

EPS LH DRIVE KIT



P/N 2881862

APPLICATION

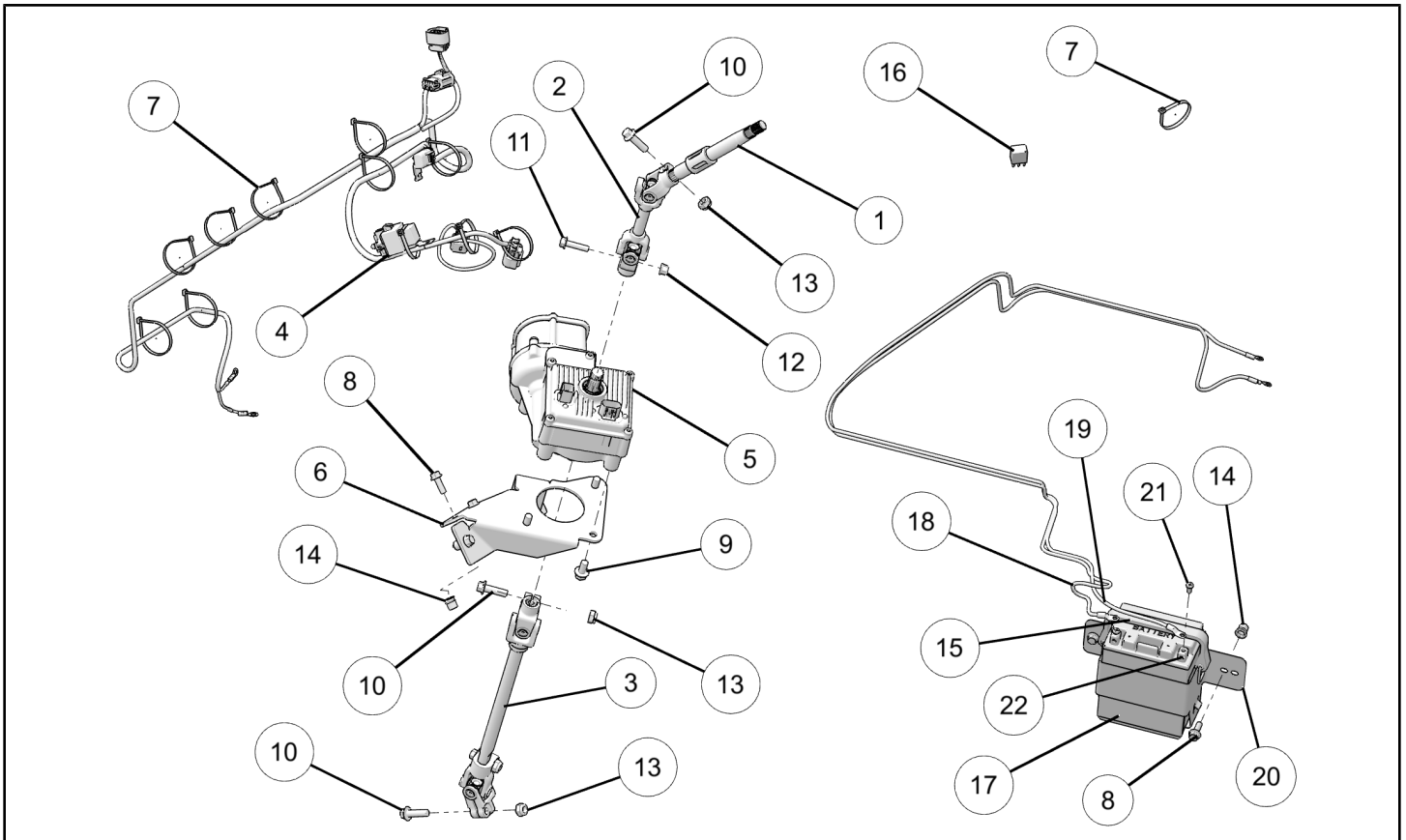
E2, E4, E6, and eL XD

BEFORE YOU BEGIN

Read these instructions and check to be sure all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

KIT CONTENTS

This Kit includes:



REF	QTY	PART DESCRIPTION	PART NUMBER
1	1	Upper Steering Shaft	1824329
2	1	Middle Steering Shaft	1824330
3	1	Lower Steering Shaft	1824483
4	1	Harness Assembly	2413353
5	1	Power Steering Assembly	2413377
6	1	Steering Bracket	5261021
7	12	Panduit Strap, 11"	7080492
8	6	Screw, Hex Flange - M8 X 1.25 X 25	7518514

REF	QTY	PART DESCRIPTION	PART NUMBER
9	3	Screw, Hex Flange - M8 X 1.25 X 20	7518558
10	3	Screw, Hex Flange - M10 X 1.50 X 35	7518644
11	1	Screw, Hex Flange - M8 X 1.25 X 35	7519052
12	1	Nut, Flange - M8 X 1.25	7547332
13	3	Nut, Hex - M10 X 1.5	7547385
14	6	Rivnut - M8 X 1.25	7547788
15	1	Battery Strap Assembly	2635371
16	1	Sealed Relay - SPDT, Series 301	4011284
17	1	Battery - 12V	4014770
18	1	EPS Cabel, Positive	4016543
19	1	EPS Cabel, Negative	4016544
20	1	Battery Hold Bracket	5261942
21	2	LPS Battery, Screw - M6 X 1 X 12	7520056
22	2	LPS Battery, Nut - M6 X 1	7547732
	1	Instructions	9926979

TOOLS REQUIRED

- Side Cutter
- Phillips Screw Driver
- Flat Head Screw Driver
- 13mm Socket
- 10mm Socket
- Ratchet
- 5mm Hex Socket
- 4mm Hex Socket
- 15mm Socket
- 17mm Wrench
- 10mm Wrench
- Hammer or Air Hammer
- 1/2" Socket
- 15/16" Socket
- Extension
- Steel Punch
- T25 Torx Bit
- Bit Driver
- #3 Phillips Screw Driver
- Riv Nut Gun
- Vernier Caliper

IMPORTANT

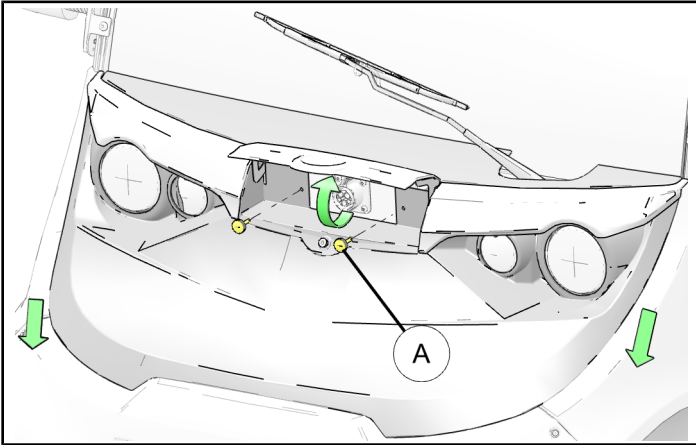
Your EPS LH DRIVE KIT is exclusively designed for your vehicle. Please read the installation instructions thoroughly before beginning. Installation is easier if the vehicle is clean and free of debris. For your safety, and to ensure a satisfactory installation, perform all installation steps correctly in the sequence shown.

ASSEMBLY TIME

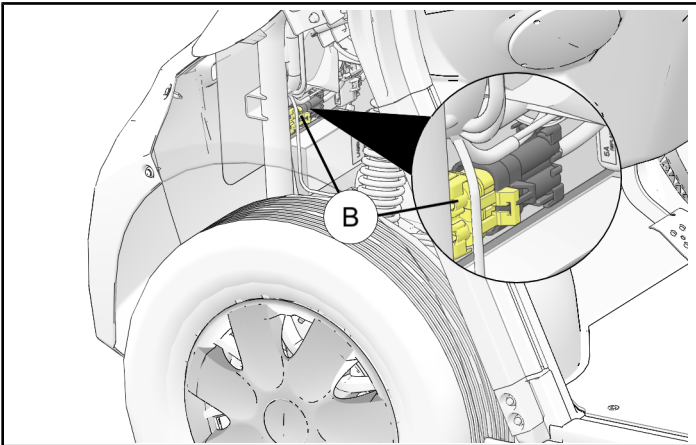
Approximately 120 minutes

INSTALLATION INSTRUCTIONS

1. Place vehicle in "PARK". Turn key to "OFF" position and remove from vehicle.
2. Flip open charge port door and remove two thumb screws (A). Pull off hood in direction of arrow (parallel to ground).



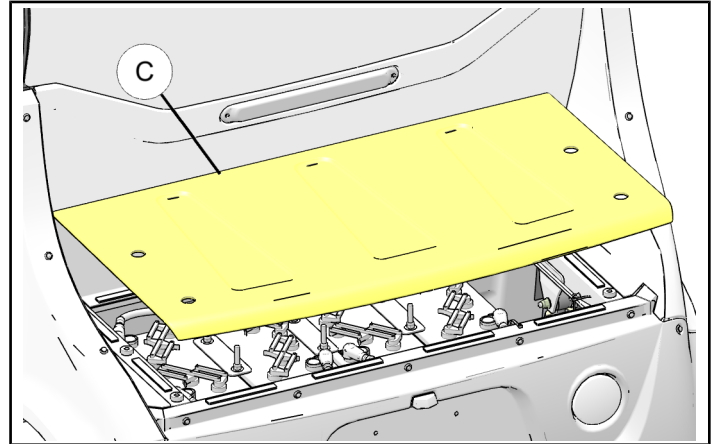
3. Disconnect the front vehicle main connector (B).



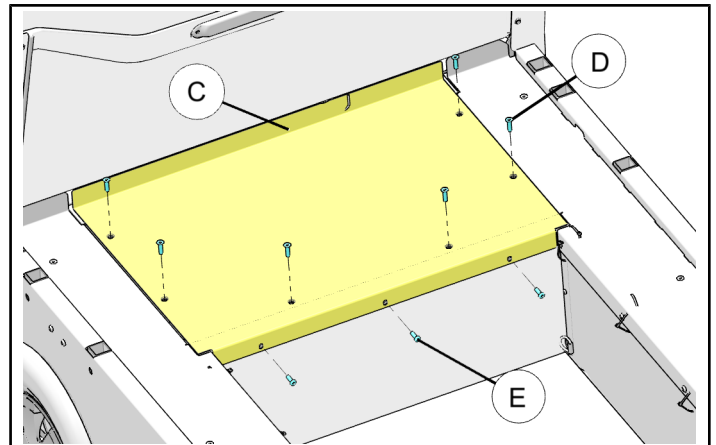
4. Battery access cover removal.
 - a. **For E2, E4, and E6:** Remove rear battery access cover (C).

NOTE

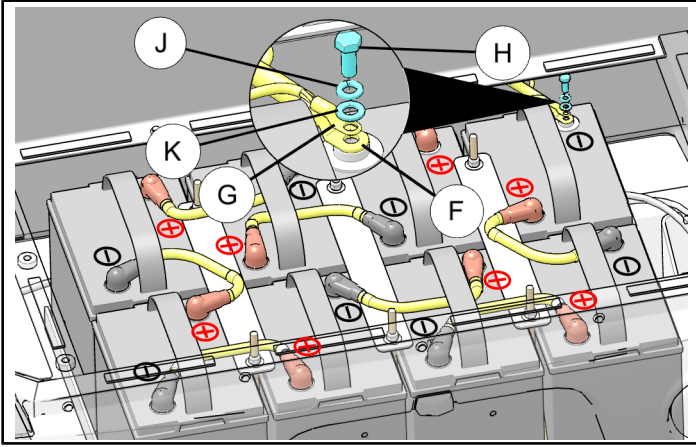
Battery access cover is attached with Velcro to the rear aluminum frame.



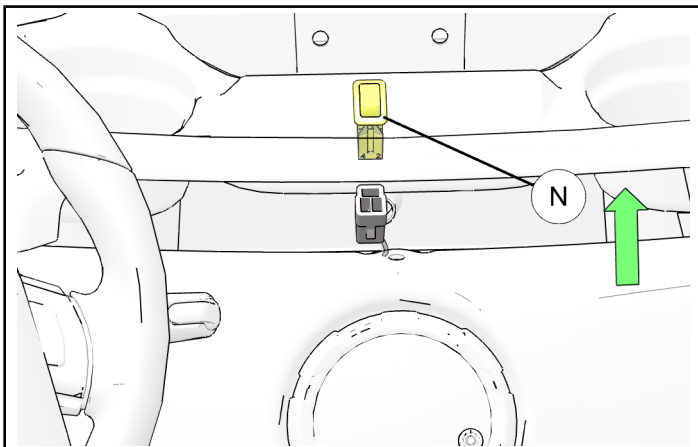
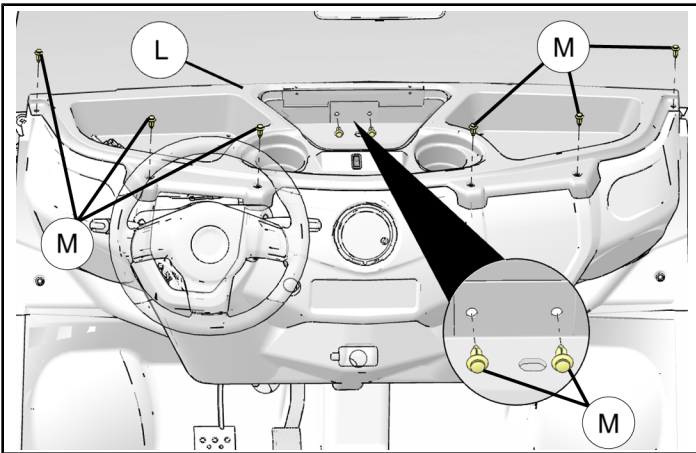
- b. **For eL XD:** Remove six socket head screws (D) and three screws (E) using 5mm socket and ratchet to remove rear battery access cover (C).



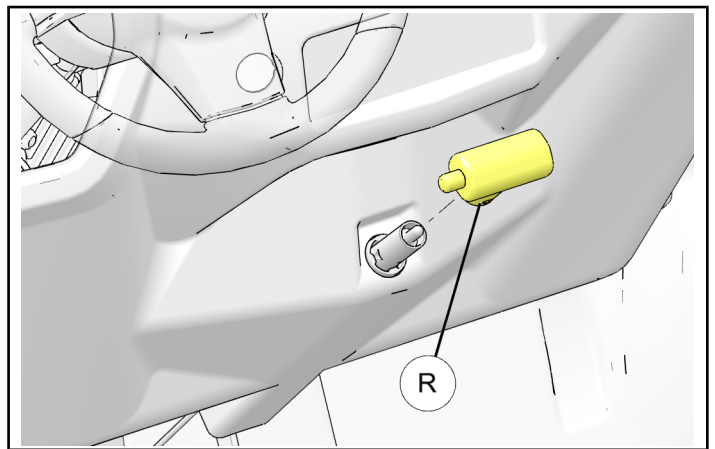
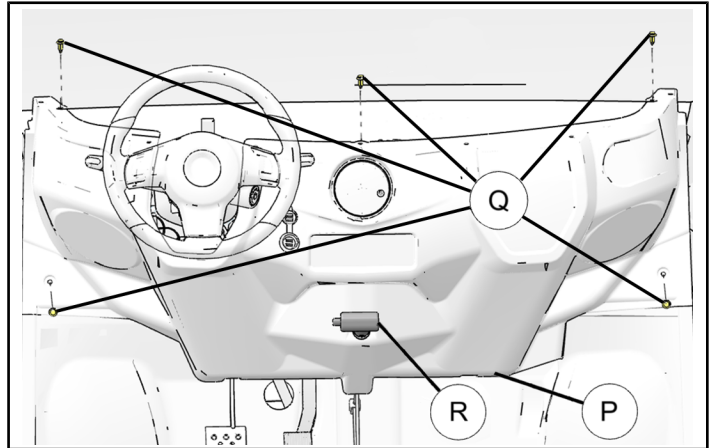
5. Disconnect battery pack in the rear of the vehicle. Disconnect the most negative terminal (F) (this will be always most forward and RH negative terminal of your battery pack) and temperature sensor (G) by removing screw (H) and washers (J) (K). Use 13mm socket and ratchet for hardware removal.



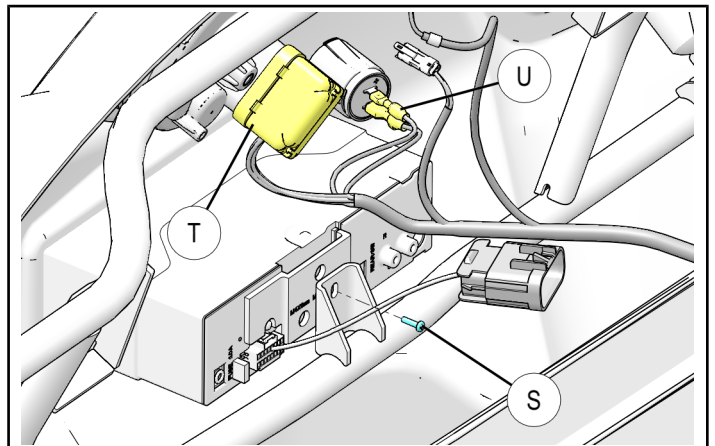
6. Using wire cutter or flat head screw driver, remove eight push rivets (M) from upper dash panel (L). Slowly lift upper dash panel and disconnect the switch (N).



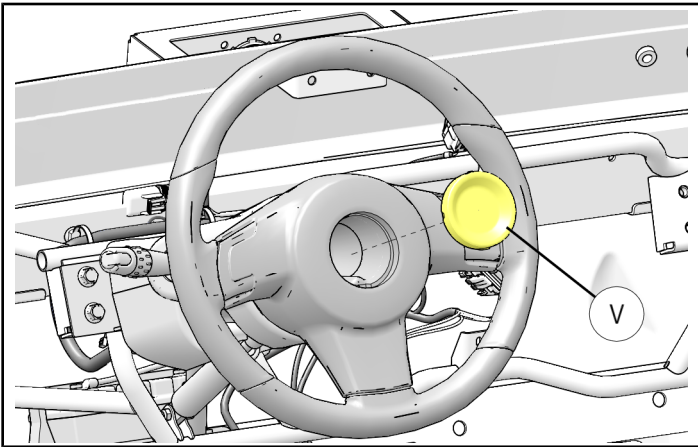
7. Remove five push darts (Q) from lower dash panel (P) and use Phillips screw driver to remove parking brake handle (R). Use 13mm socket and ratchet for push darts removal.



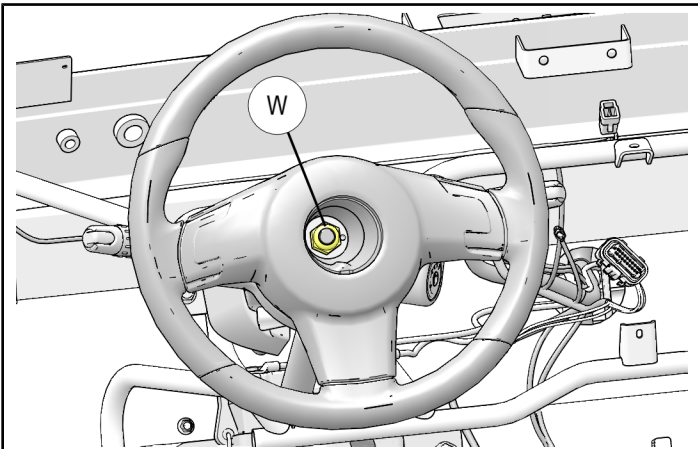
8. Dismantle the radio (if equipped) by removing screw (S) with Phillips screwdriver and disconnect CPI gauge connector (T) along with the USB port connectors (U) and remove the lower dash.



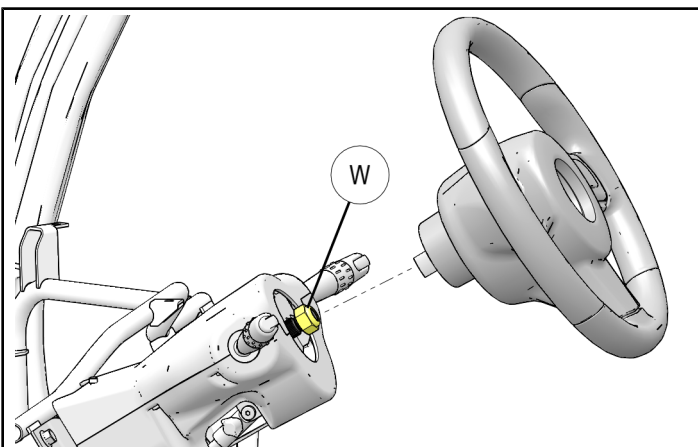
9. Remove steering wheel nut cover (V) by using flat head screw driver.



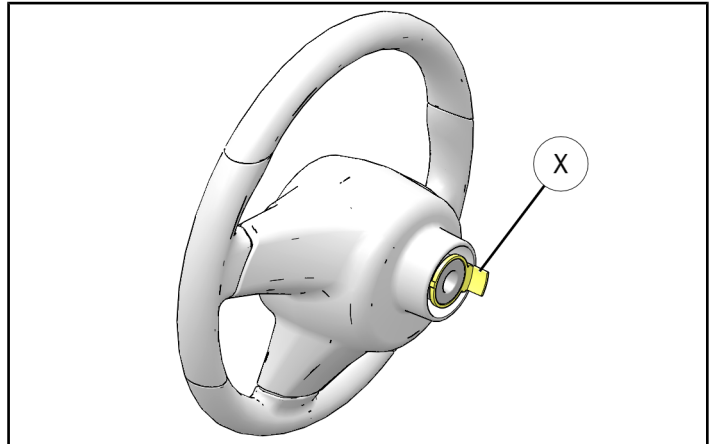
10. Loosen steering wheel nut (W) by using 15/16" socket and ratchet and extension but leave 2-3 threads engaged to the steering shaft for the next step. Make sure key is out of the ignition as it will help to use the steering lock to loosen the steering nut.



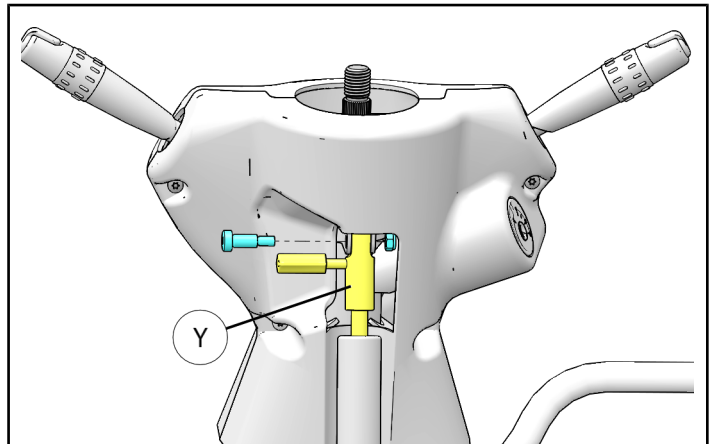
11. Remove steering wheel using a punch and hammer. Center the punch on the steering shaft and make sure the steering wheel nut (W) is still on to prevent damage to steering shaft threads. Strike the punch until you feel the steering wheel pop off of the steering shaft taper (usually this takes a large amount of force).



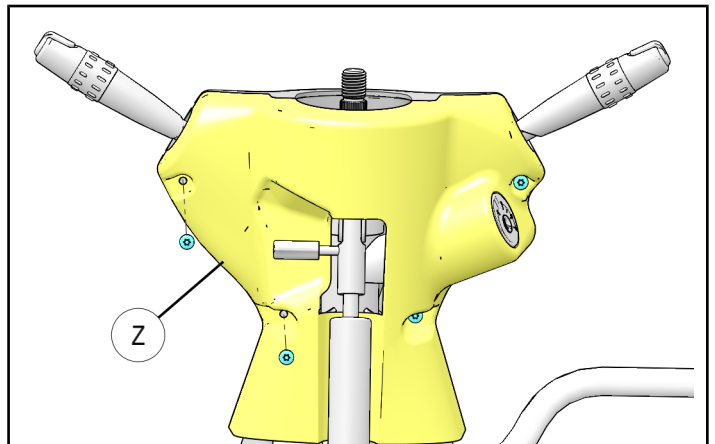
12. Remove the steering wheel nut and steering wheel and set aside. Be careful to not break the self-cancelling turn signal tab (X) on the back of the steering wheel.



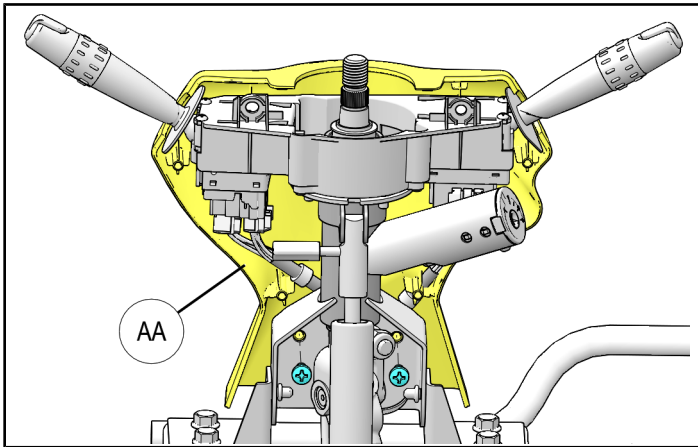
13. Remove attachment of steering shock (Y) by using 4mm hex socket and ratchet with 10mm wrench.



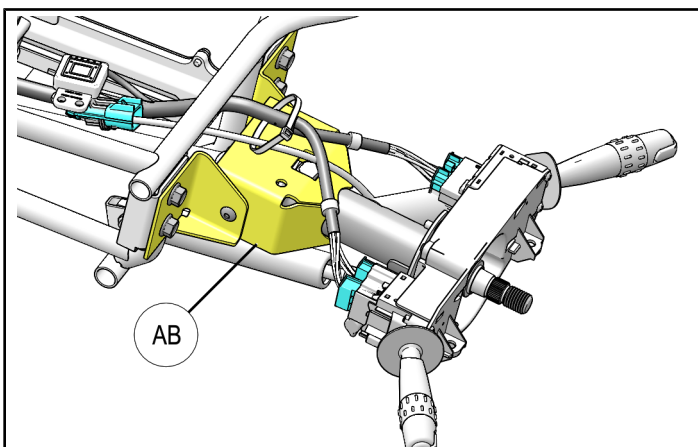
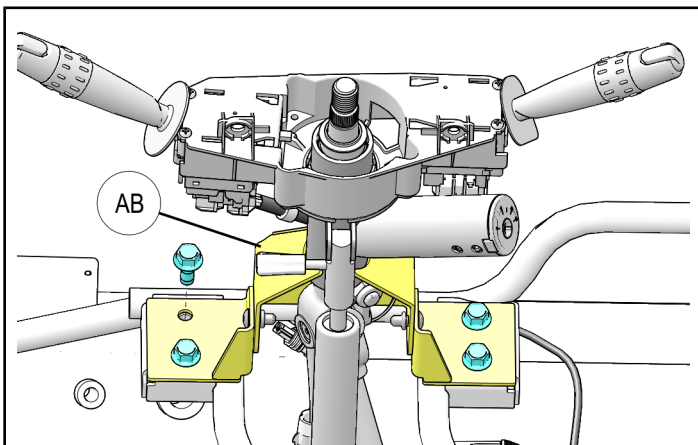
14. Remove lower steering column cover (Z) by using T25 Torx bit with screw driver.



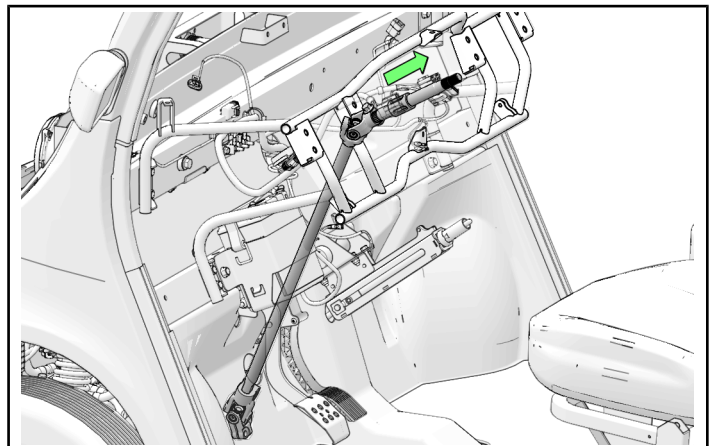
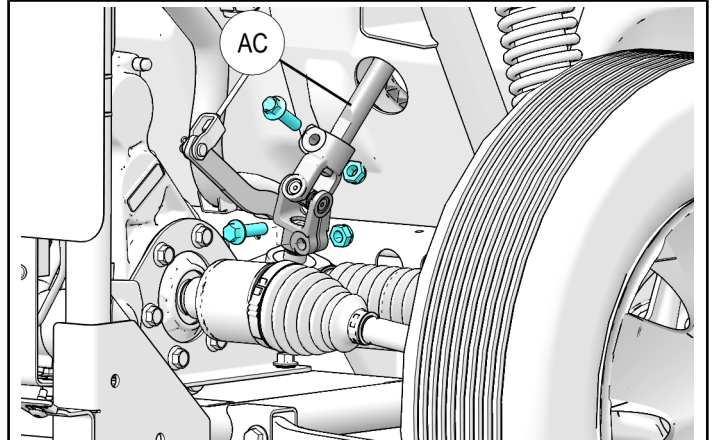
15. Remove upper steering column cover (AA) with #3 Phillips screw driver.



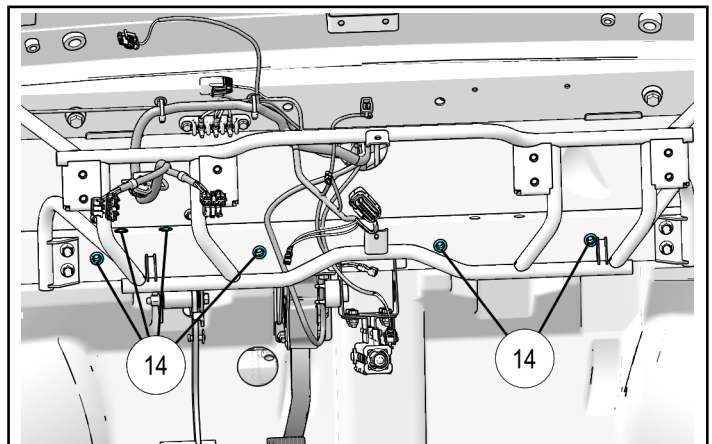
16. Remove the steering column weldment (AB) by removing four bolts to the front steel dash frame with 13mm socket and ratchet and unhook the turn stalks and ignition. The key must be in the ignition to disengage the steering lock for removing the steering column.



17. Remove lower steering shaft bolts with 15mm socket and ratchet and 17mm wrench and remove the fixed steering shaft (AC) by pulling it through the splash guard towards the driver's seat as shown.



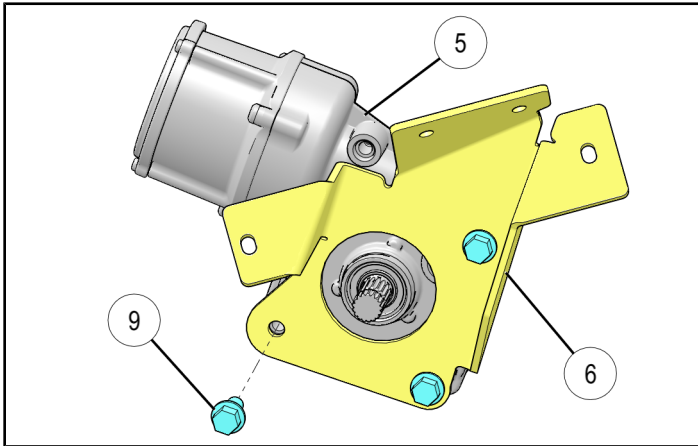
18. Install six rivnuts (14) with rivnut gun for supporting the EPS and EPS battery.



19. Outside of the vehicle, install the EPS mounting plate ⑥ to the EPS ⑤ using three bolts ⑨. Tighten the bolts with 15mm socket and ratchet. Torque to specification.

TORQUE

30 ft. lbs. (40.7 Nm)



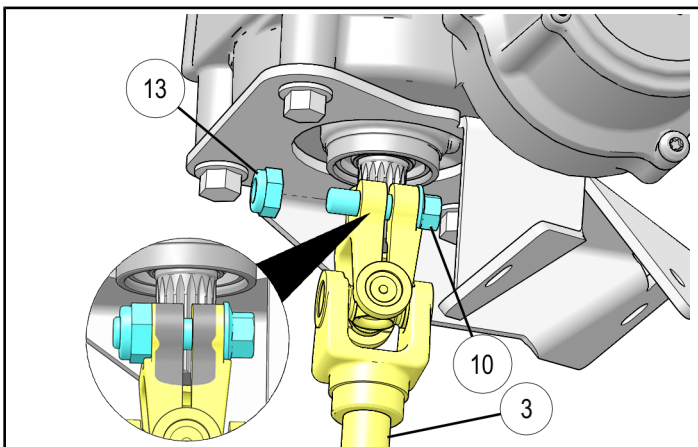
20. Install lower EPS steering shaft ③ to EPS with screw ⑩ and nut ⑬ outside of vehicle. Make sure to align the slit on the knuckle with the skip tooth on the steering rack. Tighten the screw and nut with 15mm socket and ratchet and 17mm wrench. Torque to specification.

TORQUE

47 ft. lbs. (63.7 Nm)

NOTE

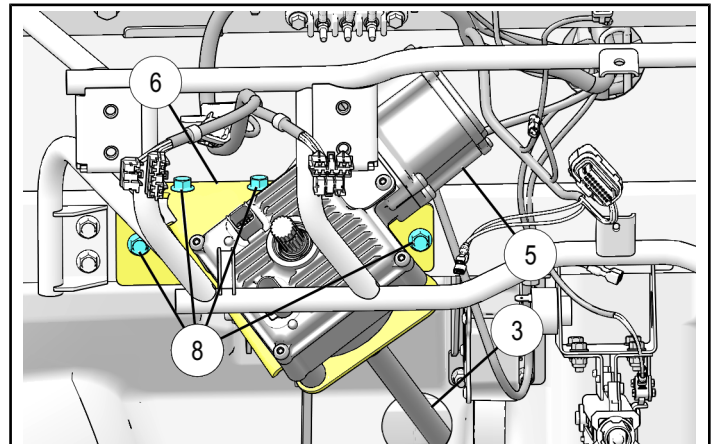
Failing to properly align the steering can result in improper phasing causing the steering to feel uneven.



21. Install EPS ⑤ with bracket ⑥ and shaft ③ into the vehicle and tighten using four bolts ⑧. Slip the steering shaft onto the rack during install. Tighten bolts with 13mm socket and ratchet. Torque to specification.

TORQUE

18 ft. lbs. (24.4 Nm)



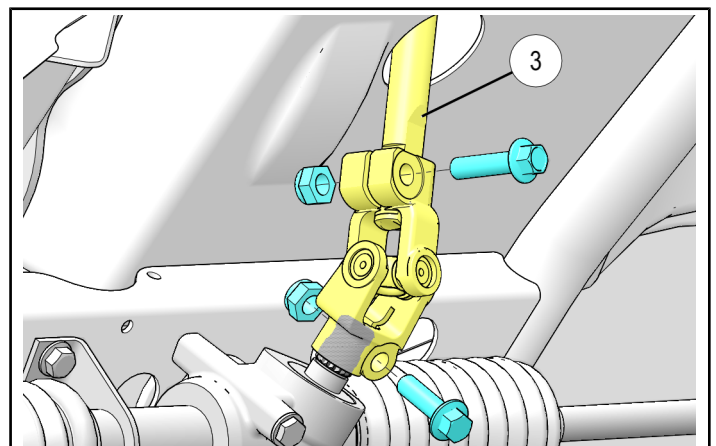
22. Tighten the lower steering shaft ③ with 15mm socket and ratchet and 17mm wrench. Start with the lowest bolt first. Once the lower joint is torqued, proceed to torque the slip joint as well.

TORQUE

47 ft. lbs. (63.7 Nm)

NOTE

Make sure that the steering rack pinion should sit slightly recessed from the U-joint.



23. Install bearing and bushing on the upper steering shaft ① as shown below. Torque down the U-joint bolt ⑩ and nut ⑬ with 15mm socket and ratchet and 17mm wrench.

TORQUE

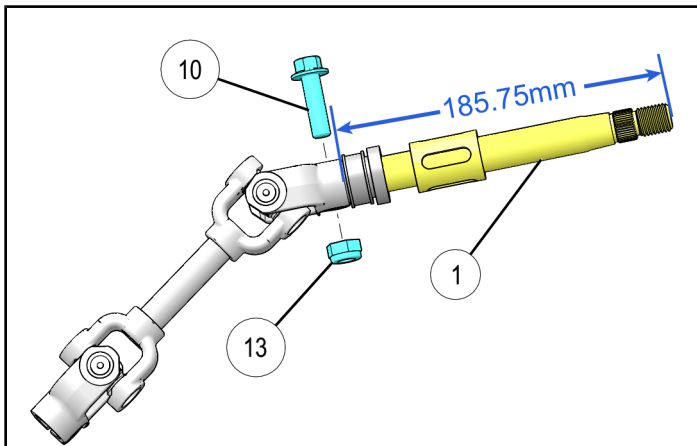
47 ft. lbs. (63.7 Nm)

IMPORTANT

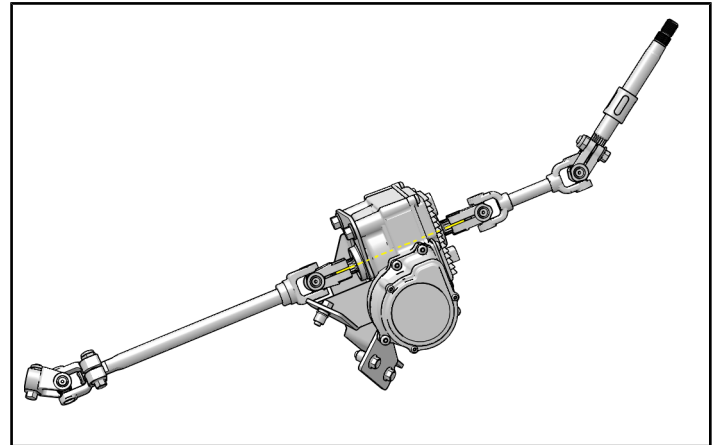
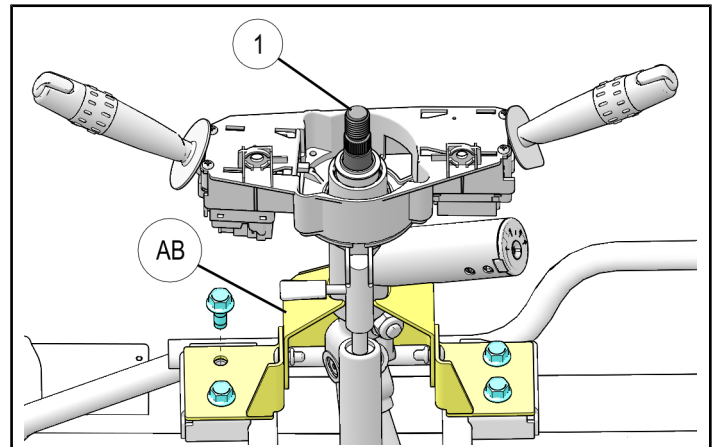
Critical Fit Instructions: The distance from the end of the steering shaft to the U-joint should be 185.75mm (use Vernier caliper for measurement).

NOTE

Failure to properly measure this distance will result in heavy steering and the degradation of the lower steering bushing.



24. Install steering column weldment (AB) to steering shaft ① and install the assembly back to the steel dash frame using four bolts. and 13mm socket and ratchet. While installing slip the steering shaft onto the EPS and ensure the skip tooth is aligned with the slit on the U-joint. The U-joint slits should align when installed.

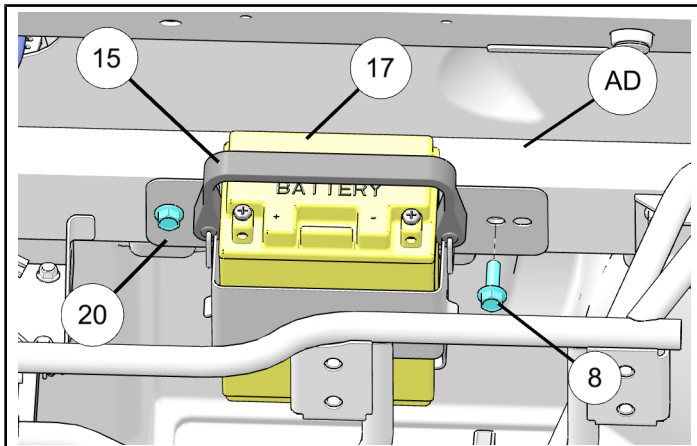


25. Reinstall the upper steering column cover (AA), removed in Step 15.

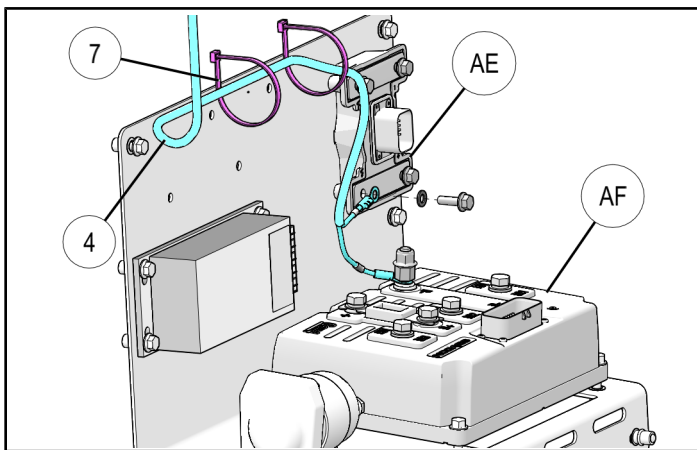
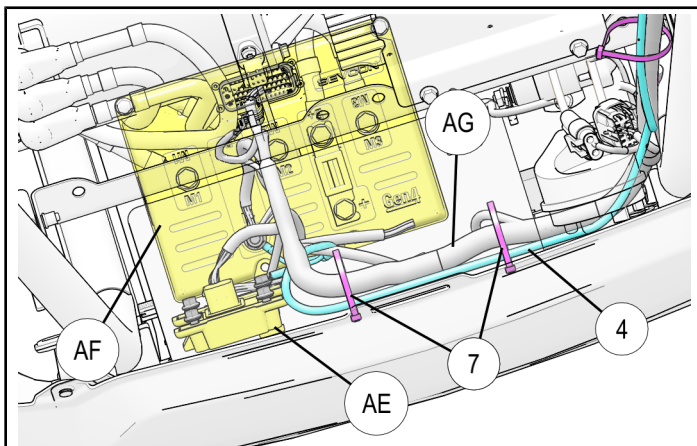
26. Reinstall the lower steering column cover (Z), removed in Step 14.

27. Reinstall the steering shock (Y) or fix steering bar, removed in Step 13, with the shoulder bolt and nut.

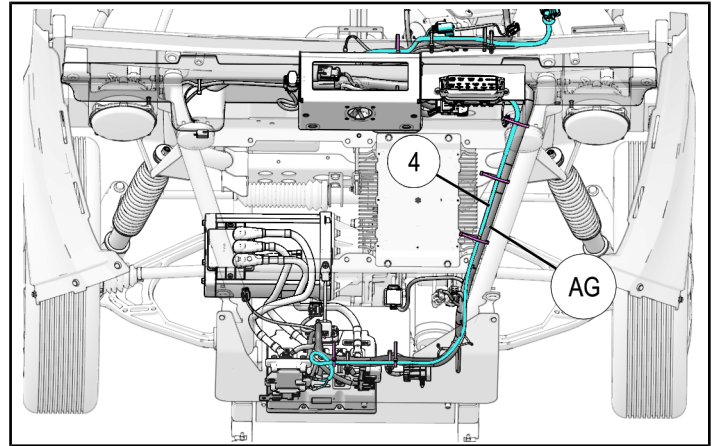
28. Install the 12V battery ⑰ with bracket ⑳ and strap ⑮ into the RH side of the lower dash extrusion support (AD) of the vehicle using two bolts ⑧ . Tighten bolts with 13mm socket and ratchet.



29. Install EPS harness ④ starting at the front of the vehicle. Start with installing the harness to the BMC (AE) and motor controller (AF) as shown below. Zip tie ⑦ EPS harness ④ to main front harness (AG).



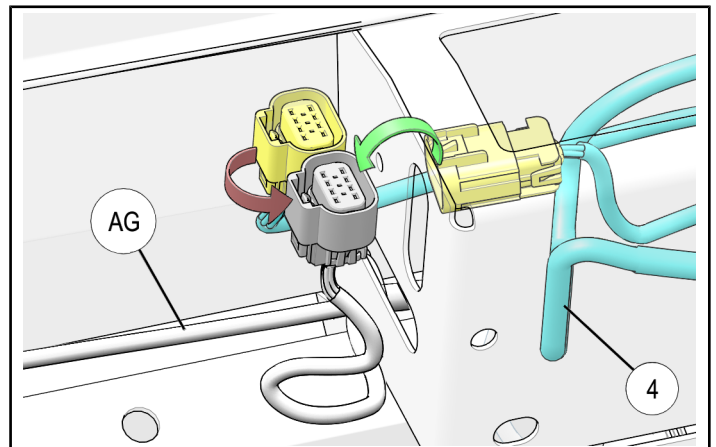
30. Continue to route the harness ④ following the front harness (AG) and through the plastic splash guard.



31. Plug in the EPS harness ④ to the diagnostic port in the front harness (AG) and replace the diagnostic port location with the other connector in the EPS harness.

TIP

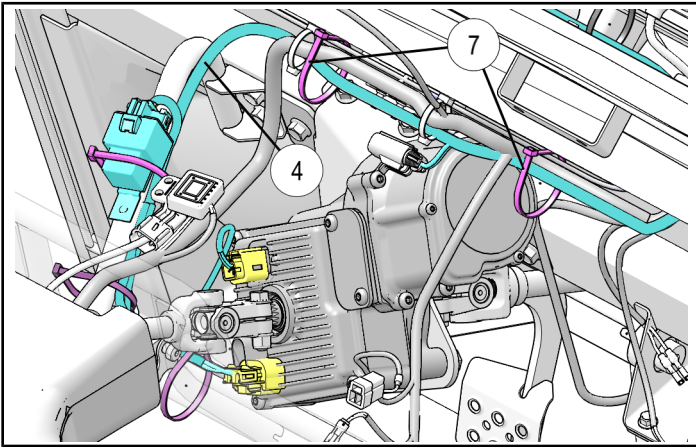
If you have lithium ion kit installed, lithium ion harness must be installed to the front harness first then followed by the EPS harness.



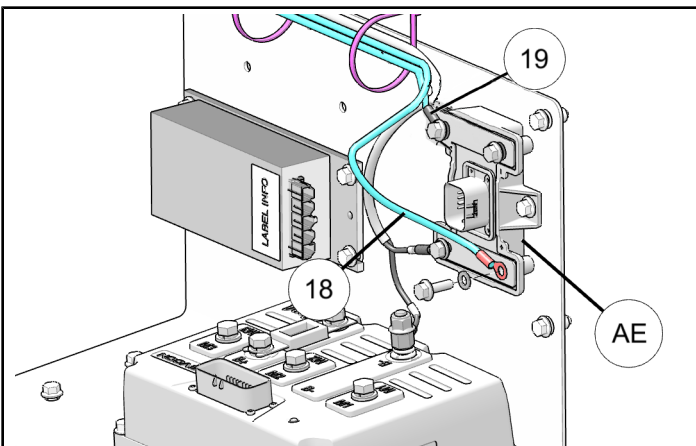
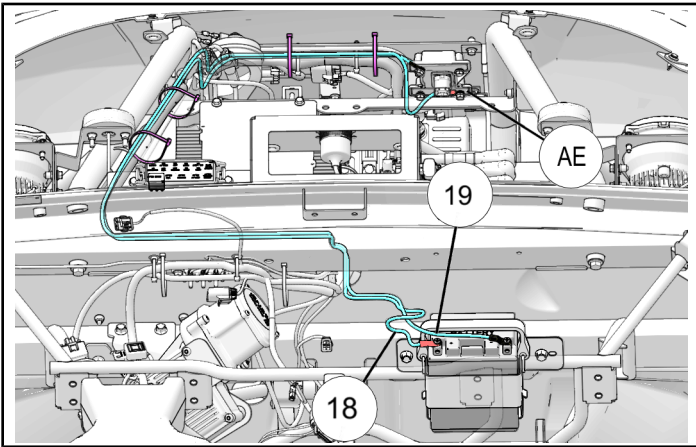
32. Plug EPS harness ④ into the EPS. Zip tie ⑦ relay and harness.

NOTE

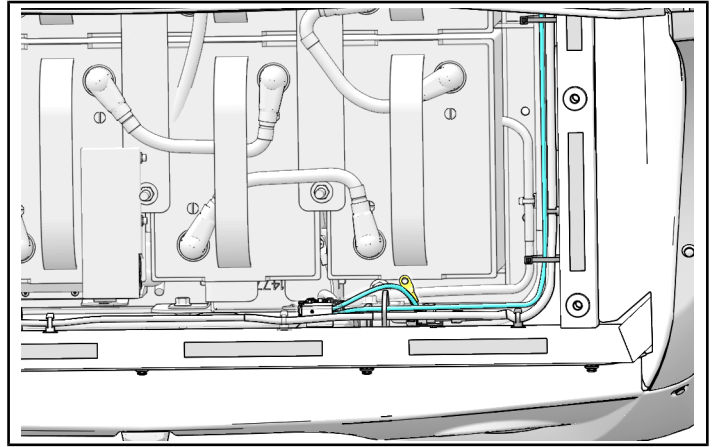
Ensure the harness will not interfere with the steering shaft.



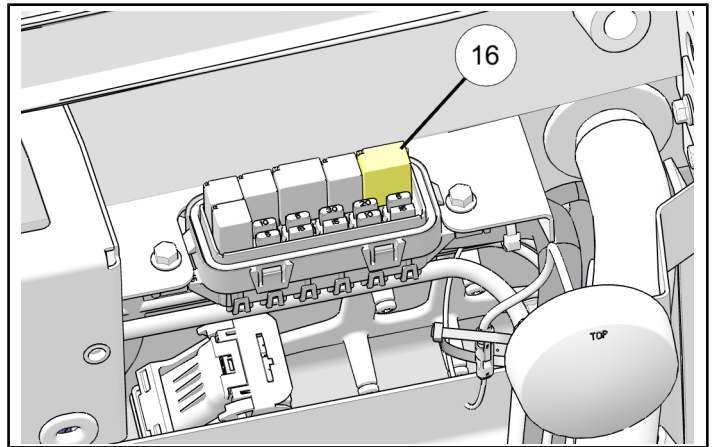
33. Route EPS battery harness as EPS battery (+ve) ⑱ to BMC (+ve) and EPS battery (-ve) ⑲ to BMC V (-ve). Remove main harness +12V cable from BMC (AE) can zip tie back to main harness (this will not be connected anymore with this option).



34. Disconnect the +12V battery cable from the rear battery pack and tie it off with a zip tie (this will not be connected anymore with this option). Use 1/2" socket and ratchet if removing the flooded battery pack. 13mm socket and ratchet if replacing the maintenance free pack.



35. Install relay ⑯ to the fuse box as shown.



36. Reinstall steering wheel with steering nut (W). Make sure the steering is straight and the vehicle will drive straight with a correctly aligned steering wheel.

NOTE

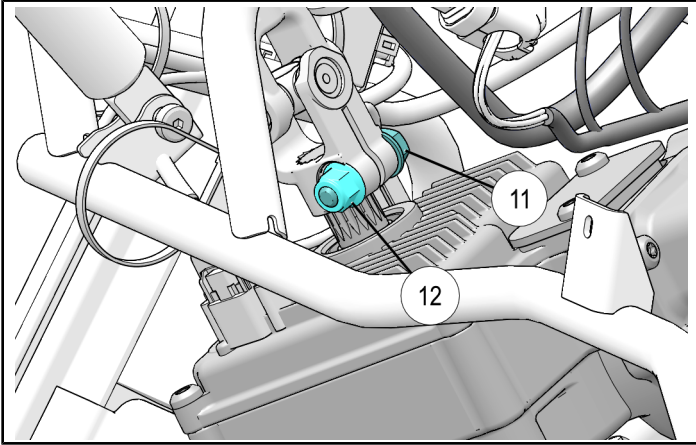
Ensure the self-cancelling turn signal tab is installed.
Ensure bearing and bushing are installed.

37. Once steering is properly aligned and torqued reinstall the steering wheel nut cover (V).

38. Tighten upper shaft slip joint screw ⑪ and nut ⑫ now that the EPS steering has been properly installed. Torque to specification.

TORQUE

18 ft. lbs. (24.4 Nm)



39. Reinstall the lower dash (P) to the vehicle with the push darts (Q), removed in Step 8.
40. Reinstall parking brake handle (R), removed in Step 7.
41. Reconnect the CPI guage (T) and USB port (U) and secure the back of the radio (if equipped) to the steel dash frame using the screw (S), removed in Step 8.
42. Reinstall upper dash (L). Make sure to connect all of the switches (N), removed in Step 6.
43. Reconnect the main vehicle connector (B) and battery pack most negative terminal (F) and temperature sensor (G), removed in Steps 3 and 5.
44. Reinstall the battery cover panel (C) and the hood with thumb screws (A), removed in Steps 2 and 4.