

## Inner Tie Rod End Replacement

Document Number	Model	Serial Number Range	Part Number
12-80010	520Y / 520M	All Units	AT-1512

### ⚠ WARNING

Before making repairs or adjustments set the parking brake, turn off the engine, and remove the ignition key.  
Always disconnect the negative battery cable from the battery when working with electrical components. Always work in a manner that does not put safety at risk!

### ⚠ WARNING

Safety glasses must be worn during installation. Ear (hearing) protection must be worn when using air or power tools.

**Installation Notes:** Right and left hand orientation referred to in these instructions is determined as if facing forward from the operator station.

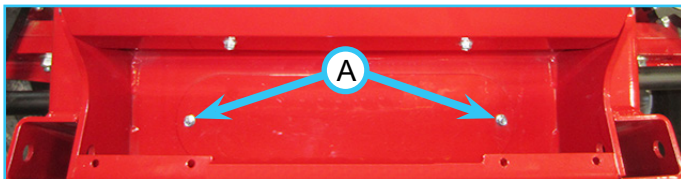
**Installation Time (estimated)** 1 hour

**Tools Required:** 1-1/2" wrench, 1-1/16" wrench, 3/4" wrench, 3/4" socket, Ratchet, Torque Wrench, Hammer, Tie Rod Puller

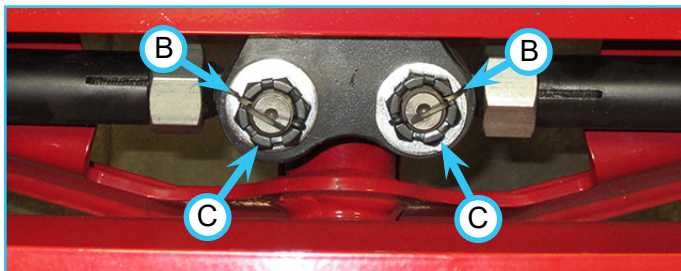
### ⚠ WARNING

Always set the parking brake, shut off the tractors engine, remove the ignition key, and ensure all moving parts have come to a complete stop before inspecting components, or attempting any repair or adjustment.

1. Park the tractor on a level surface.
2. Engage the parking brake and shut off the engine.
3. Remove the key from the ignition switch.
4. Remove the inside tool box cover by removing the two 3/8 bolts and washers (A) secured in place with two 3/8" flange nuts.

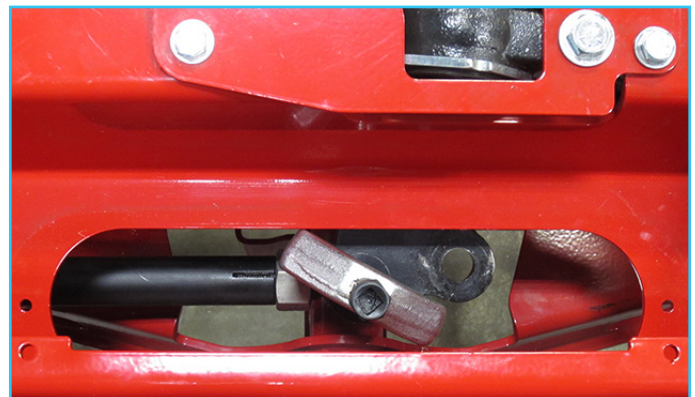


5. Remove and discard the cotter pin (B).



6. Remove the castle nut (C).

7. Push the tie rod end and tie rod link down to remove the tie rod from the steering spindle. It may be necessary to use a tie rod tool to remove the tie rod from the steering spindle as shown below.



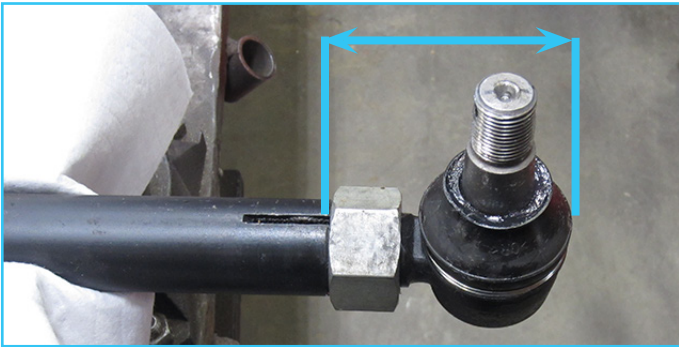
8. Remove the outer tie rod end from the outer steering spindle in accordance with the Outer Tie Rod End Replacement procedure (Document # 12-80009 available at [www.tilmor.com](http://www.tilmor.com)).

### ⚠ CAUTION

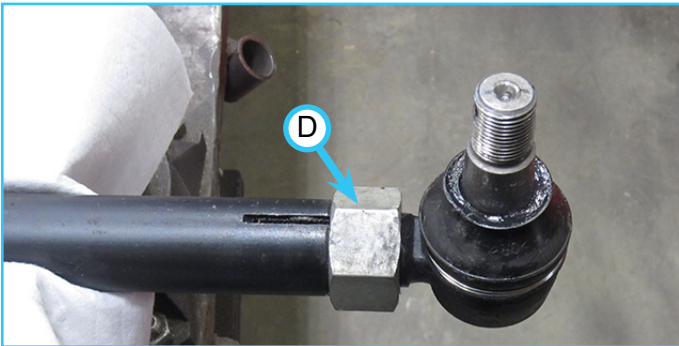
Use caution when securing the tie rod link in a bench vice. Over tightening of the bench vise could cause damage to the tie rod link.

9. Secure the rod link in a bench vice using care to not damage the tie rod link.

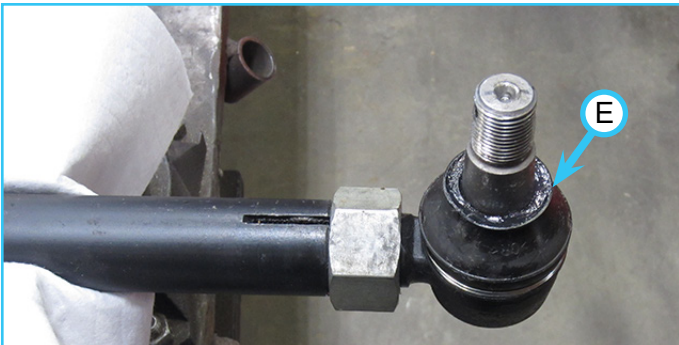
10. Measure and record the length of the tie rod end to the end of tie rod link.



11. Loosen the jam nut (D).



12. Rotate the tie rod end (E) counter clockwise to remove it from the tie rod link.



13. Install the jam nut onto the tie rod end.

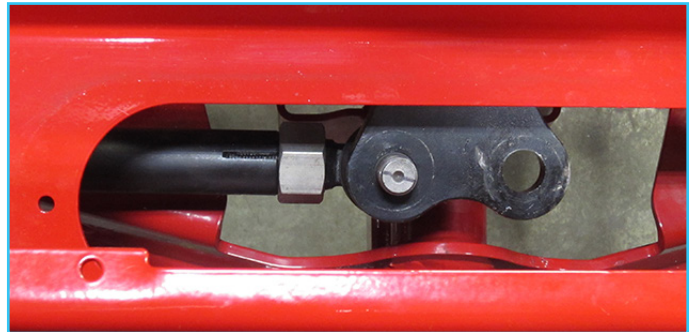
14. Thread the new tie rod into the tie rod link. The length of the tie rod end to the tie rod link should match the length recorded in step 10 of this procedure,

15. Tighten the jam nut against the tie rod end link.

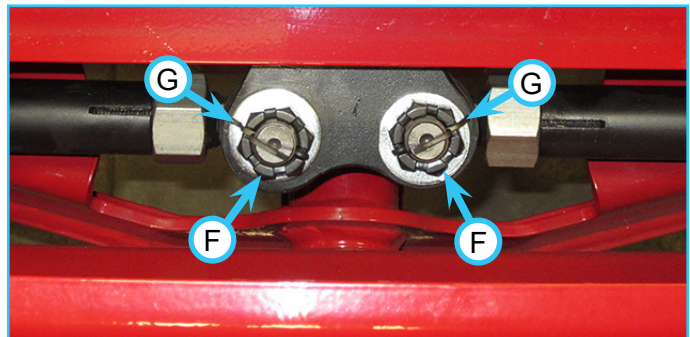
16. Position the tie rod link in the tractor. Aligning the tie rod ends with the inner and outer steering spindles.

17. Install the outer tie rod in accordance with the Outer Tie Rod End Replacement procedure (Document # 12-80009 available at [www.tilmor.com](http://www.tilmor.com)).

18. Position the inner tie rod end in the steering spindle as shown below.



19. Install the castle nut (F) onto the tie rod end. Tighten the castle nut down and then back off the castle nut one flat.



20. Install the cotter pint (G) to hold the castle nut in place.

21. Grease the inner and outer tie rod ends.