discipline will be applied to all who fail to follow guidelines (salesperson, technician, service manager and/or retail manager)