



## 2017-2021 Maverick X3 850W Magneto

SKU'S: 804FC0109

The following symbols may be used in this document:



**WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION:** Indicates a hazard situation which, if not avoided, could result in minor or moderate injury.

**NOTICE** Indicates an instruction which, if not followed, could severely damage vehicle components or other property.



**WARNING**

- For safety reasons, this kit must be installed by an authorized BRP dealer.
  - This kit is designed for specific applicable models only (authorized BRP dealers will confirm model(s)). It is not recommended for units other than the one (those) for which it was sold.
  - Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly / assembly, always replace with a new one.
  - Torque wrench tightening specifications must strictly be adhered to.
  - Always wear EYE PROTECTION AND APPROPRIATE GLOVES when using power tools.
  - Unless otherwise specified, engine must be OFF when performing any operation on the vehicle.
  - Always be aware of parts that can move, such as wheels, transmission components, etc.
- NOTE: USE TIGHTENING TORQUES IN THE FOLLOWING TABLE IF NOT OTHERWISE SPECIFIED.

**GRADE**

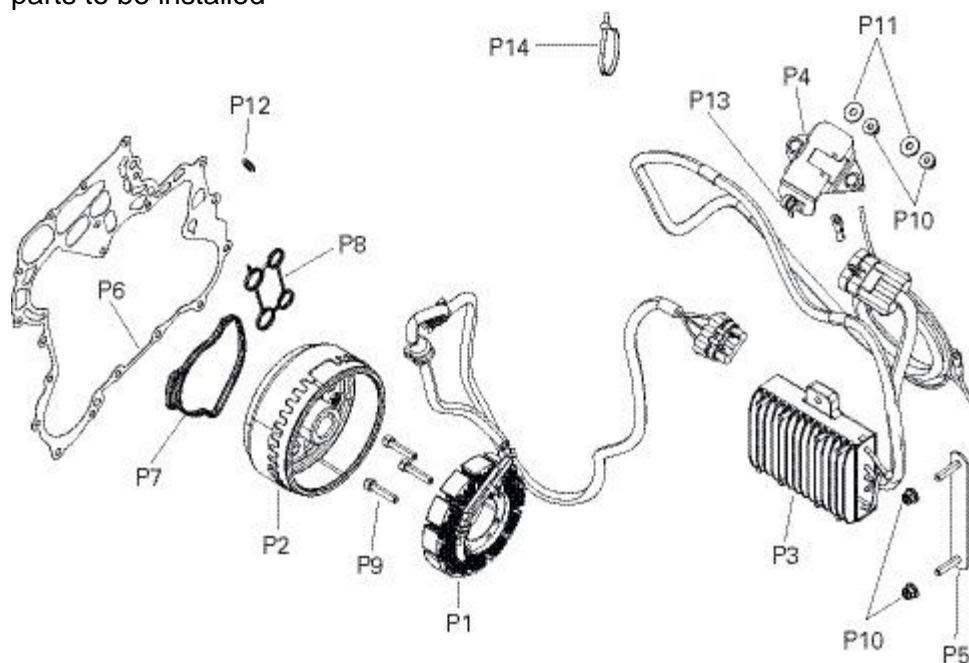
	5.8	8.8	10.9	12.9
M4	1.8 ± 0.2 N•m (16 ± 2 lbf•in)	2.8 ± 0.2 N•m (25 ± 2 lbf•in)	3.8 ± 0.2 N•m (34 ± 2 lbf•in)	4.5 ± 0.5 N•m (40 ± 4 lbf•in)
M5	3.3 ± 0.2 N•m (29 ± 2 lbf•in)	5 ± 0.5 N•m (44 ± 4 lbf•in)	7.8 ± 0.7 N•m (69 ± 6 lbf•in)	9 ± 1 N•m (80 ± 9 lbf•in)
M6	7.5 ± 1 N•m (66 ± 9 lbf•in)	10 ± 2 N•m (89 ± 18 lbf•in)	12.8 ± 2.2 N•m (113 ± 19 lbf•in)	16 ± 2 N•m (142 ± 18 lbf•in)
M8	15.3 ± 1.7 N•m (135 ± 15 lbf•in)	24.5 ± 3.5 N•m (18 ± 3 lbf•ft)	31.5 ± 3.5 N•m (23 ± 3 lbf•ft)	40 ± 5 N•m (30 ± 4 lbf•ft)
M10	29 ± 3 N•m (21 ± 2 lbf•ft)	48 ± 6 N•m (35 ± 4 lbf•ft)	61 ± 9 N•m (45 ± 7 lbf•ft)	73 ± 7 N•m (54 ± 5 lbf•ft)
M12	52 ± 6 N•m (38 ± 4 lbf•ft)	85 ± 10 N•m (63 ± 7 lbf•ft)	105 ± 15 N•m (77 ± 11 lbf•ft)	128 ± 17 N•m (94 ± 13 lbf•ft)

M14	85 ± 10 N•m (63 ± 7 lbf•ft)	135 ± 15 N•m (100 ± 11 lbf•ft)	170 ± 20 N•m (125 ± 15 lbf•ft)	200 ± 25 N•m (148 ± 18 lbf•ft)
M16	126 ± 14 N•m (93 ± 10 lbf•ft)	205 ± 25 N•m (151 ± 18 lbf•ft)	255 ± 30 N•m (188 ± 22 lbf•ft)	305 ± 35 N•m (225 ± 26 lbf•ft)
M18	170 ± 20 N•m (125 ± 15 lbf•ft)	273 ± 32 N•m (201 ± 24 lbf•ft)	330 ± 25 N•m (243 ± 18 lbf•ft)	413 ± 47 N•m (305 ± 35 lbf•ft)

The illustrations in this document show typical construction of the different assemblies and may not reproduce the full detail or exact shape of the parts; however, they represent parts that have the same or similar function.

Installation time is approximately 2.5 hours.

parts to be installed



ITEM	DESCRIPTION	Part number	QTY
P1	850W Rotor ass'y	420686194	1
P2	Stator plate	420686363	1
P3	Voltage Regulator	710006824	1
P4	Cable Support	710007104	1
P5	Voltage Regulator Support	710006987	1
P6	Gasket (magneto)	420431640	1
P7	Gasket (water pump)	420431682	1
P8	Gasket (oil cooler)	420431870	1



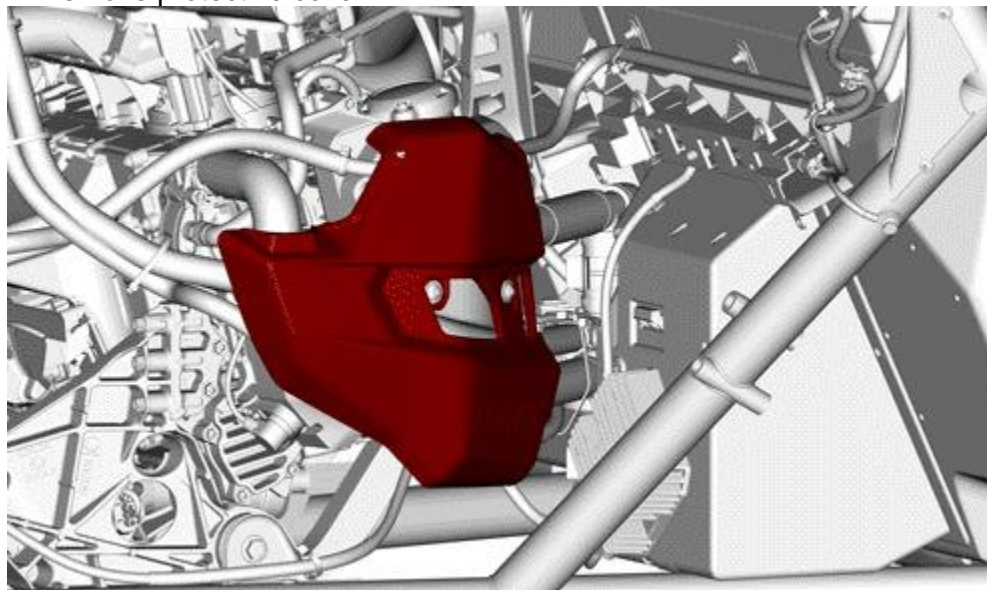
P9	M6 X 30 Socket Head Screw	205063044	3
P10	M6 Elastic Nut	233261414	4
P11	M6 Flat Washer	234062670	2
P12	7603 DIN Washer	504082900	1
P13	173 mm Locking Tie	293750009	5
P14	371 mm Locking Tie	293750018	20

instructions

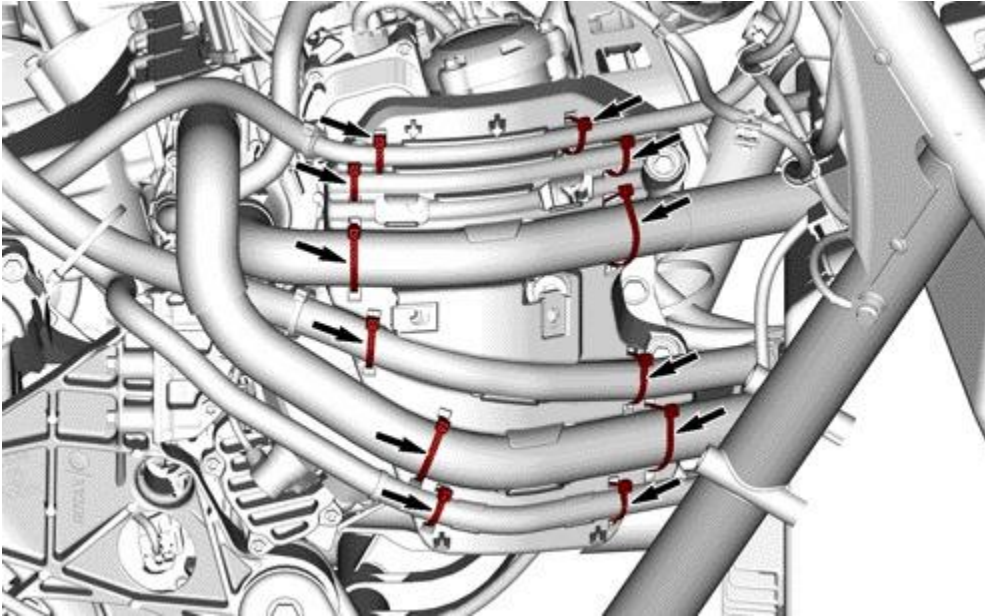
Vehicle Preparation

Removing Magneto Cover

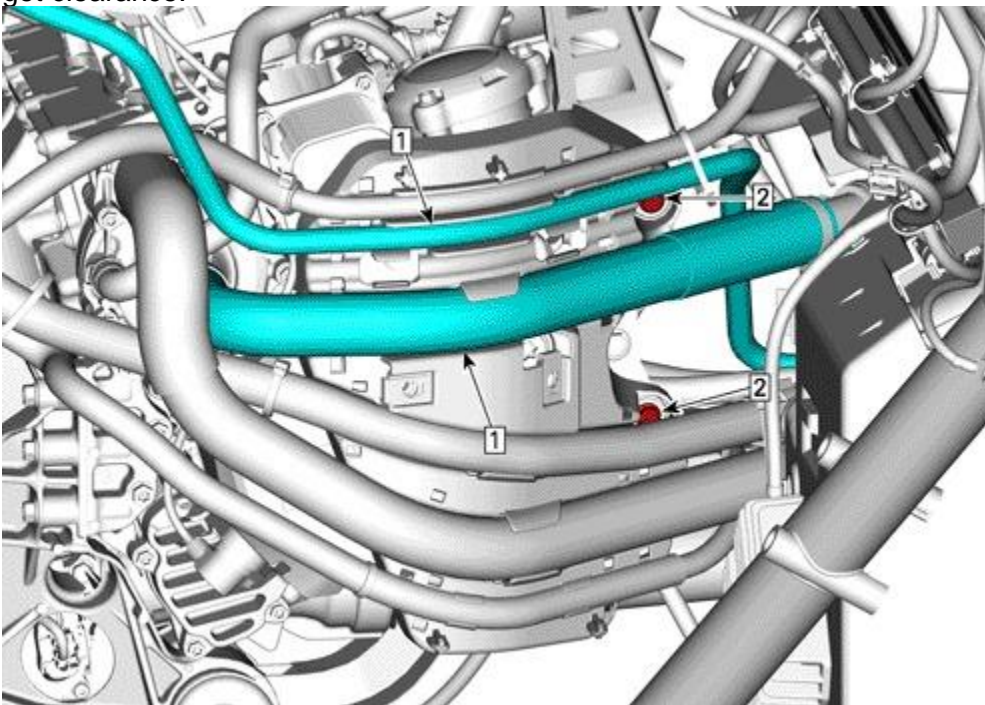
1. Drain engine oil.
2. Remove protective cover.



3. Cut all locking ties securing hoses on the hoses support.

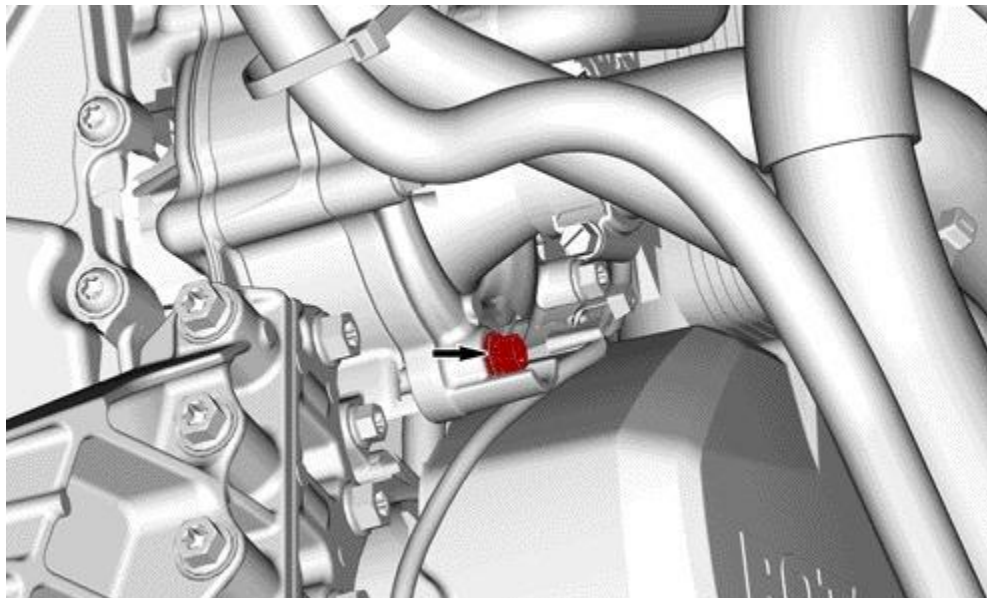


4. Move fuel and coolant hoses aside, no need to disconnect them as they are long enough to get clearance.

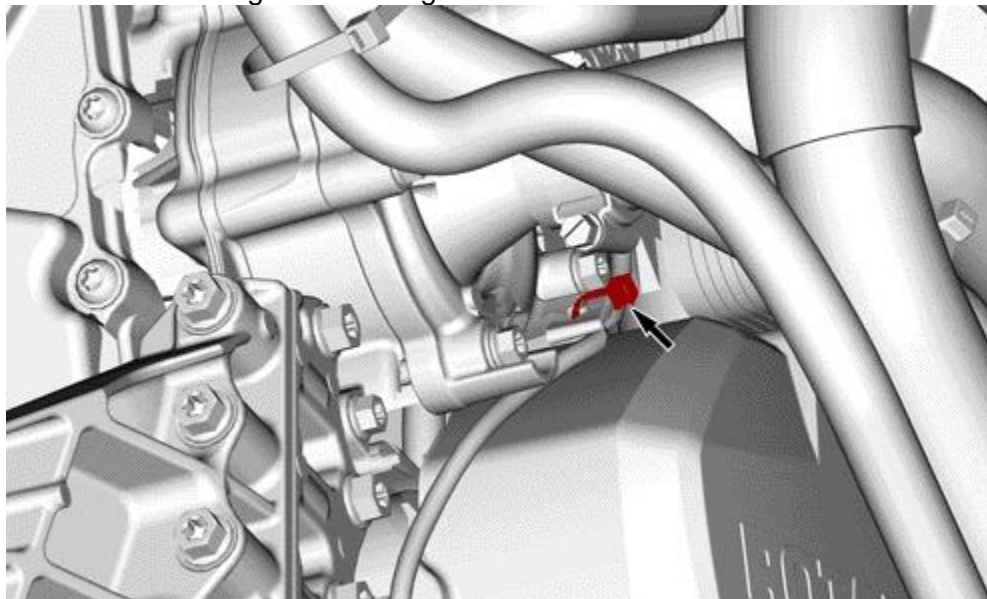


5. Remove hose support.

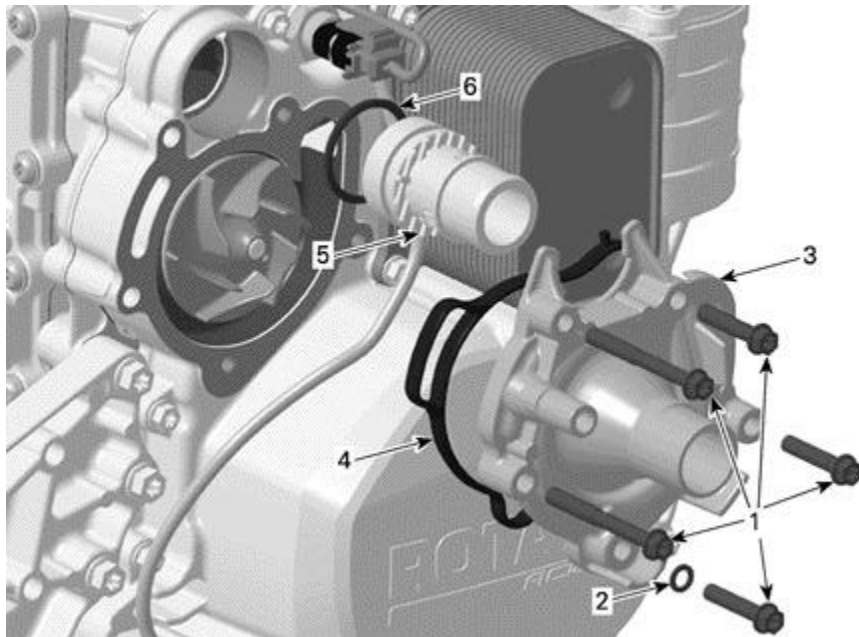
6. Drain coolant by removing the lowest water pump screw. Discard sealing washer.



7. Disconnect outlet hose from thermostat housing.
8. Disconnect inlet hose from water pump housing.
9. Disconnect turbocharger inlet hose from water pump housing. Discard clamp.
10. Remove locking ties securing CPS wire.

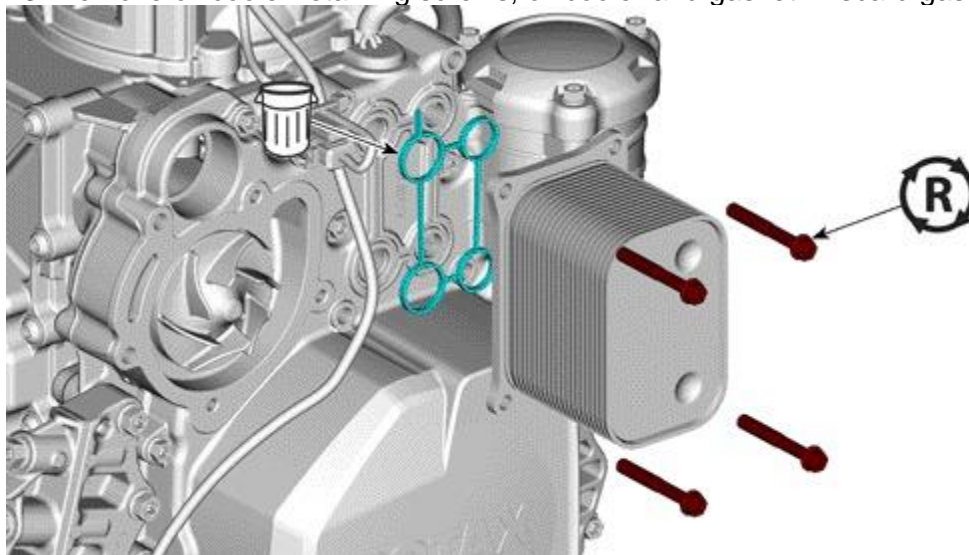


11. Remove water pump housing retaining screws.
12. Remove water pump housing with thermostat cover from magneto cover.

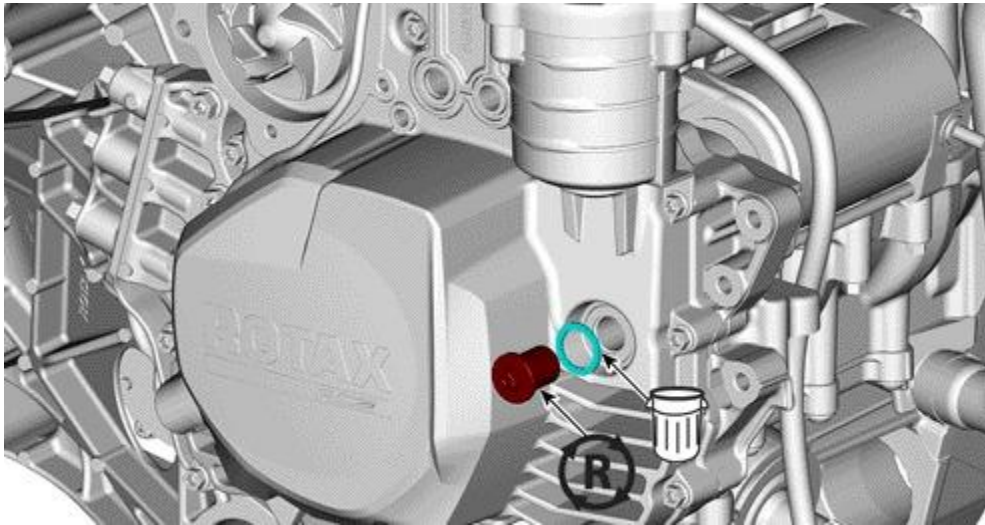


1. Retaining screws
2. Sealing washer
3. Housing
4. Gasket
5. Thermostat cover
6. O-ring

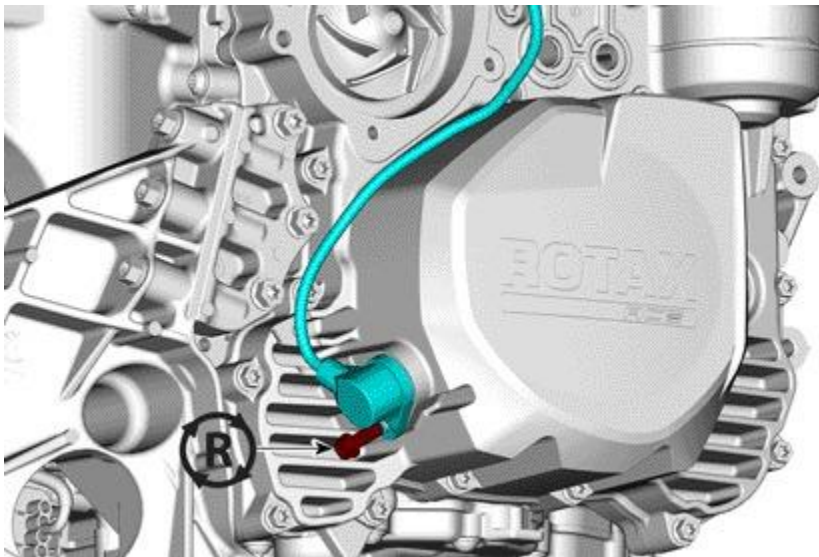
13. Remove oil cooler retaining screws, oil cooler and gasket. Discard gasket.



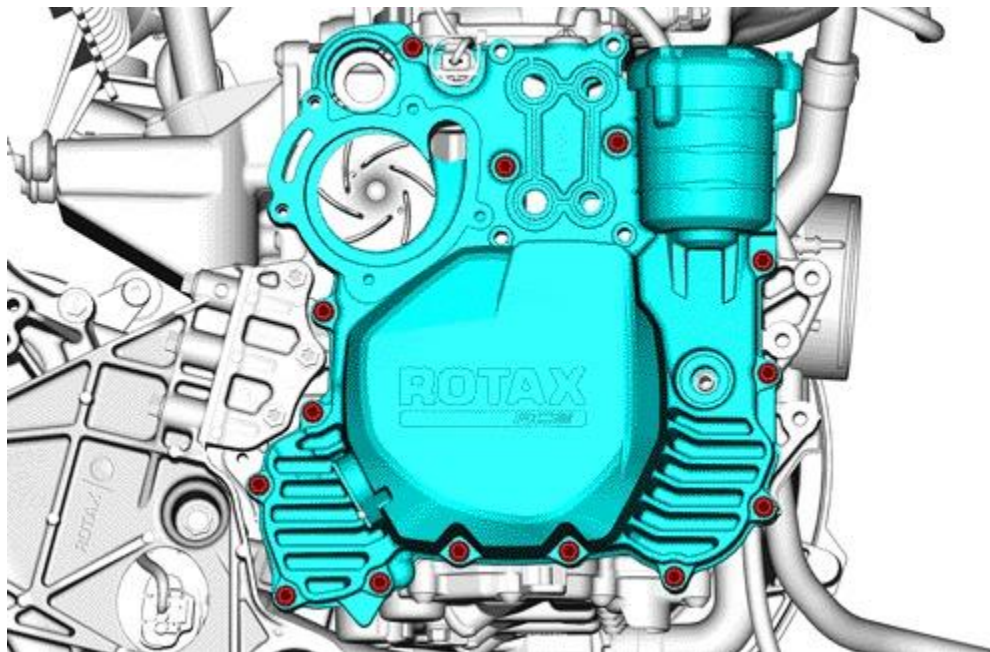
14. Pull oil pressure regulator parts from magneto cover by removing regulator plug and washer. Discard sealing washer.



15. Remove CPS.



16. Remove magneto cover retaining screws.



17. Place an oil pan under magneto area to catch remaining oil.
18. Remove magneto cover.

#### Removing the Stator

1. Remove and discard stator retaining screws.



2. Remove stator.

#### Removing the Rotor

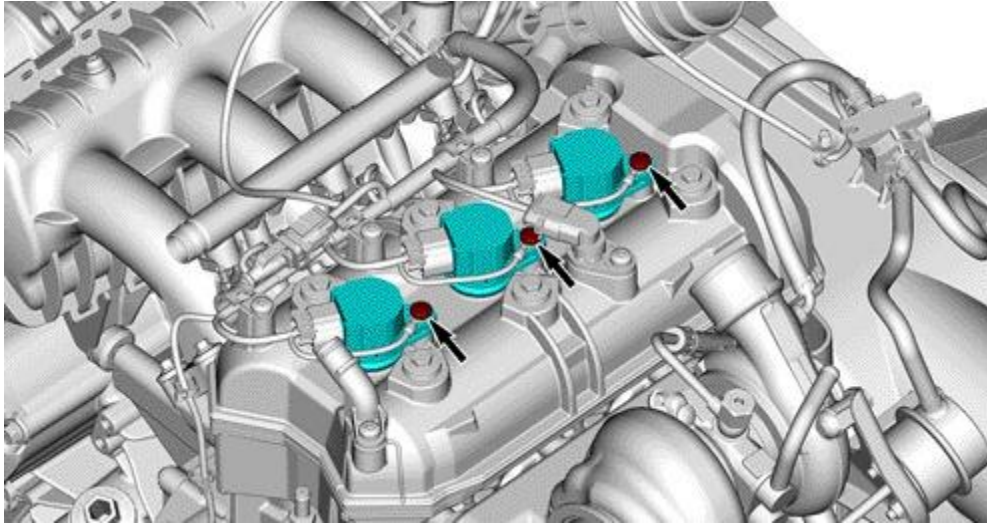
Perform the crankshaft locking procedure:

NOTE: When crankshaft is locked, the cylinder no. 2 is at TDC.

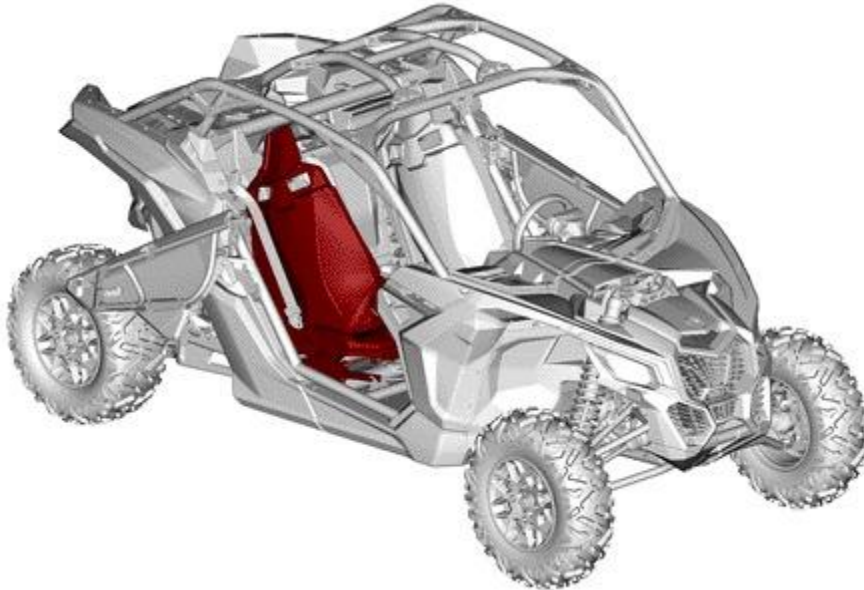
NOTICE Crankshaft must be locked whenever the magneto rotor retaining nut has to be removed.

1. Remove ignition coils by removing the retaining screws.

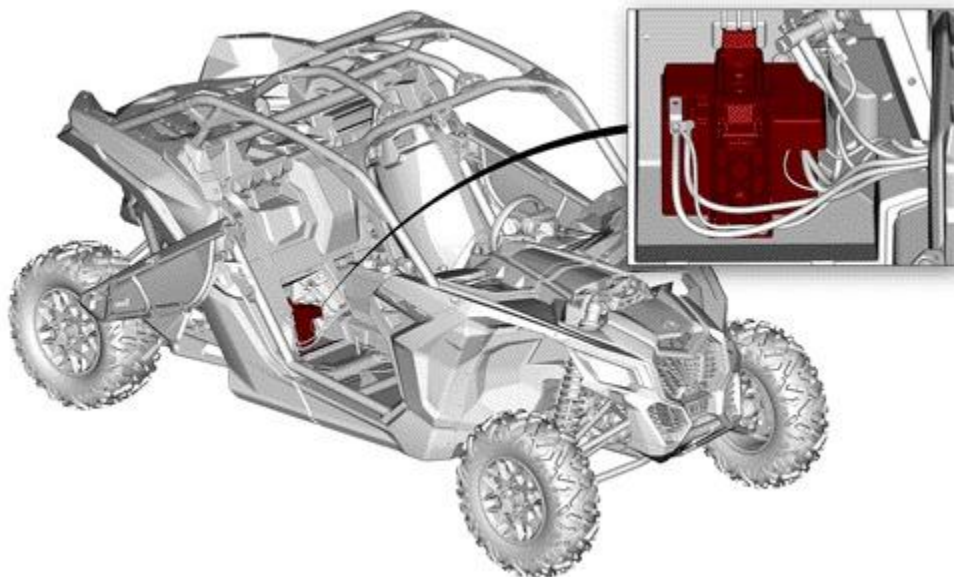




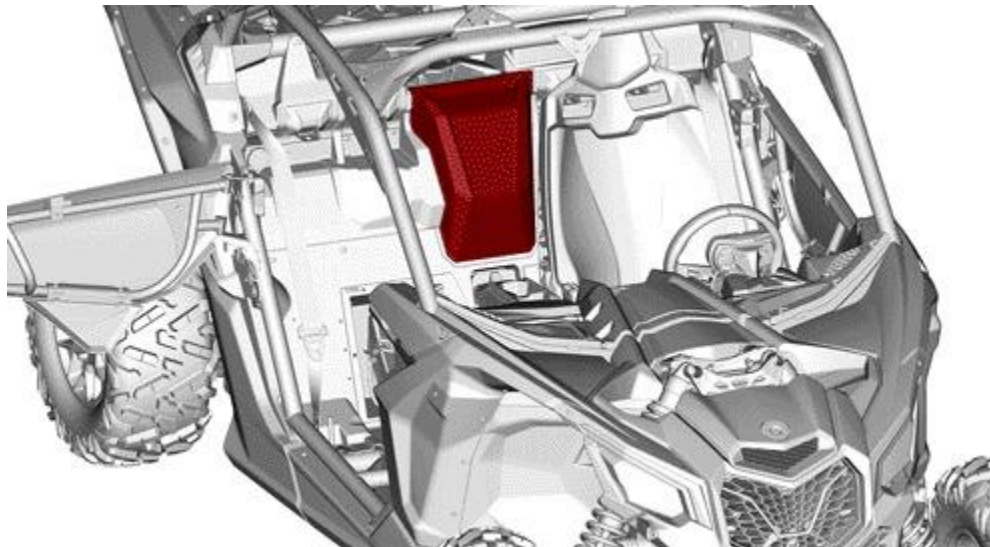
2. Blow compressed air into spark plug holes.
3. Remove spark plugs.
4. Remove the passenger seat.



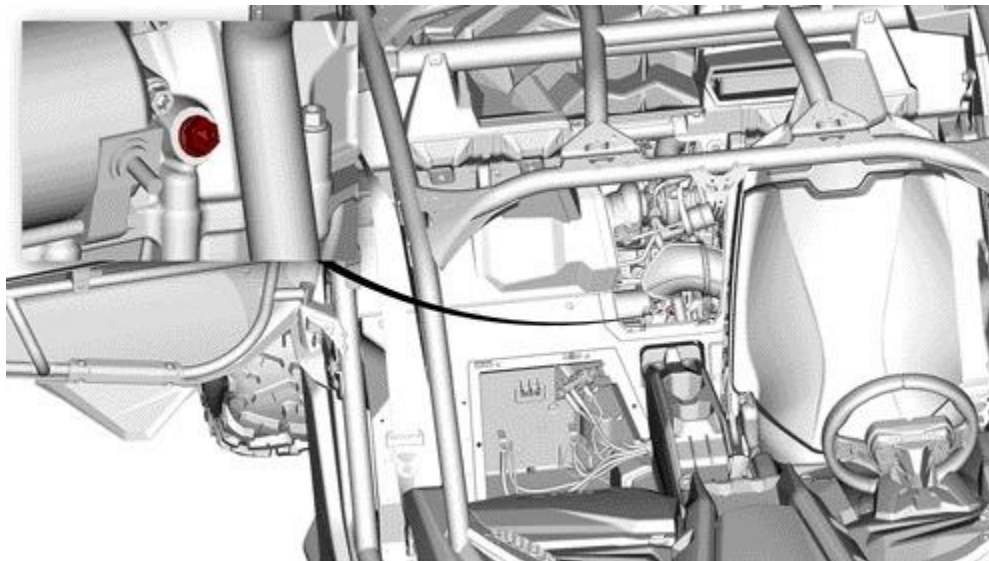
5. Remove the battery.



6. Remove Rear Service Cover.



7. Remove and keep crankshaft access plug, discard gasket ring.



8. Rotate the crankshaft by rotating the magneto bolt clockwise until the locking position is reached.

NOTE: Having someone to look through the crankshaft access hole to know when the locking hole is aligned with the access hole will greatly help.

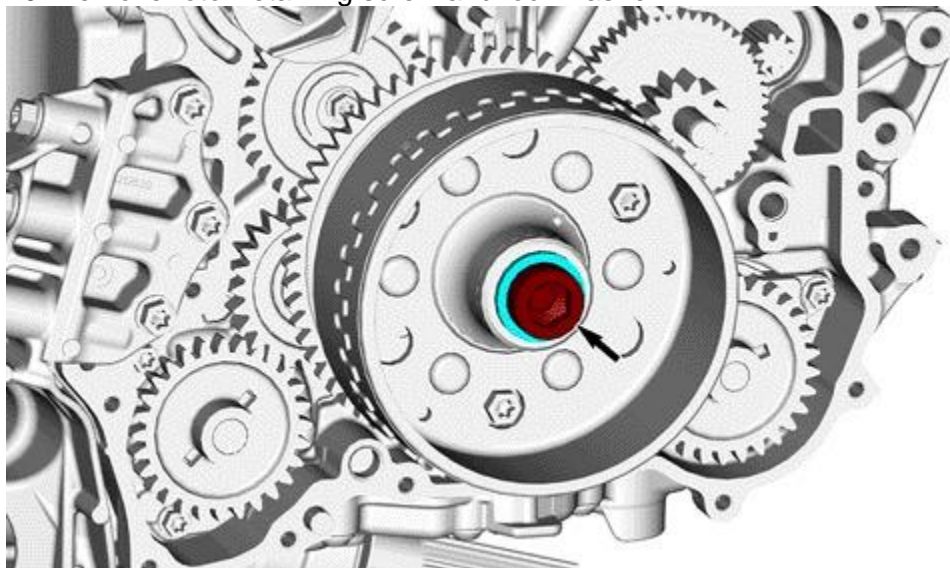
9. Lock crankshaft using the crankshaft locking tool.

**required tool**

CRANKSHAFT LOCKING TOOL (P/N 529 036 272)



10. Remove rotor retaining screw and lock washer.



11. Install crankshaft protector and flywheel puller.

**required tools**

CRANKSHAFT PROTECTOR (P/N 529 036 213)



FLYWHEEL PULLER (P/N 420 976 235)



NOTE: Apply some grease on the crankshaft protector surface to ease puller operation.



1. Rotor
2. Flywheel puller screw

**Parts Installation  
Rotor and Stator**

The installation of the rotor [P1] is the reverse of the removal procedure. However, pay attention to the following.

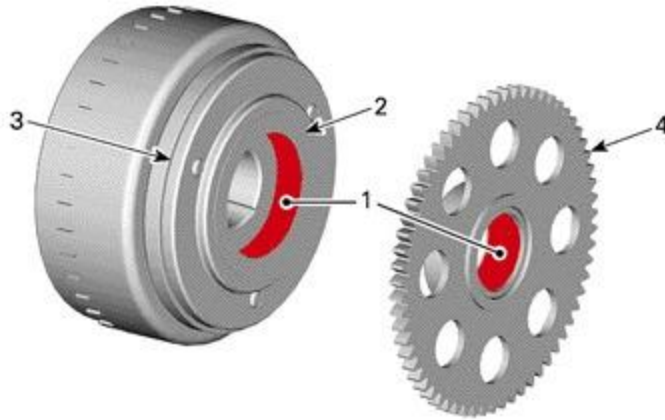
Blow the oil passage in the magneto hub using compressed air, ensure it is not clogged.

Using the recommended service product, clean:

- The oil passage
- The crankshaft thread
- The crankshaft taper
- The rotor taper.

**service product****CLUTCH AND PULLEY FLANGE CLEANER PRO S1 (P/N 779244)**

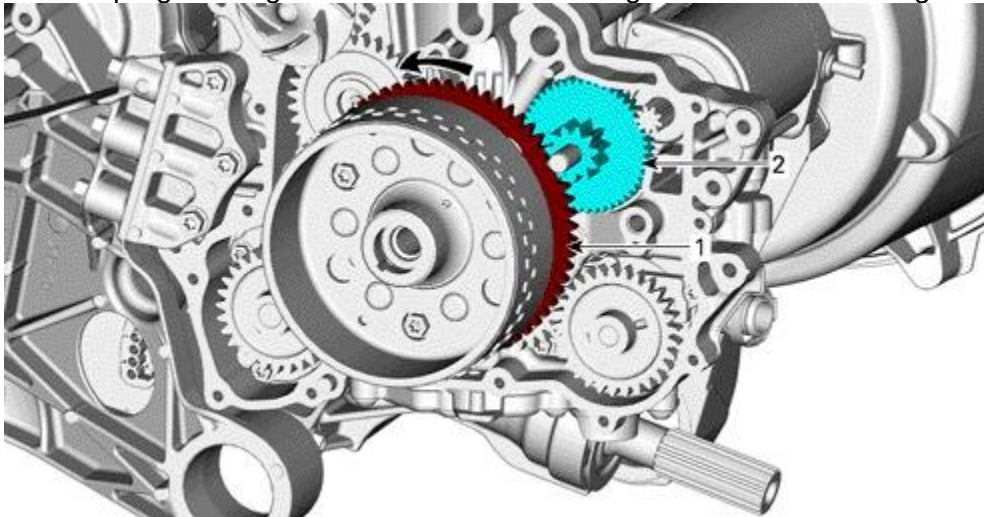
**NOTICE** Taper on crankshaft and rotor must be free of grease.  
Apply engine oil on sprag clutch and needle bearing.  
Install sprag clutch gear onto rotor [P1].



1. Apply engine oil here
2. Sprag clutch
3. Sprag clutch housing
4. Sprag clutch gear

Slide rotor [P1] along with the sprag clutch gear onto crankshaft. The Woodruff key and keyway must be aligned.

Rotate sprag clutch gear counterclockwise to align with starter double gear.



1. Sprag clutch gear
2. Starter double gear

Remove all the old Loctite on the previously removed M16 x 35 retaining screw.  
Apply Loctite on M16 x 35 screw.

Install washer and retaining screw. Tighten to specification.

**tightening torque**

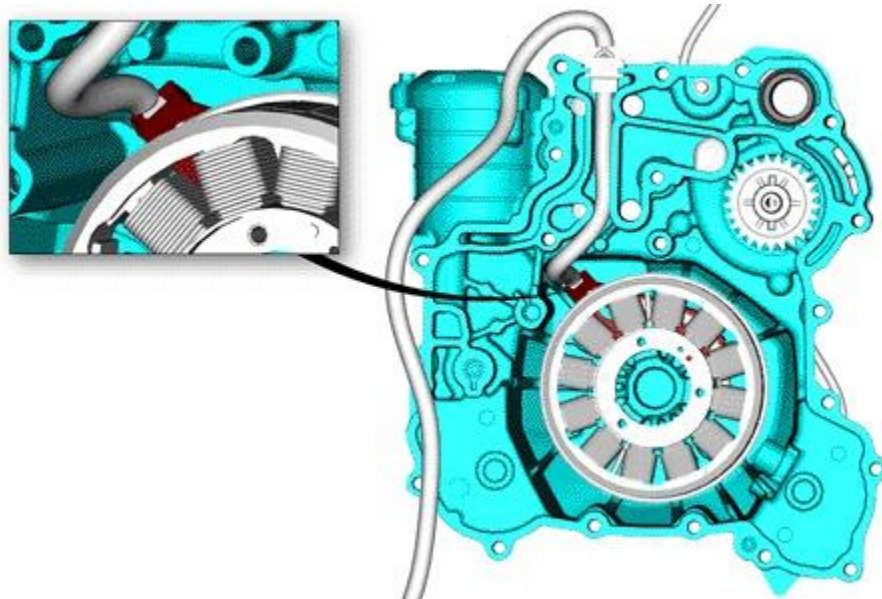
M16 x 35 screw

LOCTITE 243 (BLUE) (P/N 293 800 060)

+

$150 \pm 10$  N•m ( $111 \pm 7$  lbf•ft)

Ensure that the stator plate [P2] cable is underneath the cable holder during installation of the stator.



Install the stator plate [P2] using M6 x 30 socket head screw [P9]. Tighten to specification.

**tightening torque**

M6 x 30 screw [P9]

LOCTITE 243 (BLUE) (P/N 293 800 060)

+

$9 \pm 1$  N•m ( $80 \pm 9$  lbf•in)



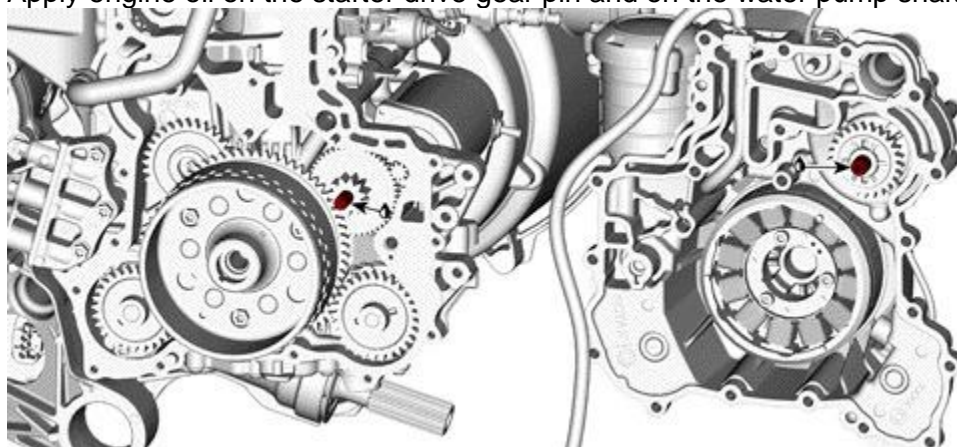
Clean magneto cover.

**service product**

LOCTITE CHISEL (GASKET REMOVER) (P/N 413 708 500)

Ensure starter drive gear pin in place.

Apply engine oil on the starter drive gear pin and on the water pump shaft.

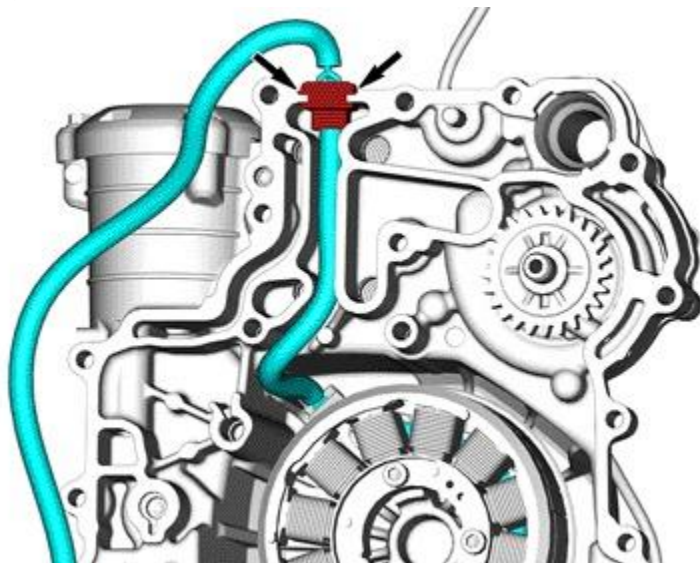


Apply Loctite 5910 into the groove of the grommet and insert harness into the channel and the grommet into its seat in the ignition cover. Slightly pull harness towards outside while holding the grommet.

**service product**

LOCTITE 5910 (P/N 293 800 081)

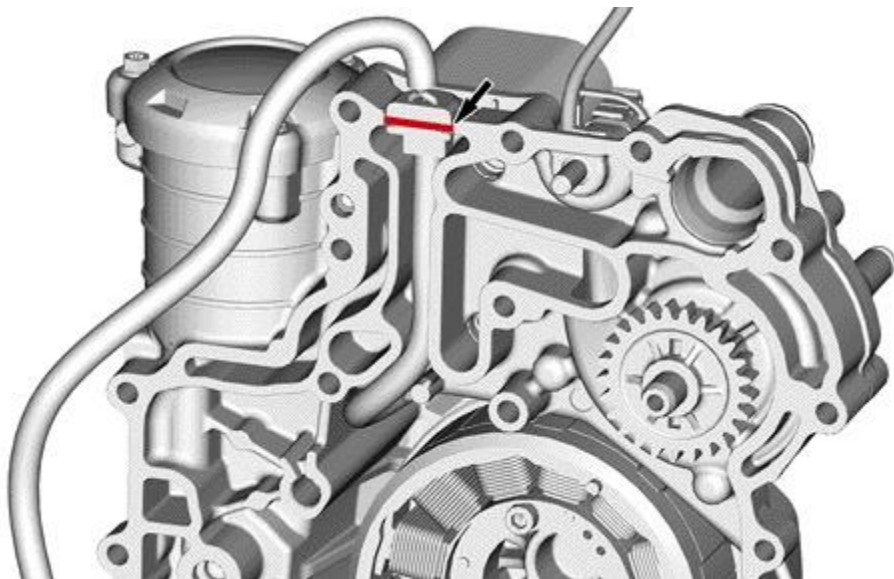
**NOTICE** Make sure that the stator cable harness is embedded into the channel. The part of the harness that is out of the channel must be tight, otherwise it might chafe or jam.



Apply Loctite 5910 onto the sealing surface of the grommet.

**service product**

LOCTITE 5910 (P/N 293 800 081)



Install a NEW magneto cover gasket [P6].

Carefully install magneto cover.



CAUTION: Magnetic force between magneto, flywheel and stator are very high. Avoid finger contusions.

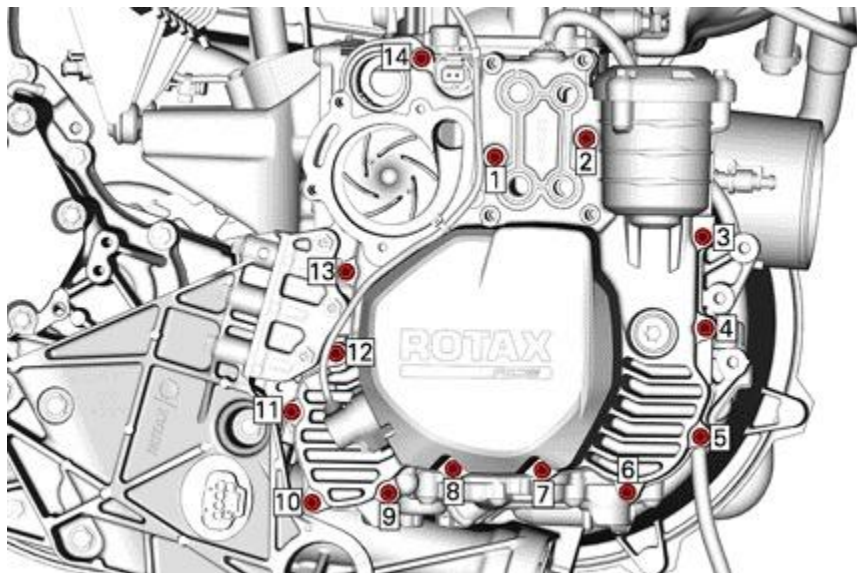
Tighten magneto cover screws according to the following sequence.

**tightening torque**

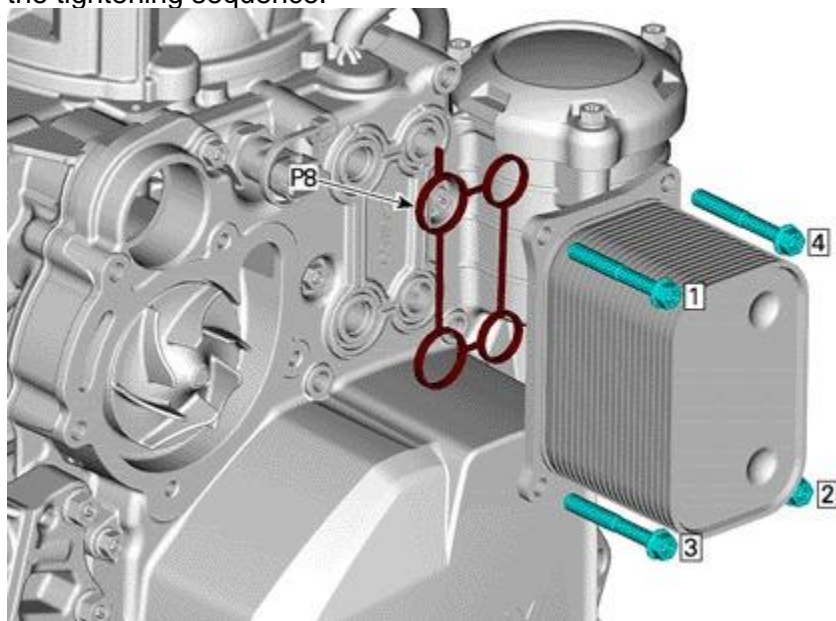
Magneto cover retaining screw

$9 \pm 1$  N•m (80  $\pm$  9 lbf•in)





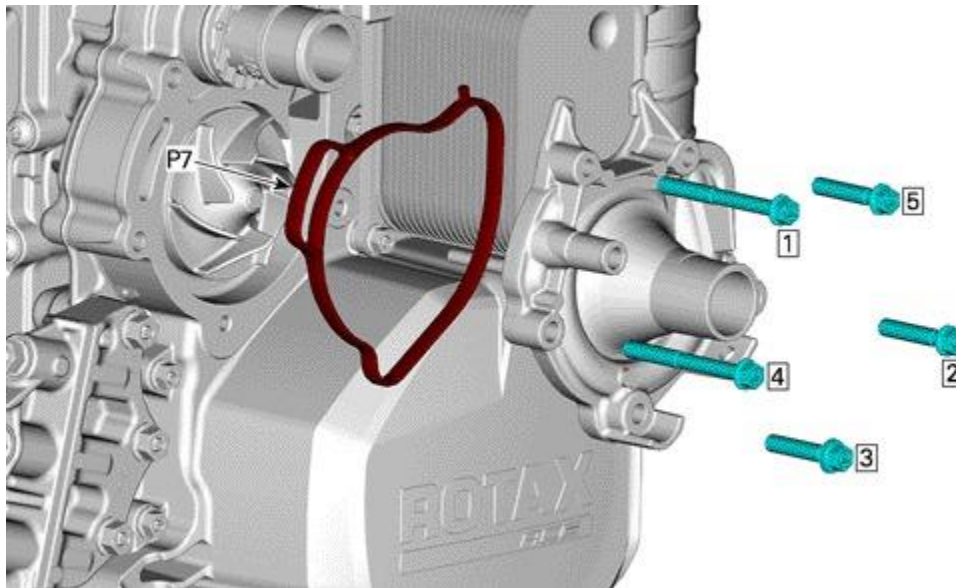
Reinstall the oil cooler with a new gasket [P8]. Tighten to specification in two steps by following the tightening sequence.



**tightening torque**

Oil cooler retaining screw	Step 1	$5 \pm 0.6 \text{ N}\cdot\text{m}$ ( $44 \pm 5 \text{ lbf}\cdot\text{in}$ )
	Step 2	$9 \pm 1 \text{ N}\cdot\text{m}$ ( $80 \pm 9 \text{ lbf}\cdot\text{in}$ )

Reinstall the water pump housing with a new gasket [P7]. Tighten retaining screws to specification as per the following procedure.



**tightening torque**

Water pump housing retaining screw

$9 \pm 1 \text{ N}\cdot\text{m}$  ( $80 \pm 9 \text{ lbf}\cdot\text{in}$ )

Unlock the crankshaft by removing the locking tool.

Install a new gasket ring on the plug screw.

Install the plug screw and tighten to specification.

**tightening torque**

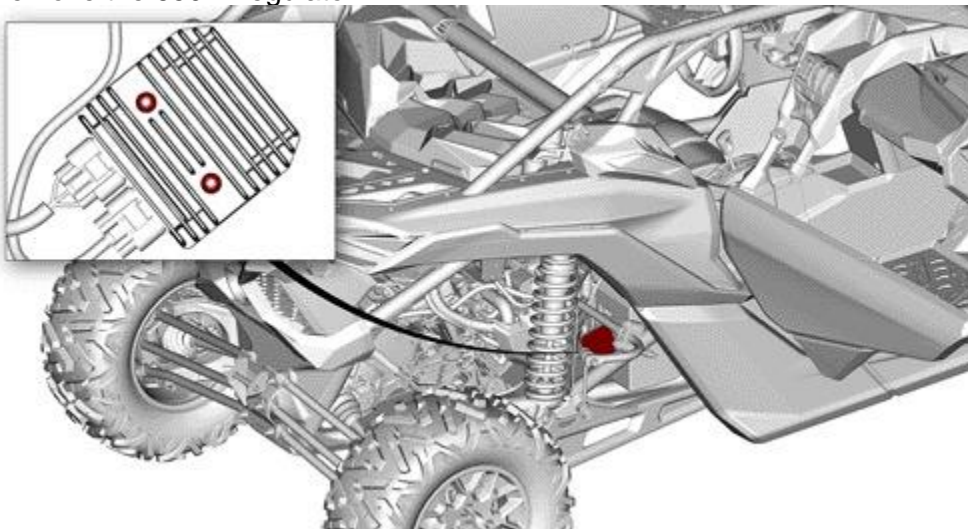
Plug screw

$10 \pm 1 \text{ N}\cdot\text{m}$  ( $89 \pm 9 \text{ lbf}\cdot\text{in}$ )

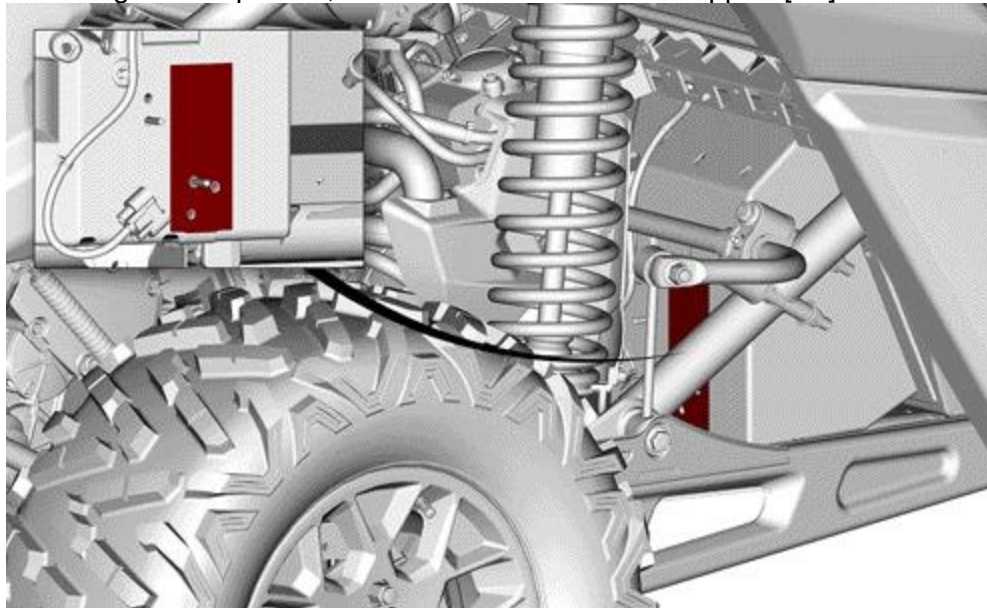
Voltage Regulator

NOTE: If a rear winch is installed, you will have to relocate the solenoid by following the original winch installation instructions.

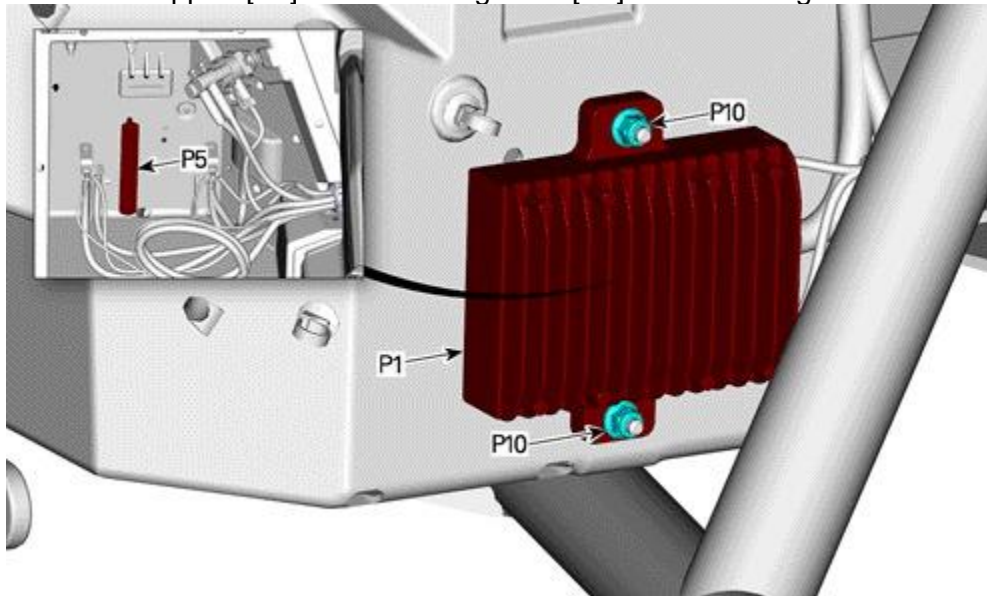
Remove the 650W regulator.



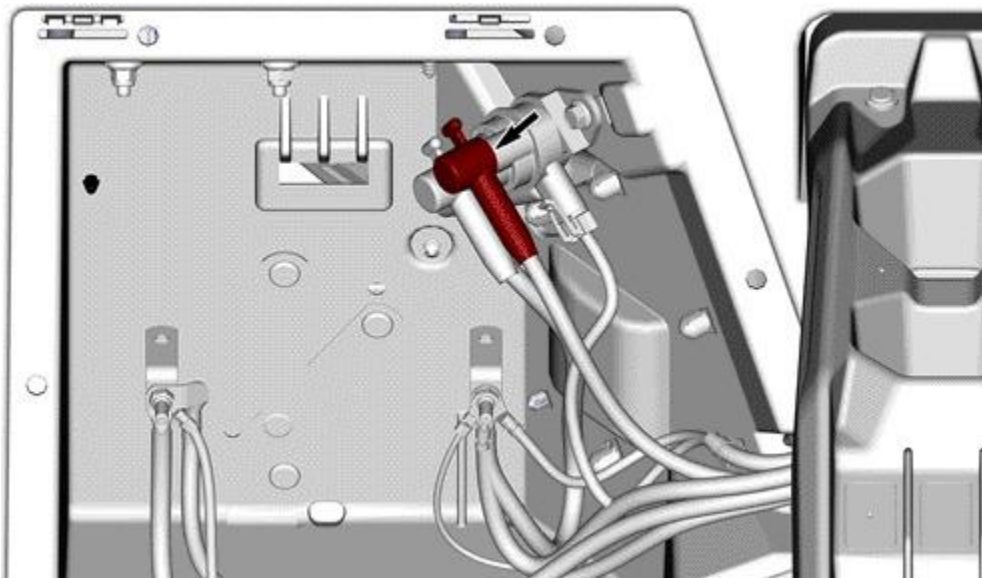
Following the template A, drill the holes for the new support [P5].



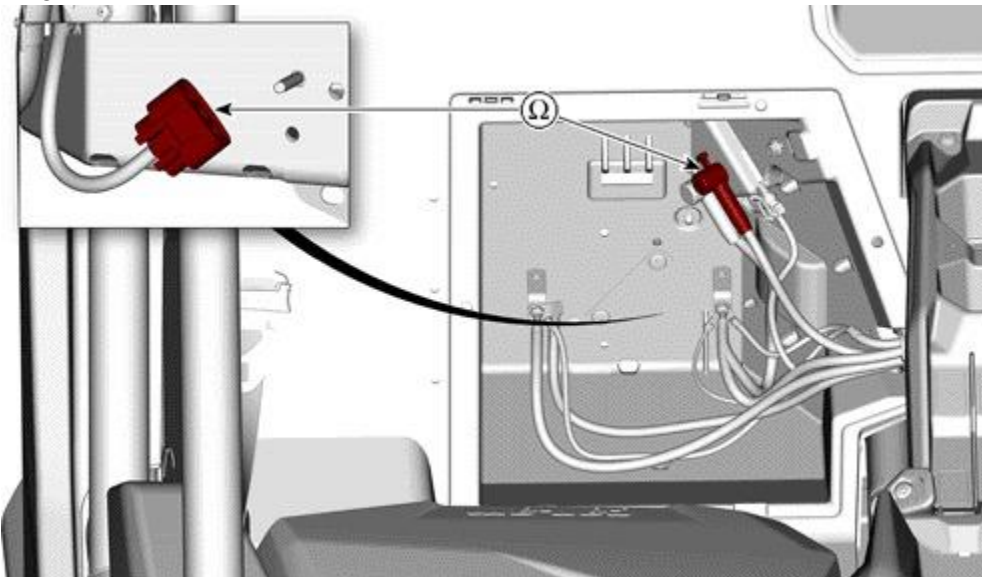
Install the support [P5] and 850W regulator [P3]. Secure using M6 elastic nut [P10].



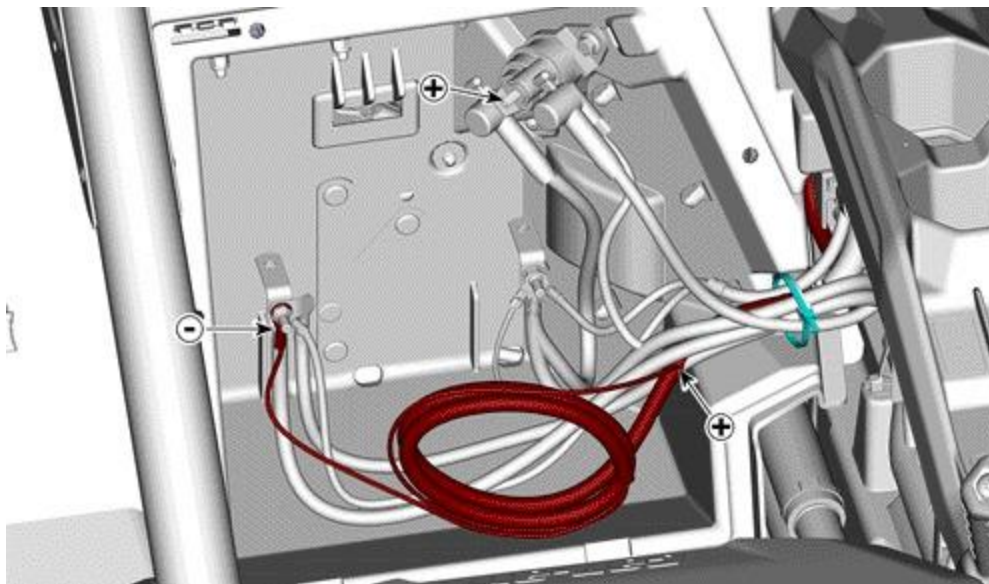
Remove the factory regulator positive wire (BK/YE) from the starter relay.



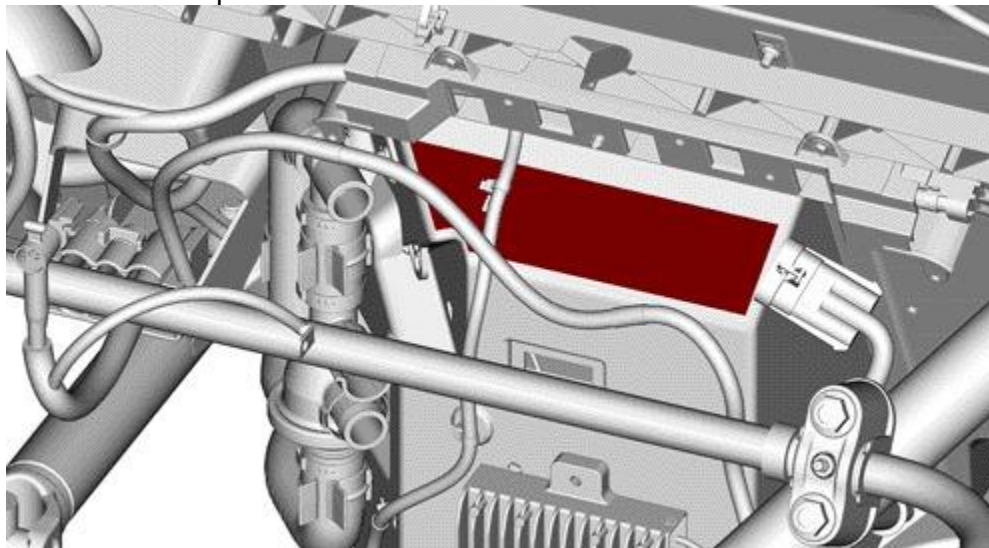
NOTE: Ensure to make a continuity test on the wire to ensure you removed the correct factory wire.



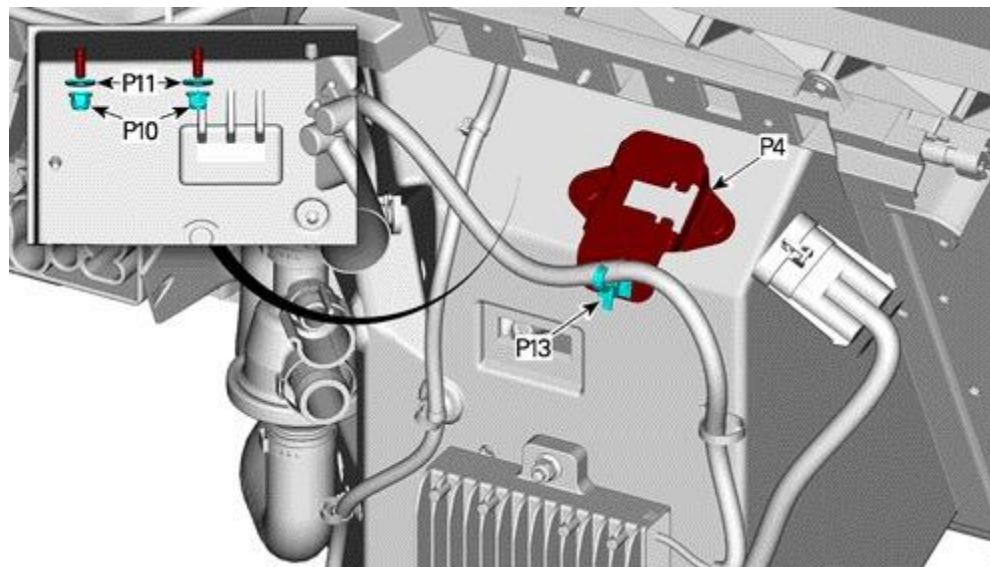
Connect the negative wire of the new regulator ([P3]) to the battery and the positive one on the starter relay.



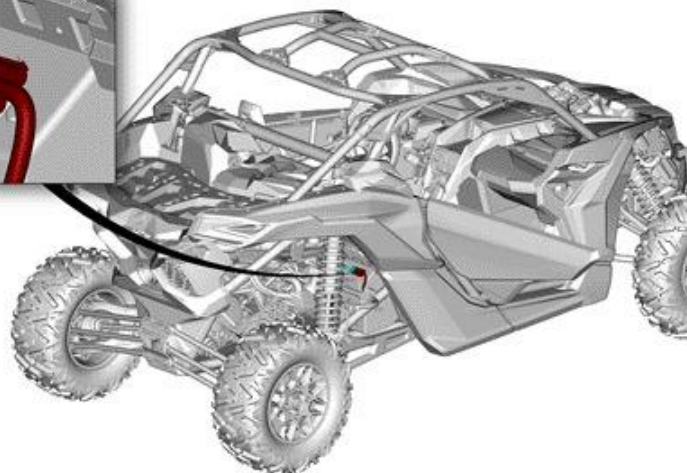
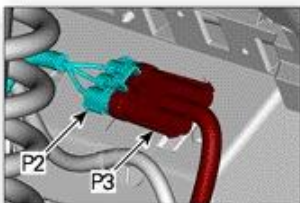
Position the template B and mark holes to drill.



Install the new connector support [P4] and secure using flat washers [P11] and M6 elastic nut [P10].



Put dielectric grease on the connector of the old regulator and tape it. Connect the regulator to the magneto.



Reinstall all the removed parts.

[Templates.pdf](#)



## INSTALLATION INSTRUCTIONS

Thank you for choosing Evolution Powersports products. If you require further assistance, please call our Tech Support @ (715) 247-3862

**Note:** This product is exempt from the emission standards and related requirements of 40 C.F.R. § 1051 as provided by 40 C.F.R. § 1051.620, and California law [e.g., vehicle code §§ 27156 and 38391]. This product is sold only for use in connection with EPA certified, purpose-built, nonroad vehicles used solely for closed course, nonroad competition/racing and not used for any recreational purpose or on public highways or right of ways maintained by and open to the public. This product is sold only in connection with machines that do not fall under state and/or federal noise or emission standards/regulations. Purchasers who/that purchase this product represent and warrant that the product is purchased only in connection with EPA -certified, emission-regulations-exempt and noise-regulations-exempt competition/racing vehicles as interpreted under applicable state and/or federal law. Questions: Call Evolution Powersports at (715) 247-3862.

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