

RANGER 900 POWER STEERING KIT



P/N 2880083

APPLICATION

MY14 AND NEWER *RANGER* XP 900 MODELS

IMPORTANT

It is strongly recommended that this kit be installed by an authorized Polaris dealer.

NOTE

Use of this kit on the *RANGER* 570 will require a battery upgrade (PN 4014132) for the kit to work properly.

NOTE

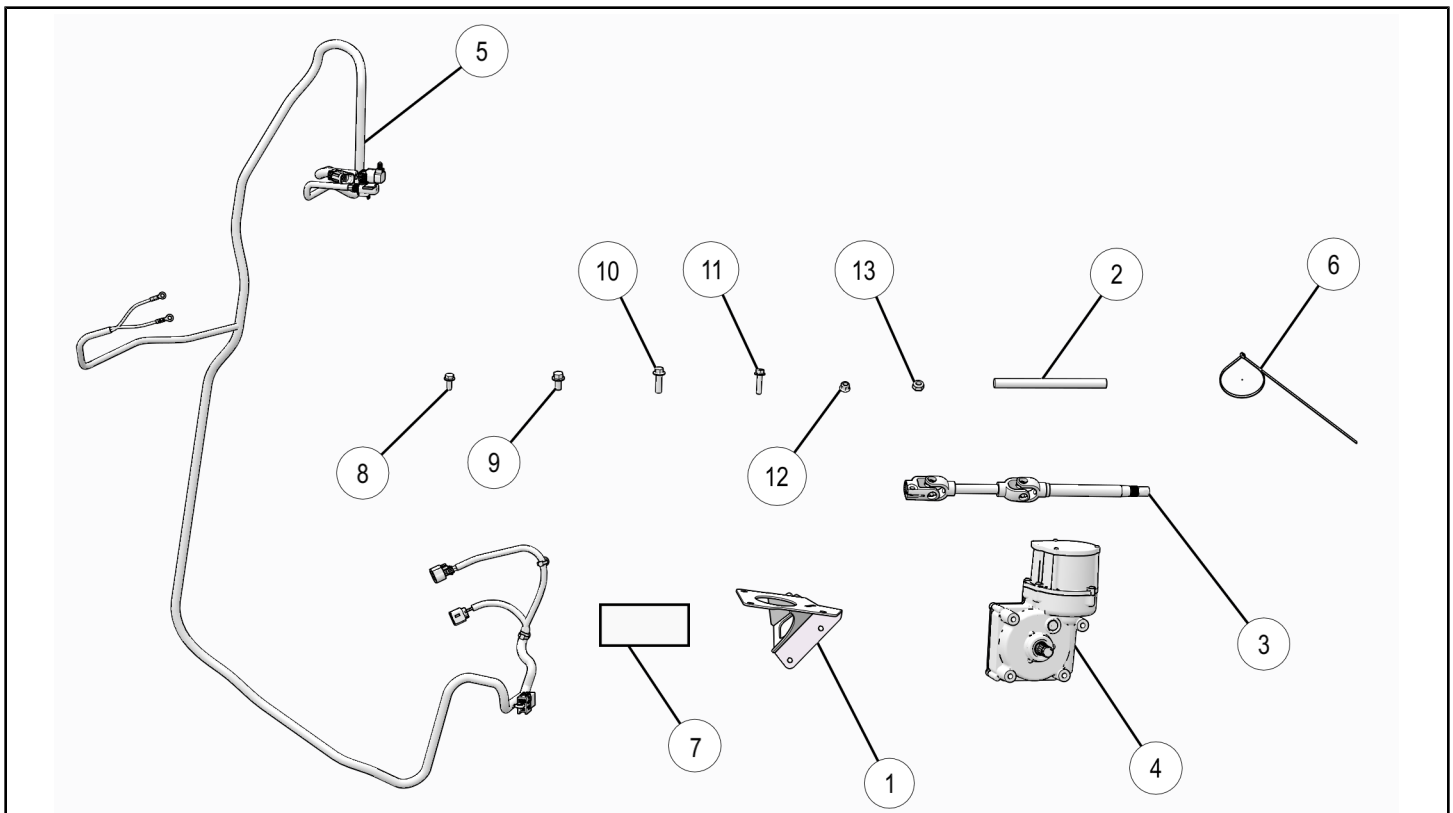
It is critical that you determine the model and year of your vehicle to ensure you have the correct kit for your given application. This power steering system provides reduced steering effort at low speeds as well as improved steering wheel isolation from sharp bumps and ruts. This steering assistance is based on vehicle speed, with greatest assistance being provided at low speeds and tapering off as speed increases.

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	Power Steering Bracket	1021526-329
2	1	Steering Shaft, Lower	1823667
3	1	Steering Shaft, Upper	1823891
4	1	Power Steering Motor	2413339-SP
5	1	Power Steering Harness	2412710
6	10	Plastic Tie Straps	7080492
7	1	EPS Decal	7175528
8	2	Self Tapping Bolt, M8x1.25x20	7518555
9	3	Flange Bolt, M10x1.25x20	7518558
10	1	Flange Bolt, M10x1.50x35	7518644
11	2	Flange Bolt, M8x1.25x35	7519052
12	4	Nylock Flange Nut, M8x1.25	7547332
13	1	Nylock Nut, M10x1.5	7547385
	1	Instructions	9925341

TOOLS REQUIRED

- Metric Socket Set
- Metric Wrench Set
- Red Loctite 271
- Metric Hex Key Set
- 1/2" Impact Wrench
- Flat Screwdriver
- Torx Drivers
- Torque Wrench
- Ratchet

ASSEMBLY TIME

2 hrs.

IMPORTANT

Your *RANGER* 900 POWER STEERING 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.

INSTALLATION INSTRUCTIONS

REMOVAL

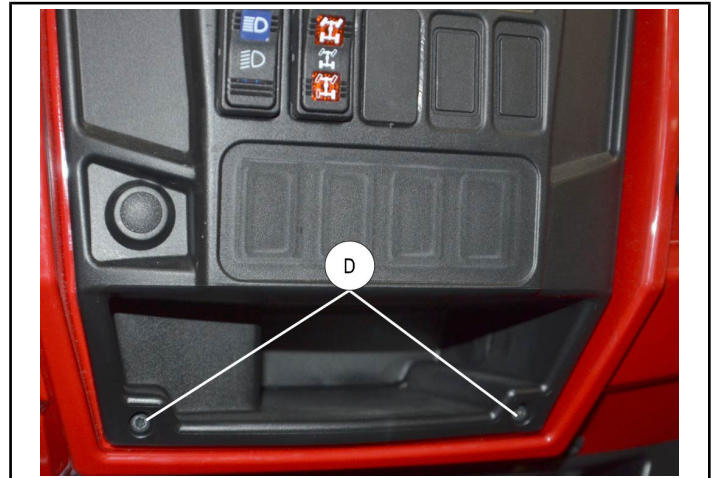
1. Place the vehicle in "PARK". Turn the key to "OFF" position and remove from the vehicle.
2. Remove passenger seat and storage tray (A). Disconnect black negative battery cable from battery. Disconnect red positive cable from battery.



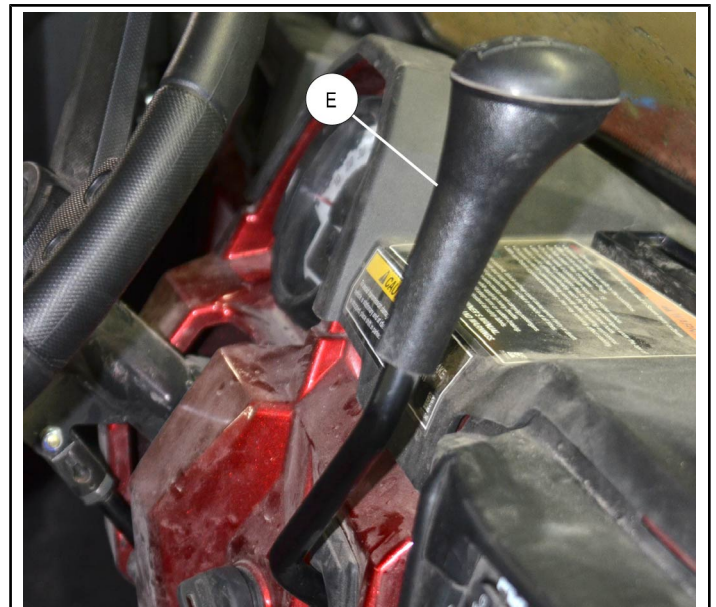
3. Use a flat screwdriver to remove the four plastic dart clips (C) securing the top dash panel and remove the panel (B) by sliding it rearward to release the rear locking tabs



4. Use a T25 torx bit to remove the two screws (D) retaining the center switch panel to the dash.

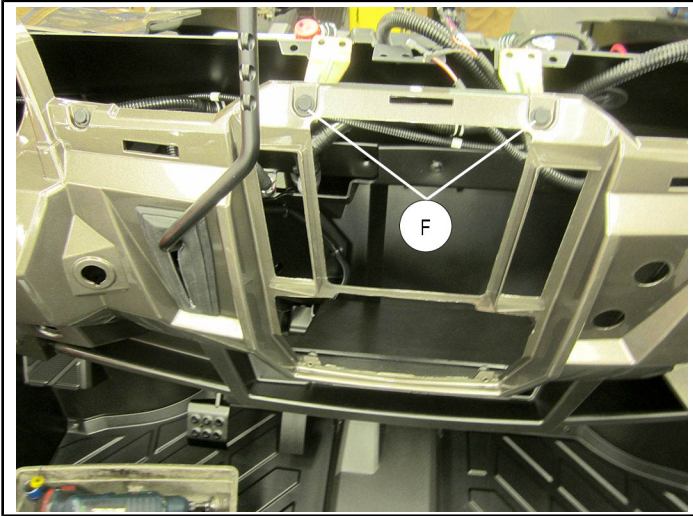


5. Carefully disconnect the connectors from the switches paying close attention to connector placement. The factory connectors for lights and the four wheel drive system should be labeled accordingly. Remove the center switch panel from the unit at this time.
6. Use a flat screwdriver to remove the cap of the shift lever (E) and a T25 torx to remove the lever screw. Pull up to remove the handle.

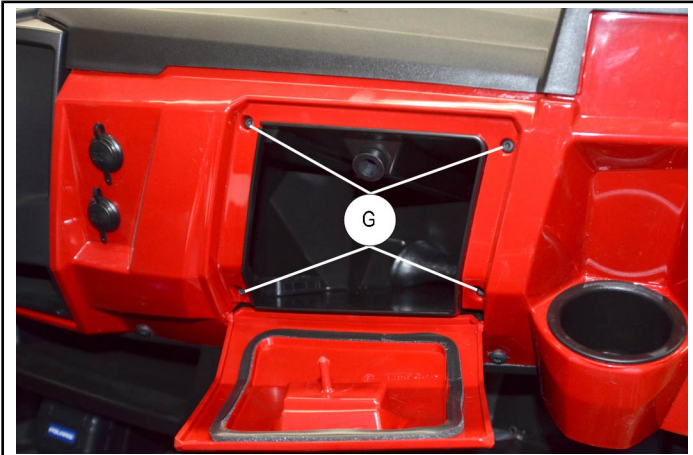


7. Carefully disconnect the wire connectors from the rear of the 12 volt power plugs, speedometer and ignition.

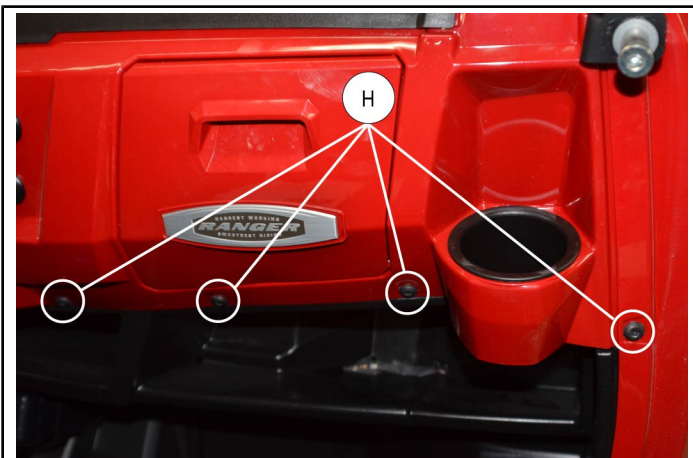
8. Use a flat screwdriver to remove the five dart clips (F) securing the top of the dash panel to the unit.



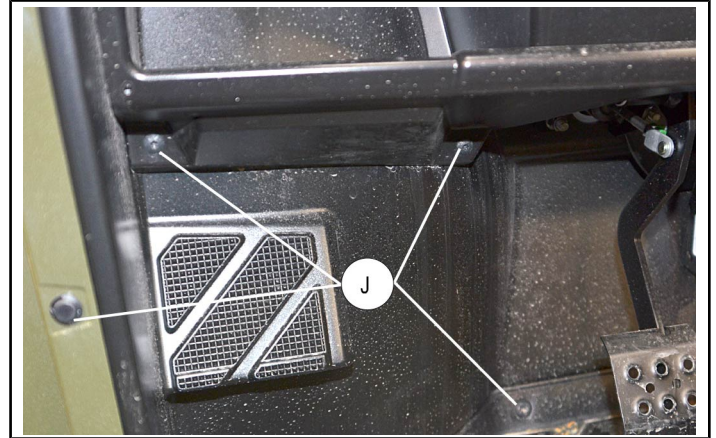
9. Open the glove box and use a T25 torx to remove the four screws (G) securing the dash panel to the rear of the glove box.



10. Use a T40 torx to remove the ten lower screws (H) from the dash panel and carefully remove the dash from the unit at this time.



11. Use a T25 torx to remove the four lower screws (J) for the lower dash panel and a T40 to remove the last screw from the inside of the glove box. The lower dash panel can now be removed from the unit.



12. Use a flat screwdriver to remove the four plastic dart clips (K) securing the drive shaft cover (L) and remove it at this time.



13. Align the steering shaft joint so the bolt and nut can be accessed through the opening in the floor where the drive shaft cover was removed. Use a 15 mm and 17 mm wrench to remove the lower bolt from the steering shaft.

14. Use a flat screwdriver to remove the center cap from the steering wheel. Use a 24 mm socket and a 1/2" impact wrench to remove the steering wheel nut. The shaft will be pressed out of the tilt assembly in a later step, but nut removal is easier when the assembly is still in the unit.

15. Use a 10 mm wrench and 4 mm hex key to remove the lower bolt from the tilt wheel cylinder. Use a 17 mm wrench and a 6 mm hex key to remove the two side pivot bolts from the tilt wheel assembly and remove the tilt wheel and shaft assembly from the unit at this time.

16. Carefully press the steering shaft out of the tilt wheel assembly paying close attention to spacer placement and retain all hardware for reassembly.

INSTALLATION

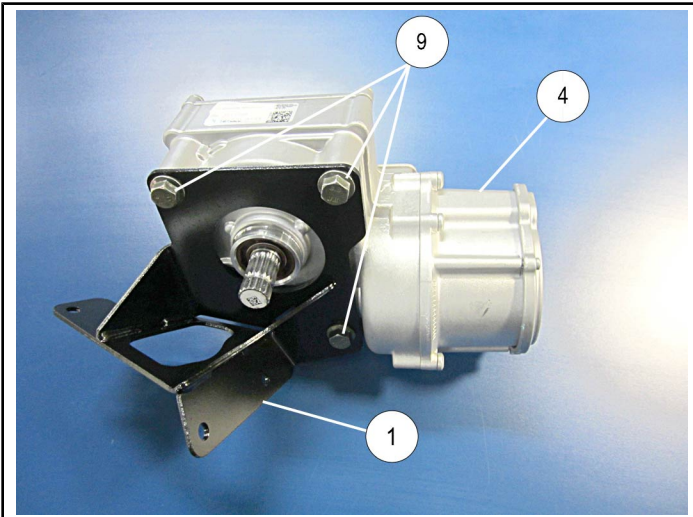
CAUTION

Striking the steering wheel or steering shaft can permanently damage the EPS unit and cause a Power Steering Fault or Failure. Avoid striking the steering wheel, steering shafts and EPS unit during installation. Take care not to drop the EPS motor assembly and avoid any axial loading of the input or output shafts because this can also cause permanent damage. Avoid using impact tools when installing the shafts and steering wheel.

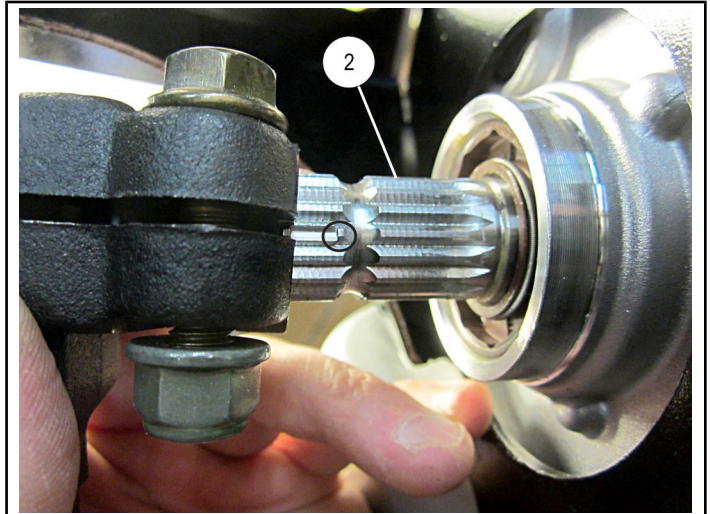
1. Assemble the power steering bracket ① to the bottom of the EPS motor ④ with three flange bolts ⑨. Torque bolt to below mentioned specification.

TORQUE

24 ft. lbs. (32 Nm)



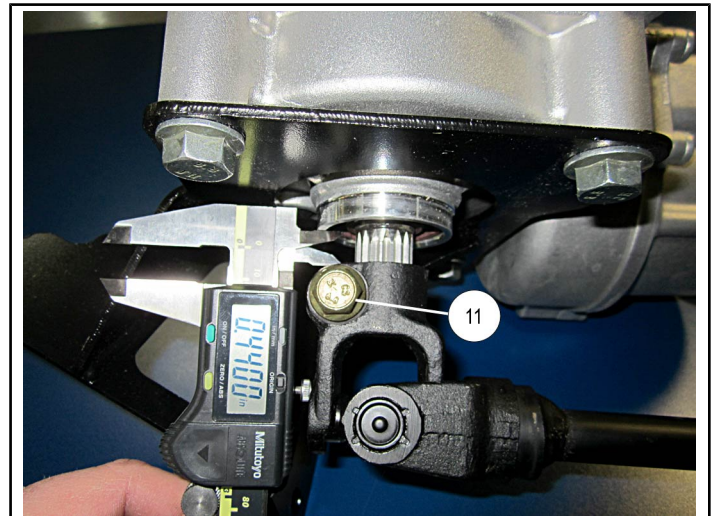
2. Locate the lower steering shaft ②. The lower steering shaft has two different joints that can be identified by the size of the clinch bolt holes. Slide the joint with the 8 mm hole onto the shaft found on the bracket side of the EPS motor. Align the split on the shaft joint with the alignment mark on the EPS motor shaft. When properly aligned the shaft will easily slide onto the shaft. Do not strike the shaft during installation because doing so can permanently damage the EPS motor assembly.



3. Install flange bolt ⑪ and nylock flange nut ⑫ in the upper joint of the lower shaft. Position the shaft joint to be 0.44" from the EPS motor casting. Torque the clinch bolt to following specification. The 0.44" dimension is critical for proper shaft operation so double check this dimension after tightening and adjust if necessary.

TORQUE

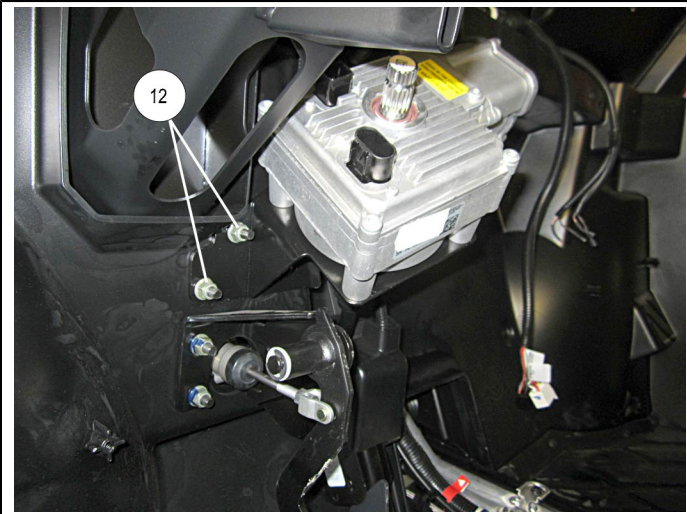
15 ft. lbs. (20 Nm)



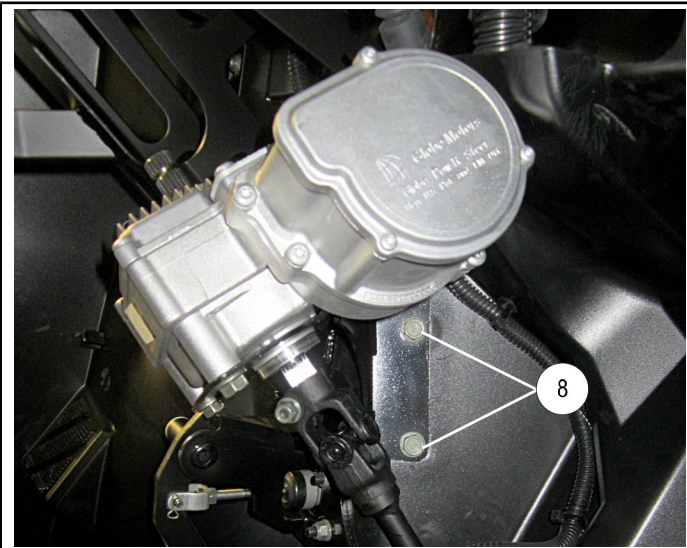
- Position the EPS motor assembly into the machine by carefully passing the lower joint shaft joint through the shaft passage in the floor to the steering rack. The steering rack splines are not keyed so take care to align the shaft joint so it can be tightened through the drive shaft cover and slide the joint onto the steering rack shaft. Align the EPS motor assembly on the studs above the foot brake and secure in place with the two nylock flange nuts ⑫ tightening them to following specification.

TORQUE

17 ft. lbs. (23 Nm)



- Locate the self tapping bolts ⑧ and install them on the right hand side of the EPS motor bracket. Tighten bolts until snug.



- Install the bolt ⑩ and nylock nut ⑬ in the lower joint of the steering shaft and torque to following specification at this time.

TORQUE

29 ft. lbs. (39 Nm)

- Locate the alignment mark on the upper EPS shaft and assemble the upper steering shaft ③ to the EPS unit taking care to align the alignment mark with the slot on the steering shaft joint. Once properly aligned the shaft should easily slide into place. Do not strike the shaft during installation because doing so can cause permanently damage the EPS motor assembly. Secure the shaft in place using one bolt ⑪ and nylock flange nut ⑭ leaving them finger tight at this time.
- Reinstall the tilt assembly that was removed in Steps 15 and 16 of the "Removal" section of Instructions taking care to properly locate all spacers during reassembly.
- With the wheels in the straight position properly align the steering wheel and apply Red Loctite 271 to the threads of the steering shaft. Secure the steering wheel in place using the original nylock nut and torque to following specification

TORQUE

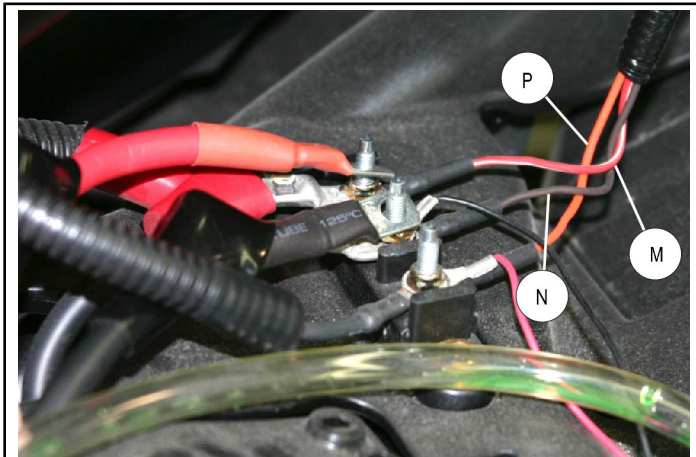
65 ft. lbs. (88 Nm)

Tighten the lower clinch bolt of the upper steering shaft to following specification at this time.

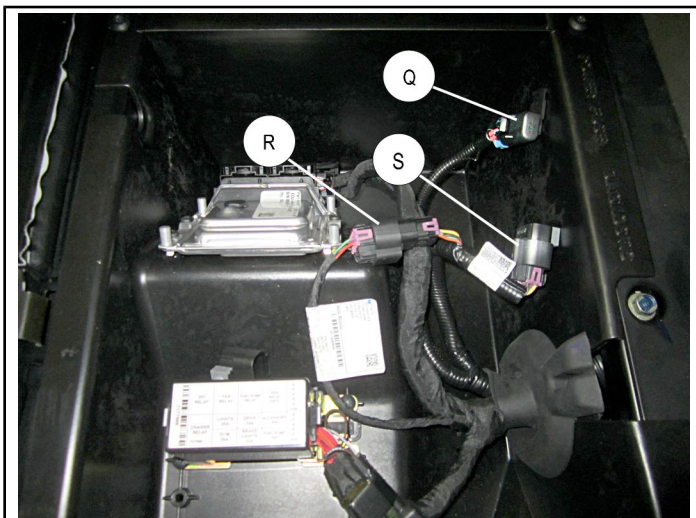
TORQUE

15 ft. lbs. (20 Nm)

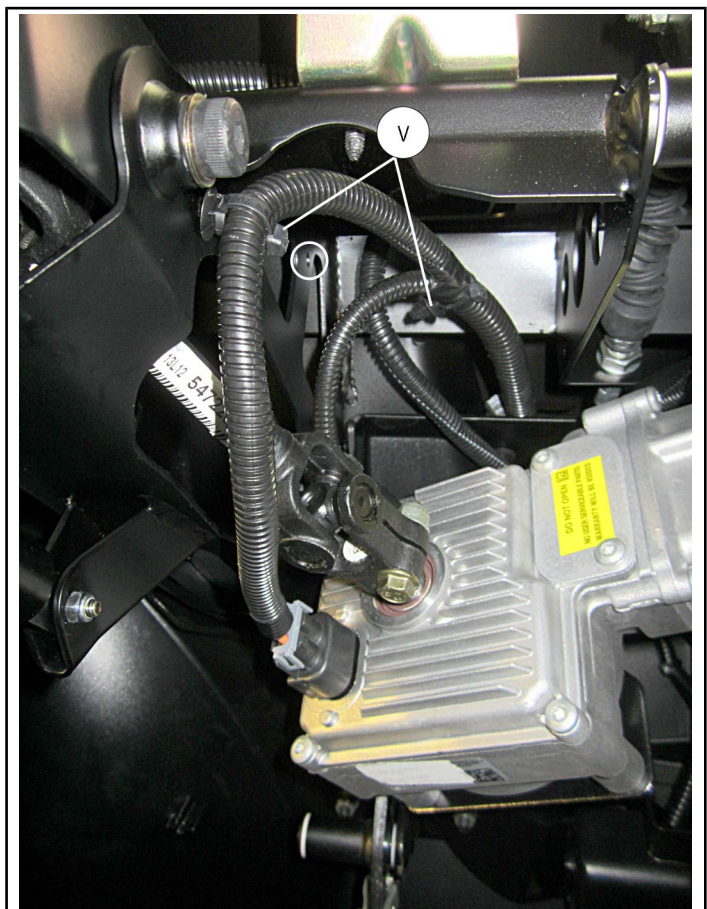
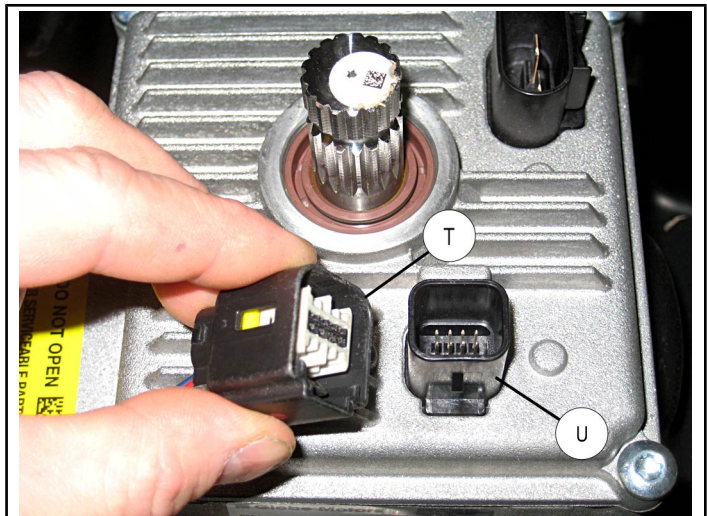
10. Locate the positive, negative and keyed power ring terminals on the EPS harness and route this end of the harness through the under-hood splash tray. Connect red wire (M) to red passenger side post on bus bar. Connect the black wire (N) to the center post on the bus bar. Connect orange wire (P) to driver side post on bus bar. The harness should be routed along and secured to the main harness using plastic tie straps.



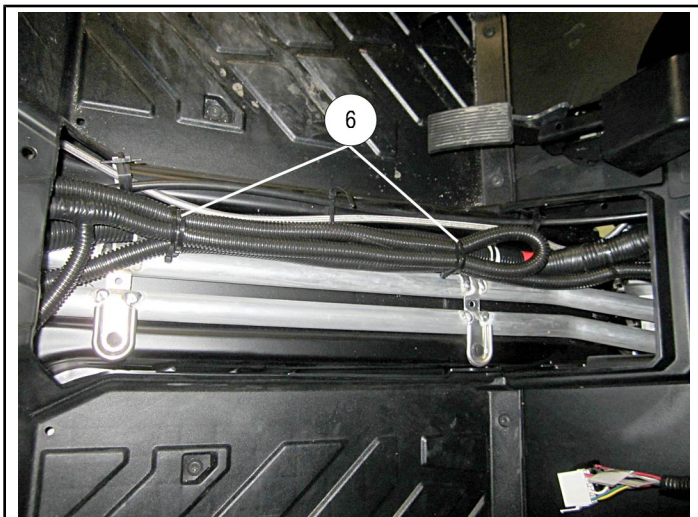
11. The diagnostic plugs and fuse holder (Q) on the EPS harness should be routed through the grommet with the main harness into the diagnostic center under the seat. Push the dart clip of the fuse holder into the empty hole at the back side of the plastic tube. Plug the stock diagnostic plug (R) into the EPS harness and the new diagnostic plug (S) into the protective cap.



12. Route the EPS motor plugs through the front side of the drive shaft cover following the main harness to the top left side of the dash passing through the floor panel on the right side of the steering wheel. Insert the connectors (T) into the corresponding plugs (U) on the EPS motor taking care to orient the sensor plug properly so the catch and tab match up. Improper plug alignment can damage the EPS unit by bending or breaking the connector pins. Secure the harness in place using the dart clips (V) provided on the harness and the holes on the right side of the steering support stamping.



- Bundle excess wire the drive shaft cover and secure it to the main harness.



- With the vehicle on the ground, turn key to the "ON" position and check function of the power steering module. Verify the steering does not drift left or right and check to be certain the EPS fault light is not illuminated prior to driving the vehicle. Turn the machine from full lock left to full lock right checking for tightness in the steering.
- Test drive the vehicle and check for proper operation or any abnormal behavior. Verify that the EPS fault light does not illuminate during operation and that vehicle does not pull to the left or right.
- Connect vehicle to Digital Wrench to verify that no EPS fault codes were generated during the test drive. If a fault is detected it must be resolved prior to further operation.

- Check all wire routings to make sure the harness is clear of sharp edges or rotating shafts that could cause damage over time. Use the provided plastic tie straps to secure the EPS harness to the main harness as required.

FINISHING

- Verify that all bolts and connections are secure and reinstall the plastic at this time by performing Steps 3-12 from the Disassembly Instructions in reverse order.
- Locate the EPS decal (7) and install it on the upper dash panel.



- Reconnect the battery and reinstall the storage compartment.