



INSTALLATION INSTRUCTIONS

FORM NUMBER
4500

The steering knuckle must be replaced in any and all cases of broken, bent, or loose ball joint studs in knuckle.

 **CAUTION:** Proper service and repair procedures are essential for safe and reliable installation of chassis parts, and require experience and tools specially designed for the purpose. These parts **MUST** be installed by a qualified mechanic in accordance with the vehicle's **SERVICE MANUAL**, otherwise an unsafe vehicle and/or personal injury could result.


 **WARNING:** Before attempting to remove the stud from the upper control arm, make sure the stud of the old ball joint was firmly seated in the tapered hole of the upper control arm. If the ball joint stud was loose in the upper control arm, or if any out-of-roundness, deformation, or damage is observed, the **UPPER CONTROL ARM MUST BE REPLACED**. Failure to replace a damaged or worn upper control arm may cause loss of steering ability since the ball joint **STUD MAY BREAK** and cause the wheel to separate from the vehicle.

1. Raise and support the vehicle under the frame and remove wheel and tire assembly.
2. Remove shock absorber, disconnect drive shaft on 4 WD vehicle, and disconnect ABS speed sensor and wire harness clamp from steering knuckle.
3. Remove brake caliper and disc.
Secure components to prevent brake

hose and the wheel sensor cable damage. Do not apply tension to brake hose or to the wheel sensor cable.


4. Disconnect lower ball joint from steering knuckle by removing 4 bolts. Using a suitable tool, separate the stud from the upper control arm tapered hole (**never strike upper control arm with a hammer**).

5. Remove steering knuckle.

 **WARNING:** Be careful not to damage the oil seal and drive shaft boot.

6. Secure steering knuckle assembly in a bench vise. Remove the wire and boot. Remove the snap ring.
7. Using appropriate press tool press out the upper ball joint. Discard the old ball joint.

8. Inspect ball joint contact area of the steering knuckle and make sure it is clean and free of cracks.

 **WARNING:** If any cracks are found, **STEERING KNUCKLE MUST BE REPLACED**. Failure to replace a cracked or damaged steering knuckle may cause loss of steering ability because the **STEERING KNUCKLE MAY BREAK** and cause the wheel to separate from the vehicle.

9. Clean the upper control arm tapered hole. Insert new ball joint stud through the upper control arm tapered hole by hand and check fit of the stud taper to the arm. Stud should seat firmly without any rocking. Only the threads of the stud should extend through the arm. If these parts do not meet these requirements either the upper control arm is worn and needs replacement or incorrect parts are being used.

10. Position new upper ball joint against the steering knuckle and press in squarely until ball joint flange is firmly seated against knuckle. **DO NOT** exert pressing force on ball joint cover plate. Use T40192 C Clamp Press or equivalent to press ball joint into knuckle. **NEVER USE A HAMMER!**

11. Install new snap ring supplied using external snap ring pliers. Slide snap ring over stud end of ball joint until it seats into groove on housing. Install dust boot on ball joint housing. Make sure the words "MOUNT INBOARD" on dust boot positioned directly away from wheel towards engine.

12. Reinstall steering knuckle on the vehicle. Reassemble all the previously removed components. Tighten 4 bolts of lower ball joint to steering knuckle.

13. Thoroughly clean the tapered hole of the upper control arm before assembly of the stud with the arm. Insert the stud of the new ball joint through the tapered hole of the knuckle and install the new slotted nut supplied.

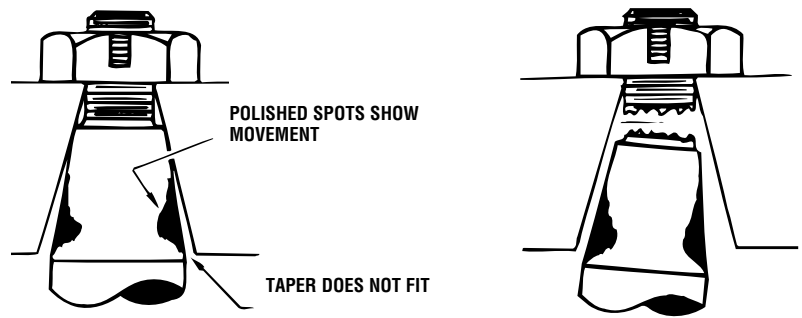
14. Torque the slotted nut to 80 ft-lb. (105 Nm). Continue to tighten the slotted nut to the next available slot.
Never back off the slotted nut to achieve alignment with the hole in the stud. Install and spread the cotter pin.
15. If grease hole in the ball joint and grease fitting are provided, install the grease fitting into the ball joint and lubricate with a good grade of chassis grease. Reinstall the speed sensor on the knuckle. On 4 WD vehicles install drive shaft and tighten nut to 174 ft-lb. (235 Nm). Continue to tighten the slotted nut to next available slot. Install and spread cotter pin. Install the wheel and torque to O.E. specifications. Lower the vehicle to the floor.
16. Align the front end of the vehicle to specifications. A check of the wheel balance is recommended.

NOTE: The parts in this kit are designed to replace the worn or nonfunctioning original equipment parts in the vehicle as produced by the car factory. These parts are not designed for installation on vehicles where the suspension and/or steering systems have been modified for racing, competition, or any other purpose.

SPECIAL NOTICE

THE STEERING KNUCKLE MUST BE REPLACED IN ANY AND ALL CASES OF BALL JOINT STUD BREAKAGE.

THE STEERING KNUCKLE MUST BE REPLACED IF ANY TEST INDICATES AN "OUT-OF-ROUND" OR "FRETTED" TAPER.



NOTE: THIS KIT MAY CONTAIN SELF TAPPING GREASE FITTING(S) FOR THREADED OR NON-THREADED HOLES.