RUGGED
ATV/UTV PRODUCTS

EPS KIT
INSTALLATION MANUAL
PEPS-3004

ELECTRA-ASSIST

Included Components

1 

2 

3 

4 

5

6 

7

8 

9 

10 

11 

12 

13 

14 

15 

16 

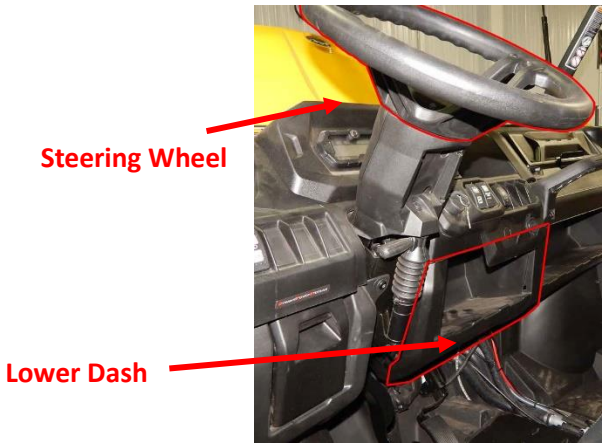
Pictures of hardware go here

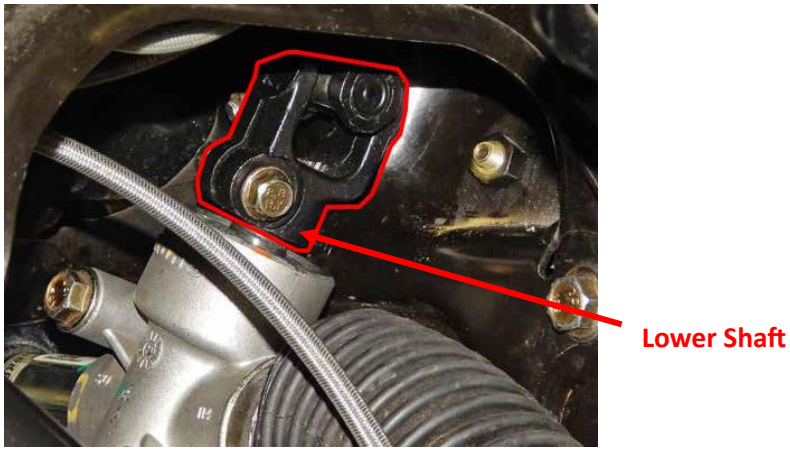
Unit A, 25 East Pearce St. Richmond Hill, ON. L4B 2M9 T: 905-881-9510 E: pdisales@pdintl.ca

	DESCRIPTION	QTY.
1.	Motor	1
2.	ECU / Control Module	1
3.	Wiring Harness	1
4.	ECU Mount	1
5.	Motor Mount Support	1
6.	Motor Mount	1
7.	Lower Shaft	1
8.	Upper Shaft	1
9.	M10 Flange Bolt	2
10.	M10 Bolt	2
11.	M8 Bolt	1
12.	M6 Bolt	1
13.	Spacer	1
14.	M10 Nylock Nut	4
15.	M6 Nylock Nut	1
16.	Electrical Connectors	

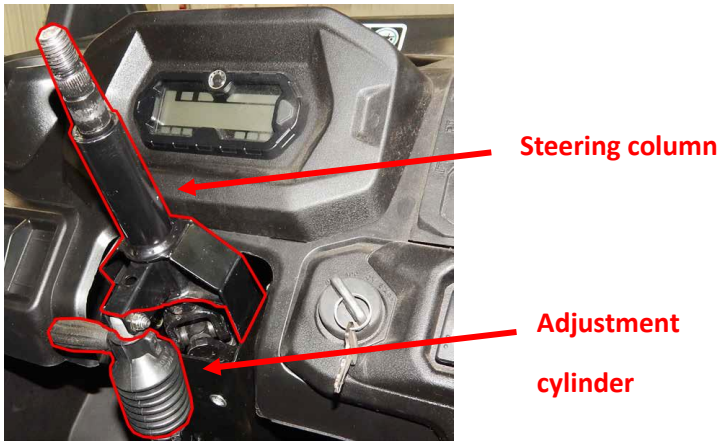
Removal Procedure

Step 1 Remove the steering wheel and lower dash from the machine. Then, remove the lower shaft from the rack and pinion.

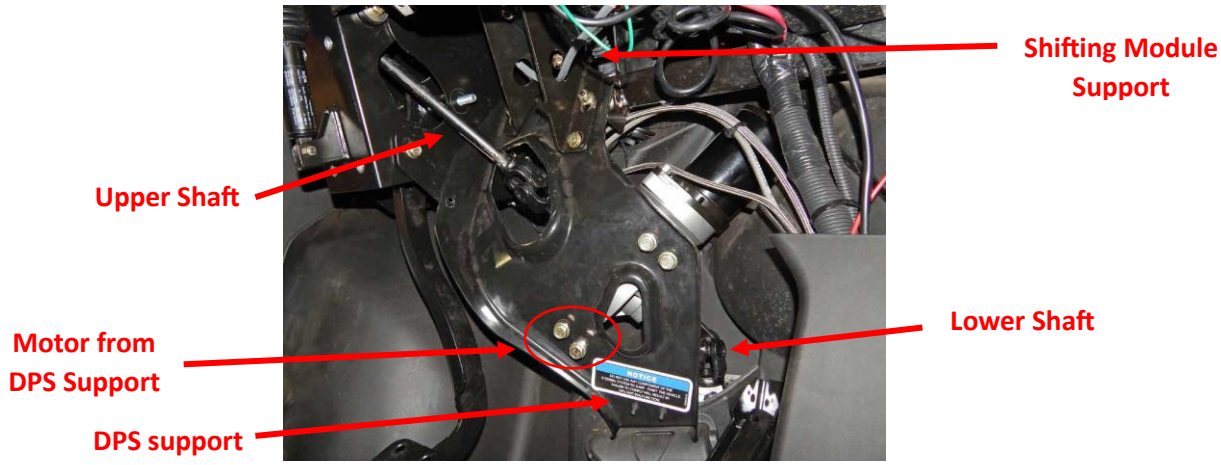




Step 2 Remove the steering box cover, steering column, and the adjustment cylinder



Step 3 Remove the shifting module support, and the shafts that connect from the motor. Additionally, remove the DPS support and the motor from the DPS support.

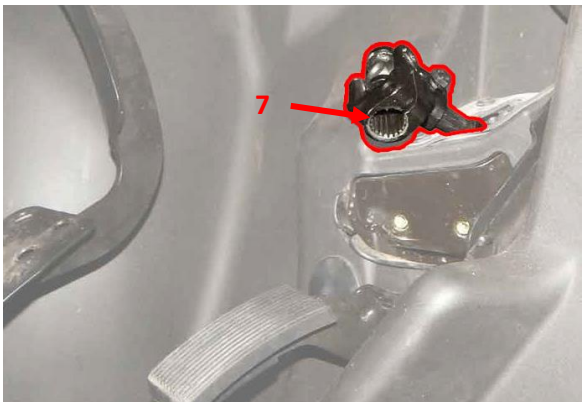


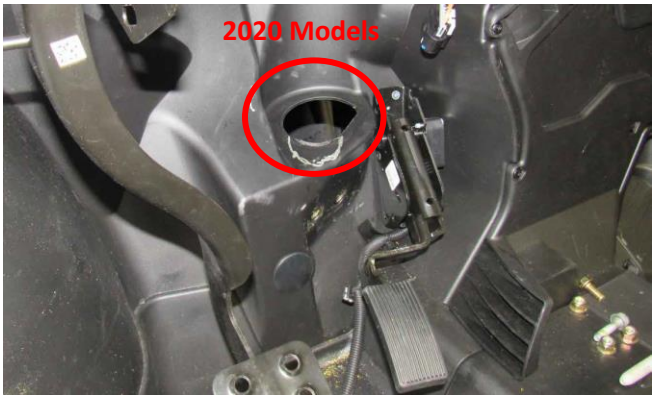
Unit A, 25 East Pearce St. Richmond Hill, ON. L4B 2M9 T: 905-881-9510 E: pdisales@pdintl.ca

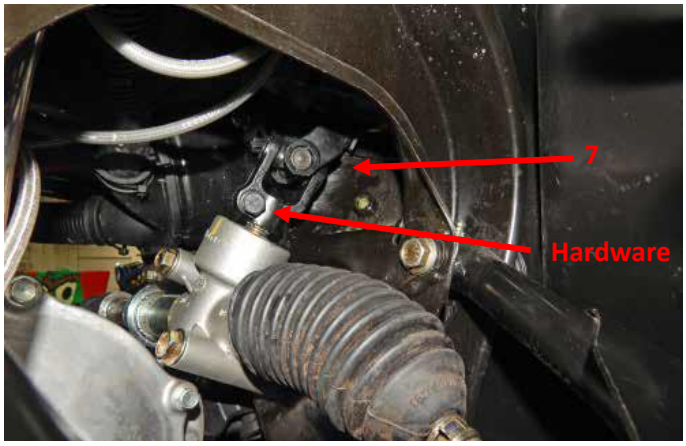
Installation Procedure

Note: Do not fully tighten hardware unless noted otherwise.

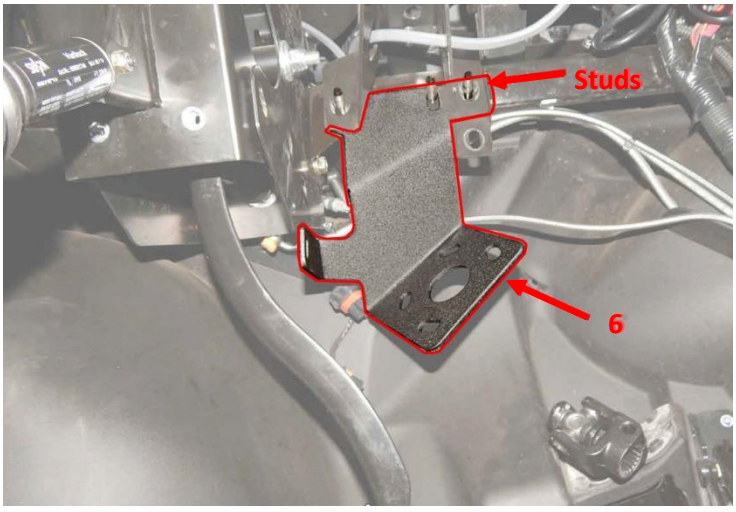
Step 1 Insert the lower shaft (7) through the firewall as shown in the picture, and install it onto the rack and pinion using the included hardware. If you have a 2020 model, you must create a cutout.





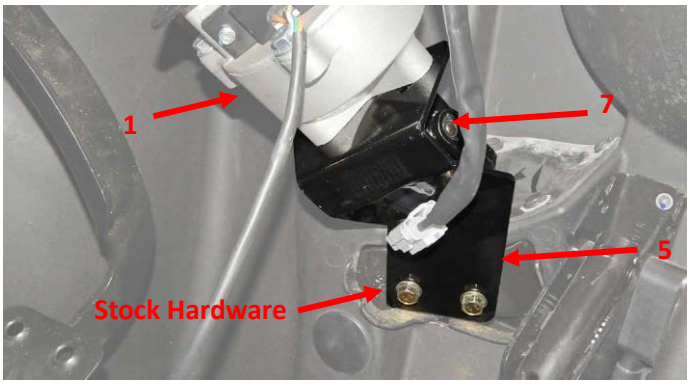


Step 2 Place the motor mount (6) onto the shifting module support studs, then reinstall the shifting module support.

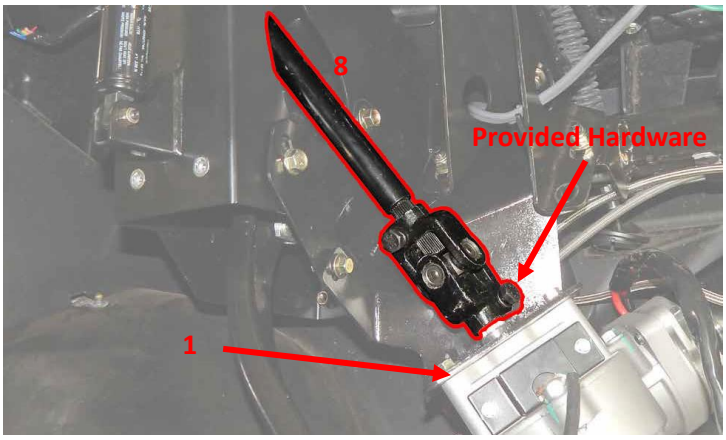


Unit A, 25 East Pearce St. Richmond Hill, ON. L4B 2M9 T: 905-881-9510 E: pdisales@pdintl.ca

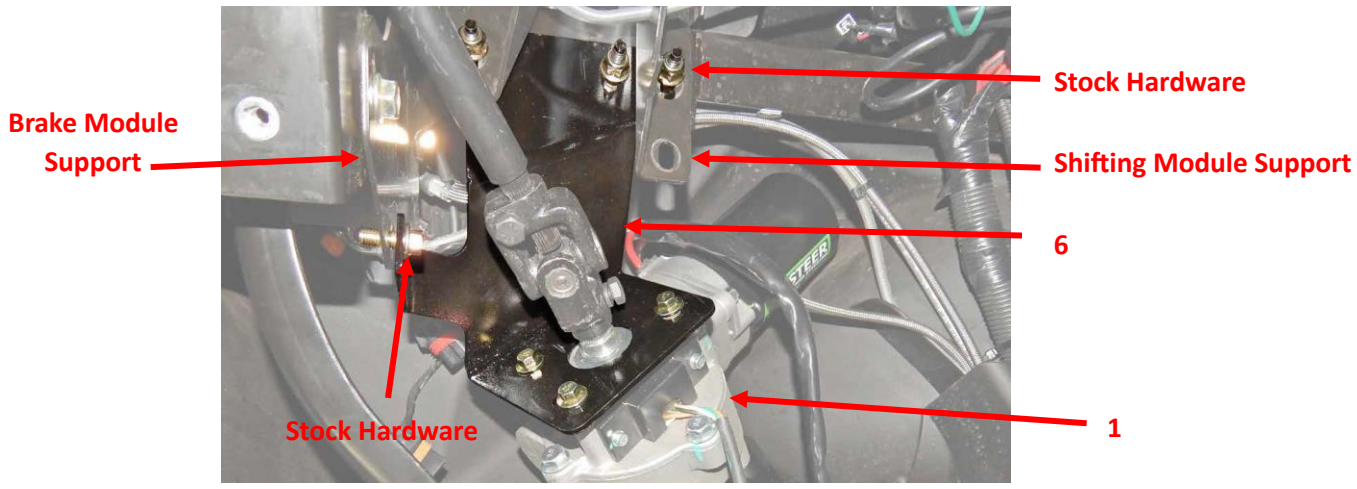
Step 3 Install the lower shaft (7) onto the motor (1) using the provide hardware. Attach the motor (1) and motor mount support (5) onto the DPS support using the stock hardware.



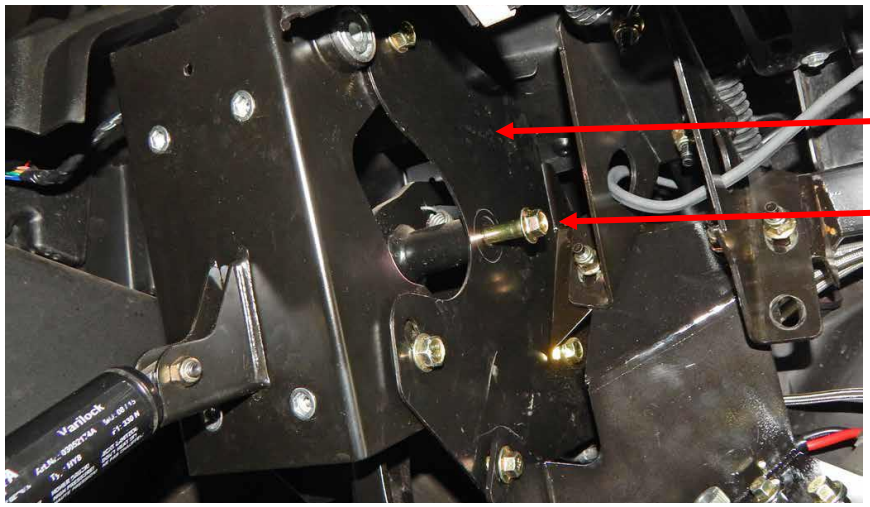
Step 4 Install the upper shaft (8) onto the motor (1) using the provided hardware.



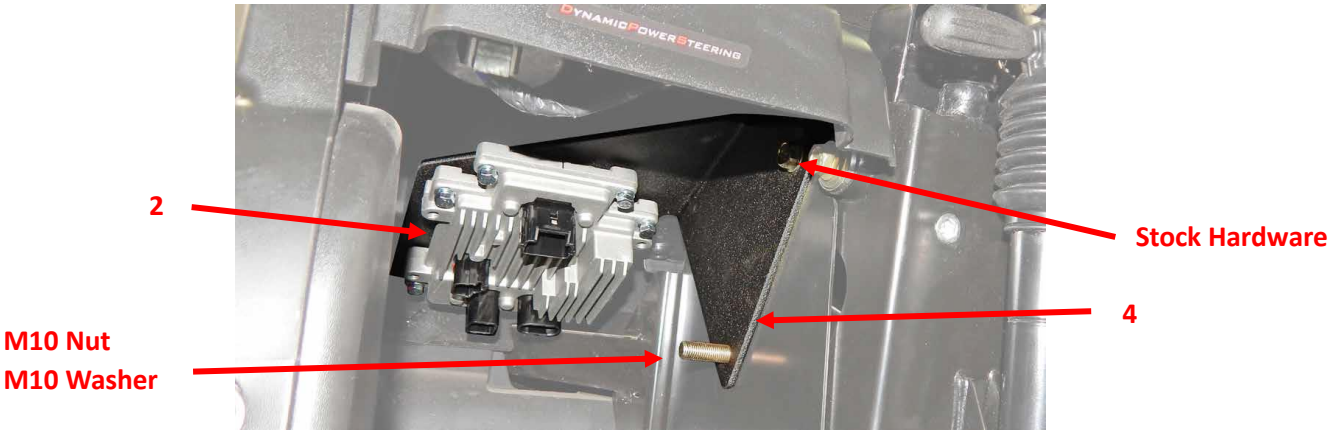
Step 5 Install the motor mount (6) onto the motor (1). Then, secure the motor mount (6) onto the brake module support.



Step 6 Install the hardware in the image below through the brake module support. (The upper shaft (8) is not shown in the image for clarity purposes.)



Step 7 Install the ECU (2) and ECU mount (4) using the hardware shown in the image below.



Step 8 Tighten all hardware completely and reinstall the dash, steering wheel, and all other required stock components.

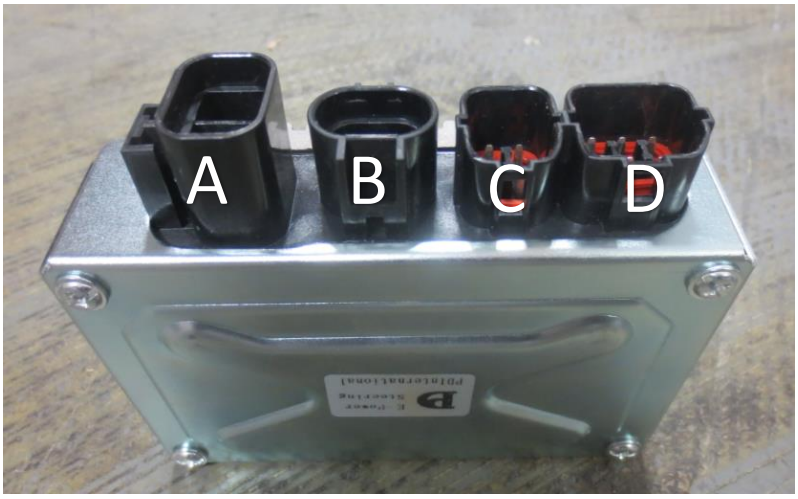
Wiring Procedure

Step 1: Connect the red wire to positive (+) side of battery.

Step 2: Connect the black wire to the ground source on the frame between a bolt and frame. (Must be a metal to metal connection, must be conductive.)

Step 3: Connect White Wire to power source (12V) only when the ignition is turned on. Do not use any wire that has constant power when the ignition is not on. Use a test light or multimeter to test the wires, test the wire under the dashboard until you find the switched power source.

Step 4: Use the connector to make the connections without cutting the power source wire.



ECU Reference

Plug	*Function*
A	**Motor**
B	**Power**
C	**Switched 12V Source**
D	**Torque Sensor**

Electronic Fault Diagnosis Table

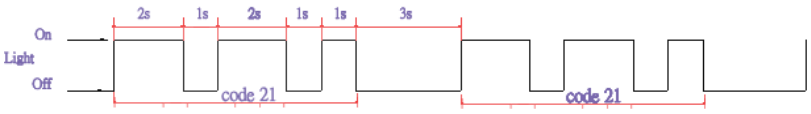
Start the vehicle and view the LED Diagnostic Light, the light should turn on for one second then turn off, if the light remains on you have an incorrect connection in the system, please consult Electronic Fault Diagnosis Table.

If there is a malfunction with an electronic part, the system will create a code to identify the problem. Each fault codes displays by a series of flashes with a fault light. Fault codes show with a light.

Every fault code is composed of double digits, each double digits is indicated by a series of long and short flashes of light. Each long flash represents a tens digit and is 2 seconds in length and each short flash represents a single digit and is 1 seconds in length .There will be a 3 seconds space between the long flashes and the short flashes.

For example: long flash\long flash \space\short flash represents the code number 21.

Example:



Code	Diagnosis content	fault code wave	Suggestion
21	Main torque sensor disconnection		1.Check sensor wiring harness 2.Replace ECU
22	Main torque sensor output error(voltage is too high or low)		
23	Vice torque sensor disconnected		
24	Vice torque sensor output error(voltage is too high or low)		
25	Main and vice torque difference is too large		
26	Main torque sensor inner fault		Replace ECU
35	Current sensor zero offset is too large		
32	Motor disconnected		Re-insert wire of the motor
33	Current of ECU is over the limit		Replace ECU
34	One side of motor has no assistance		
36	Motor voltage abnormal		1.Check motor wire 2.Check motor plug

Unit A, 25 East Pearce St. Richmond Hill, ON. L4B 2M9 T: 905-881-9510 E: pdisales@pdintl.ca

System Trouble Shooting

No.	Failure Encountered	Probable Reason	Troubleshooting
1	Steering without assistance	1、connectors of wire have bad contact 2、The fuse is burnt out 3、Relay damage 4、Thecontroller、motor or sensor is damaged	1、Check whether wire connectors are fully inserted 2、Replace the fuse（30A） 3、Replace the relay 4、Reback the motor or the sensor
2	Power is not the same for left and right	1、The median output voltage has deviation 2、controller、motor or sensor is damaged	1、Disconnect motor connectors, loosen the sensor adjustment screw, adjust the sensor position to keep the voltage in 1.65V ± 0.05V 2、Contact with suppliers and replace it
3	when system is on, the steering wheel swings on both sides	1、Motor is mounted backwards 2、controller or sensor is damaged	1、Exchange the position of（thick line）red line and black line at the motor terminal 2、Contact with suppliers and replace it
4.	Steering becomes heavy	1.Battery power loss 2.Motor damage (power reduction) 3. Air pressure of the tires (front) is insufficient.	1、Charge battery 2、Contact with suppliers and replace it 3、Inflate tires
5	System has noise	1、Motor damaged 2、Gap of lower steering shaft assembly or mechanical steering assembly is too large 3、Installation of lower steering shaft assembly or mechanical steering assembly loose	1、Replace motor 2、Replace Assembly 3、Check whether the installation screw is tight, adjust.

System Cautions

Electric power steering is a system which highly precision, sensitive and energy-saving, environmental protection and high-performance. In order to ensure the performance of the steering system, and improve the life of the steering system, we must insist on strict compliance with the following rules:

1. Do not dismantle the control box because you may change the parameters of the sensors and create an imbalance between the power to the right and left steering.
2. Maintain a good battery, loss of battery power will result in heavy steering.
3. Pack all electrical connections with dielectric grease where possible to help against corrosion especially in damp humid conditions.
4. Do not tap into the EPS electrical harness for any other aftermarket components. This will affect the power supply to the system and create problems.
5. Connector of the system must be in good contact: avoid laying connectors in damp, high temperature environment to ensure its good conductive.
6. The controller must not be near high temperatures and protected from moisture.
7. When steering your machine and reaching maximum turn angle, do not hold that maximum position for longer than 3 seconds to ensure you do not overheat the electric motor and controller.
8. When motor is working, you must not insert or extract the connector of controller, motor and sensor to protect them from its shocks of the current.