



## SSV KIT - 850 W Magneto Kit

Product: **Side-by-side**

Project no: **487803394**

Instruction Sheet P/N: **487803394**

Revision no:

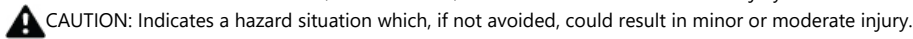
Revision date:

Item covered: **850 W Magneto Kit**

The following symbols may be used in this document:



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



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



- 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.
- If the installation of the kit requires a template, ensure template is to scale.
- 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.
- Some components may be HOT. Always wait for engine to cool down before performing work.



Some important safety information and/or operating instructions dedicated to the end user might be included in this instruction sheet. Make sure to give the kit part number as well as the instruction sheet included with this kit to the customer. Verify that the customer has access to all the information required for proper use of the accessory.

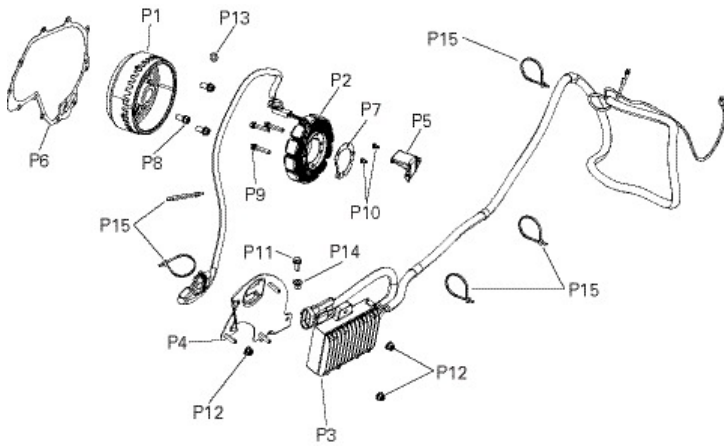
NOTE: USE TIGHTENING TORQUES IN THE FOLLOWING TABLE IF NOT OTHERWISE SPECIFIED.

	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 3.0 hours.

parts to be installed



ITEM	DESCRIPTION	Part number	QTY
P1	850W Rotor ass'y	420685705	1
P2	Stator plate	420686365	1
P3	Voltage Regulator	710006824	1
P4	Voltage Regulator Support	710007523	1
P5	Cable Support	420251889	1
P6	Gasket (magneto)	420651201	1
P7	Spacer	705503238	1
P8	M8 X 16 Flanged Torx Screw	420440854	3
P9	M6 X 30 Flanged Torx Screw	420440647	3
P10	M4 X 8 Socket Head Screw	205063044	2
P11	M6 X 16 Flanged Hex Screw	207661644	1
P12	M6 Elastic Nut	234062670	5
P13	7603 DIN Washer	504082900	1
P14	3/16 Black Anodised Pop Rivet	293150186	1
P15	371 mm Locking Tie	293750018	5

instructions

Vehicle Preparation

Tilt the bed.



**WARNING**

Use the designated BRP tool (P/N 529036494) to secure the platform on long box models

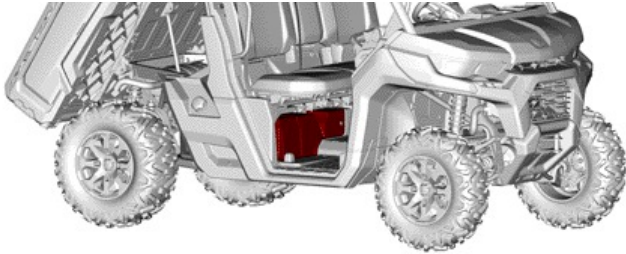
**required tool**

LONG BOX RETAINER (P/N 529 036 494)



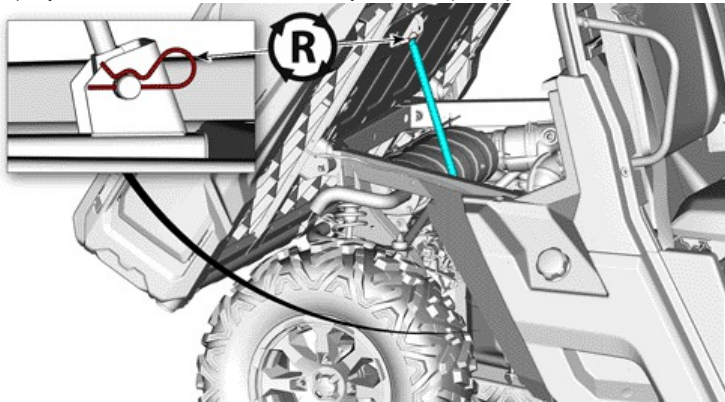


Remove the battery cover.



Disconnect battery.

- NOTICE Always disconnect battery before doing any electrical modifications. Do not place tools on battery. Proceed exactly in this specific order:
- Disconnect BLACK cable (-) first.
  - Disconnect RED cable (+) after.
  - Secure battery by covering poles with isolating material.
- Properly secure the bed and remove bed cylinder. Keep hair pins.

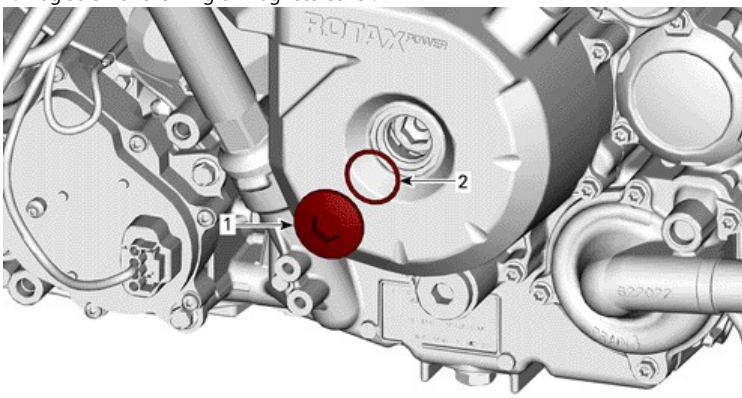


Crankshaft Locking Procedure

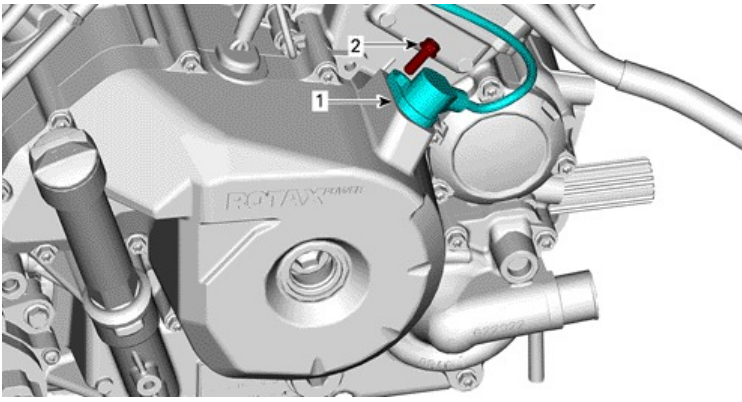
NOTE: When crankshaft is locked, the rear piston no. 2 is at TDC. Crankshaft can not be locked at piston no.1 TDC.

NOTICE To see if the rear piston no. 2 is at TDC ignition refer to CAMSHAFT TIMING GEAR in the TIMING CHAIN subsection of the SHOP MANUAL.

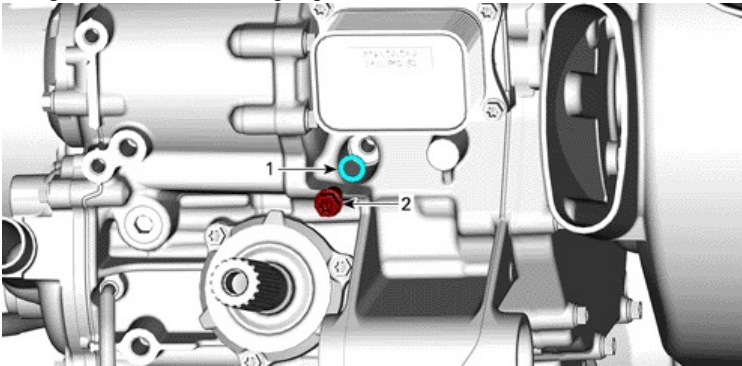
- Remove:
1. Spark plug cables and spark plugs of both cylinders.
  2. Plug screw and O-ring of magneto cover.



1. Plug screw
2. O-ring
3. Crankshaft position sensor.



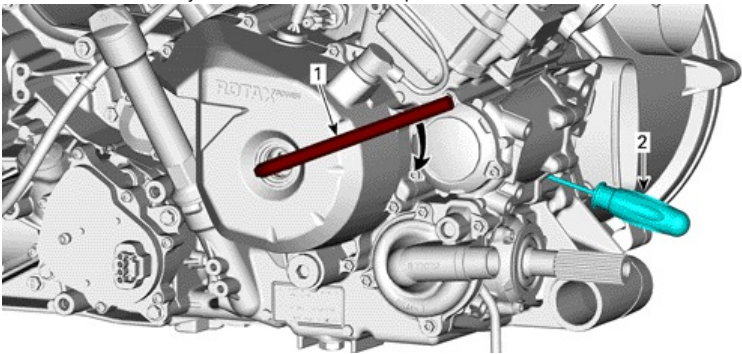
1. Crankshaft position sensor
2. Screw
4. Plug screw and discard sealing ring.



Crankcase PTO side, front side

1. Sealing ring
2. Plug screw

Use a 14 mm Allen key to turn crankshaft until piston no. 2 is at TDC.



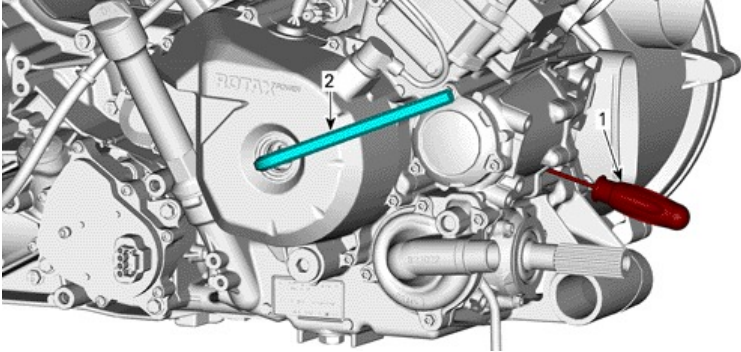
1. 14 mm Allen key
2. Flat screwdriver

When rear piston is at TDC marks on magneto flywheel "2" and on the magneto cover are aligned.




1. Mark "2" on magneto flywheel
2. Notch on magneto cover
3. Crankshaft position sensor location

Use a screwdriver to check if the groove in the crankshaft is aligned with the hole.



1. Flat screwdriver
  2. 14 mm Allen key
- Lock crankshaft.

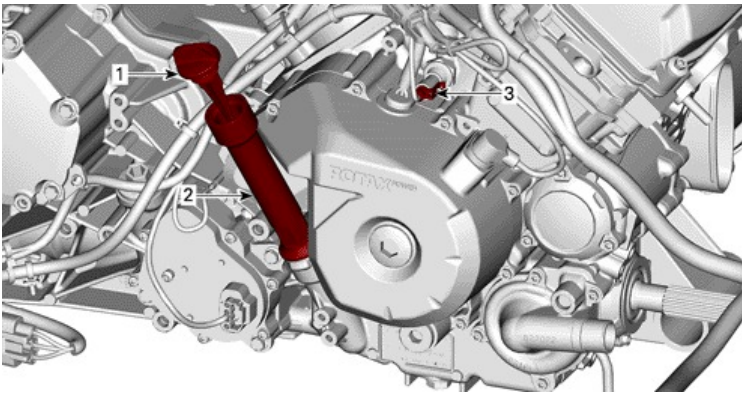
**required tool**

CRANKSHAFT LOCKING BOLT (P/N 529 035 617) 



1. Crankshaft locking bolt
- Gradually insert the tool in the crankshaft groove. Make sure that the tool tip enters the groove and does not jam on the crankshaft balancer surface.
- Removing the Magneto Cover
- Drain engine oil.
- Remove dipstick and oil level tube with O-rings.
- Disconnect oil pressure switch (OPS) connector.

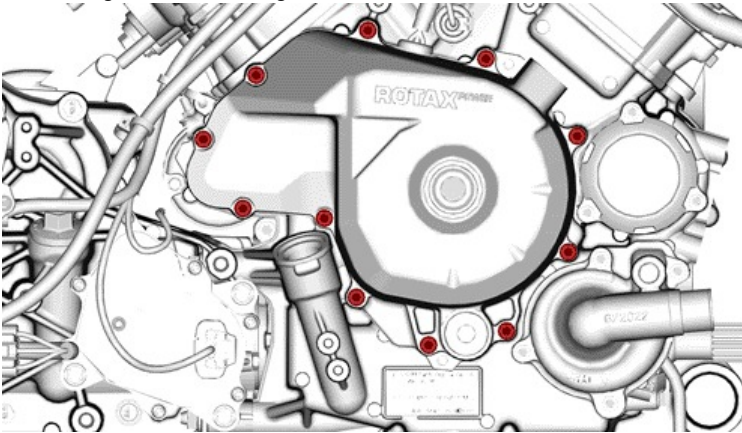




1. Dipstick
2. Oil level tube
3. Oil pressure switch (OPS) connector

Disconnect stator connector from voltage regulator/ rectifier.

Remove magneto cover retaining screws.



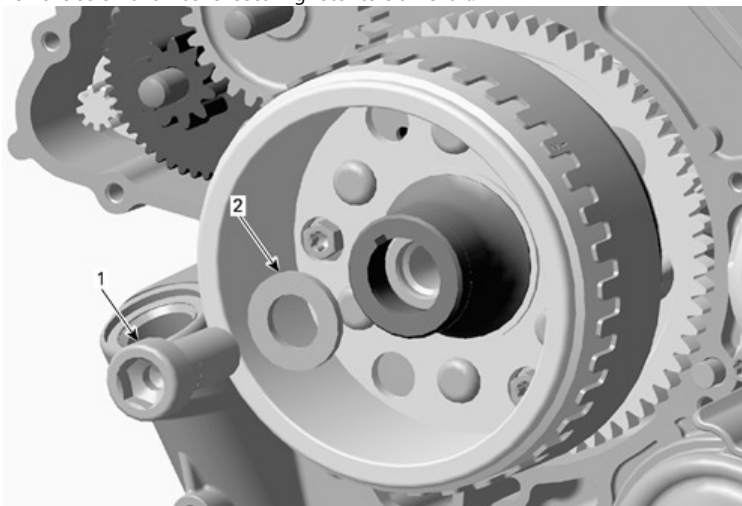
Pull out magneto cover.

Discard the gasket.

Removing the Rotor

Heat screw in order to break the threadlocker.

Remove screw and washer securing rotor to crankshaft.



1. Screw M16
2. Washer

Remove rotor.

**required tools**

MAGNETO PULLER  
(P/N 529 035 748)

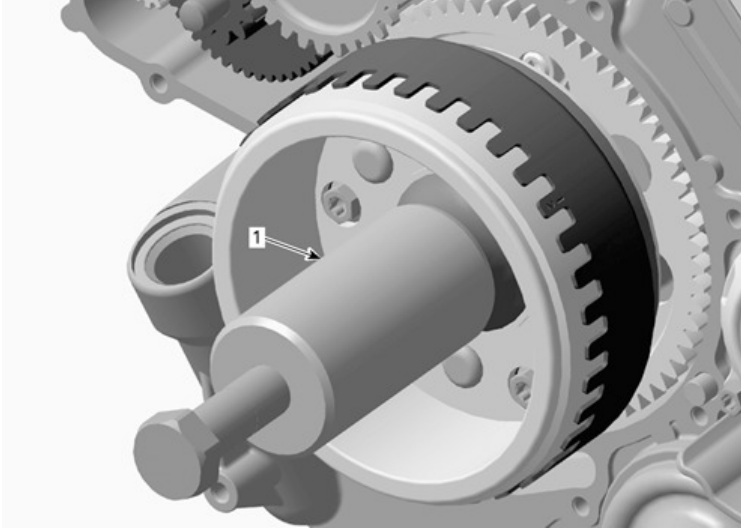


**required tools**

CRANKSHAFT PROTECTOR  
(P/N 529 036 034)



NOTE: Use grease to place protector on crankshaft end prior to screw on the magneto puller.



1. Magneto puller

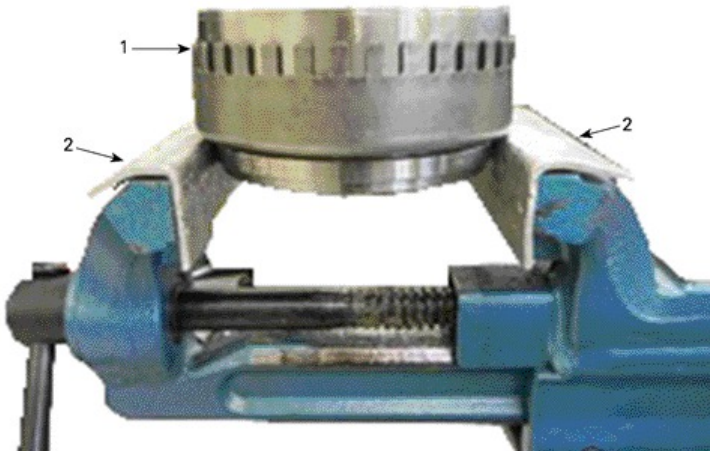
Screw magneto puller bolt to remove rotor.

Removing the Sprag Clutch

Install sprag clutch housing in vise. Ensure to use soft jaws in vise to avoid damage.

Heat sprag clutch housing screws in order to break the Loctite.

Loosen screws.

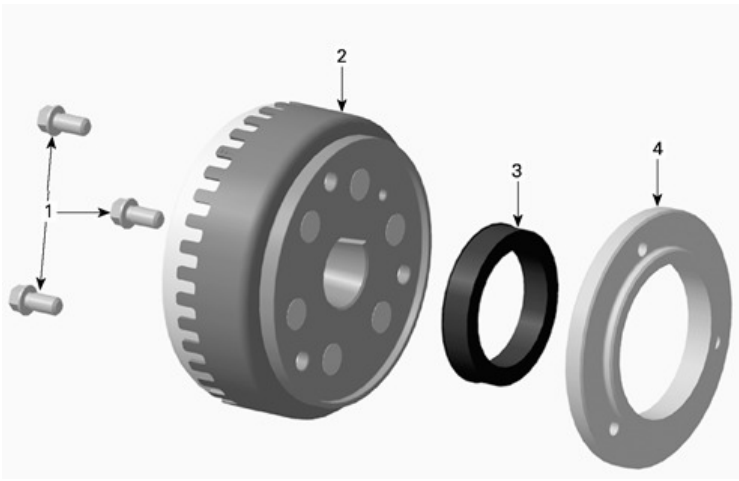


1. Sprag clutch housing

2. Soft jaws

Remove sprag clutch gear.

Remove sprag clutch housing screws and sprag clutch housing.

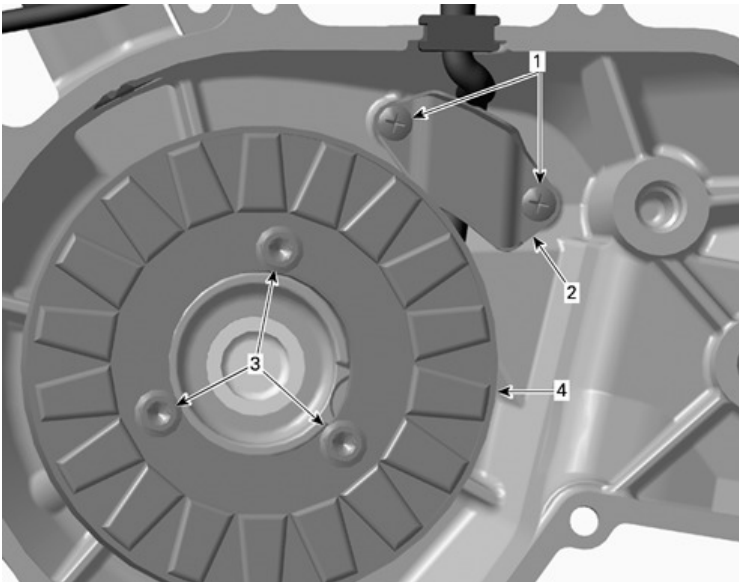


1. Sprag clutch housing screws
2. Rotor
3. Sprag clutch
4. Sprag clutch housing

#### Removing the Stator

Remove:

- Holding strip screws
- Stator retaining screws
- Stator.



1. Holding strip screws
2. Wire holding strip
3. Stator retaining screws
4. Stator

#### Parts Installation

##### Installing the Sprag Clutch

For installation, reverse the removal procedure. Pay attention to the following details.

Use service product to clean the following:

- Threads in sprag clutch housing
- Threads of sprag clutch housing screws.

#### **service product**

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

Apply service product on threads of M8 X 16 flanged Torx screws [P8].

#### **service product**

LOCTITE 648 (GREEN) (P/N 413 711 400)

Install screws but do not torque yet.

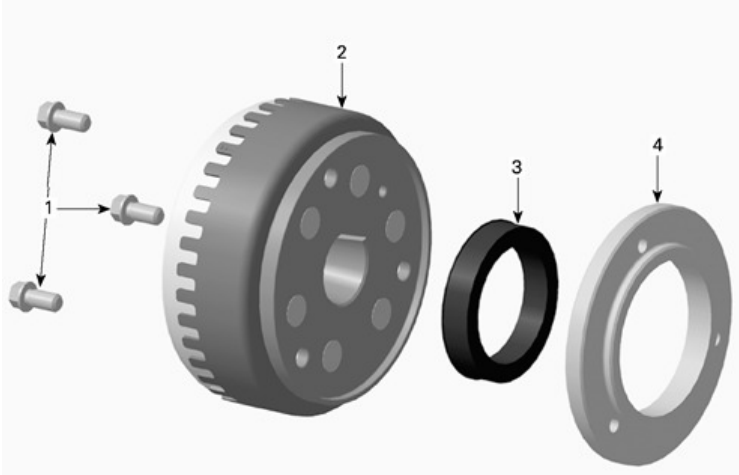
Apply engine oil on sprag clutch and sprag clutch gear needle bearing.



Install sprag clutch housing M8 X 16 flanged Torx screws [P8] and sprag clutch housing. Tighten to specification.

**tightening torque**

M8 X 16 flanged Torx screws [P8]  $30 \pm 2$  N•m ( $22 \pm 1$  lbf•ft)



- 1. M8 X 16 flanged Torx screws [P8]
- 2. Rotor [P1]
- 3. Sprag clutch
- 4. Sprag clutch housing

**Installing the Rotor**

The installation is the reverse of the removal procedure. However, pay attention to the following.

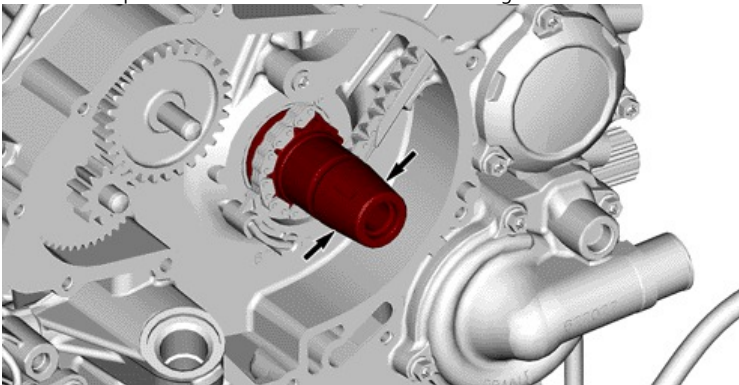
Clean these components:

- Crankshaft taper
- Oil passage in crankshaft taper
- Thread in crankshaft
- Rotor taper
- Oil bore in rotor.

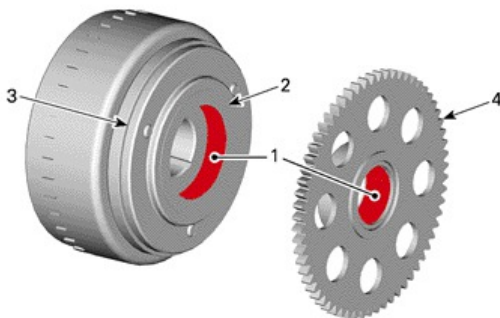
**Service product**

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

NOTICE Taper on crankshaft and rotor must be free of grease.



Oil sprag clutch and install sprag clutch gear.

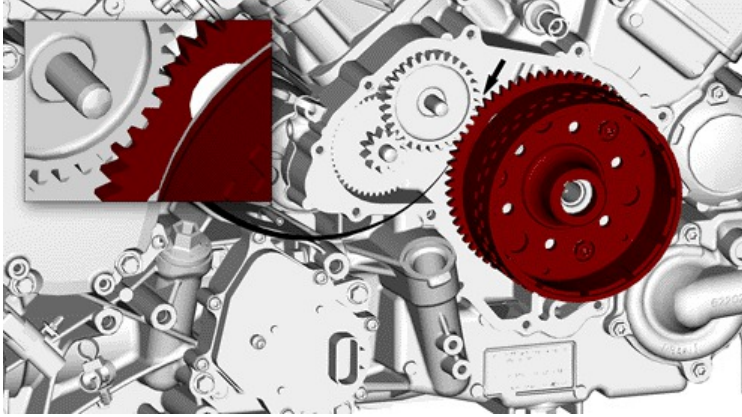


1. Apply engine oil here

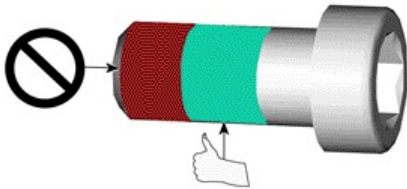
2. Sprag clutch
3. Sprag clutch housing
4. Sprag clutch gear

Slide rotor onto crankshaft. The woodruff key and the keyway must be aligned.

Rotate starter double gear counterclockwise to align intermediate gear teeth with sprag clutch gear. Ensure the starter gears are completely engaged.



Secure the rotor using the previously removed M16 X 35 screw. Ensure the threads are clean and Loctite is applied as shown to ensure proper oil flow for generator cooling. The first three (3) threads must be clean and free of Loctite.



#### Tightening torque

$150 \pm 10 \text{ N}\cdot\text{m}$  ( $111 \pm 7 \text{ lbf}\cdot\text{ft}$ )

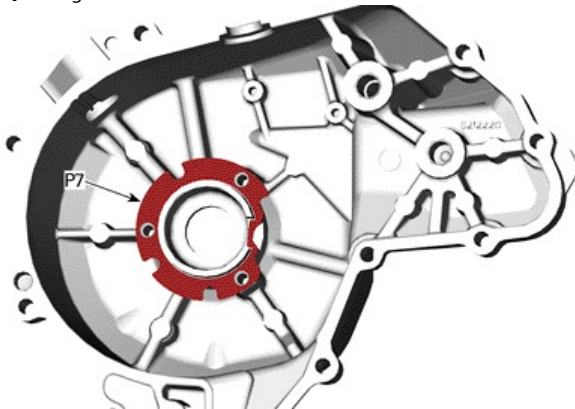
Rotor retaining screw +  
LOCTITE 648 (GREEN) (P/N 413 711 400)

#### Installing the Stator Plate

Clean inside surface of magneto cover.

Clean fixation holes of any Loctite remaining.

Install spacer [P7] in magneto cover.



Assemble stator plate [P2] using M6 X 30 screws [P9]. Tighten to specification.

#### Tightening torque

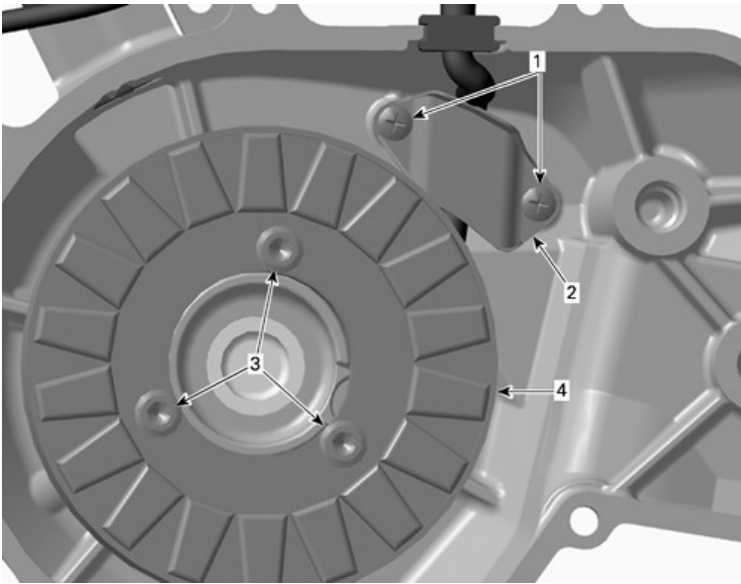
M6 X 30 screws [P9]  $10 \pm 1 \text{ N}\cdot\text{m}$  ( $89 \pm 9 \text{ lbf}\cdot\text{in}$ )

Install cable holder using two (2) M4 X 8 socket head screws [P10]. Tighten to specification.

NOTE: Ensure the cable is tight enough so it will not come in contact with other components.

#### Tightening torque

M4 X 8 socket head screws [P10]  $4 \pm 0.5 \text{ N}\cdot\text{m}$  ( $35 \pm 4 \text{ lbf}\cdot\text{in}$ )



1. Holding strip screws [P10]
2. Wire holding strip
3. Stator retaining screws [P9]
4. Stator [P2]

#### Installing the Magneto Cover

The installation is the reverse the removal procedure. However, pay attention to the following. Install the NEW magneto cover gasket [P6].

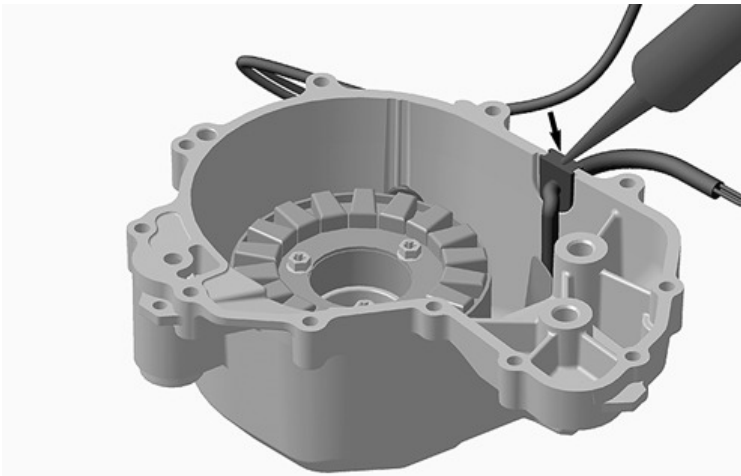
Apply sealant on stator cable grommet as shown in next illustration.

#### Service product

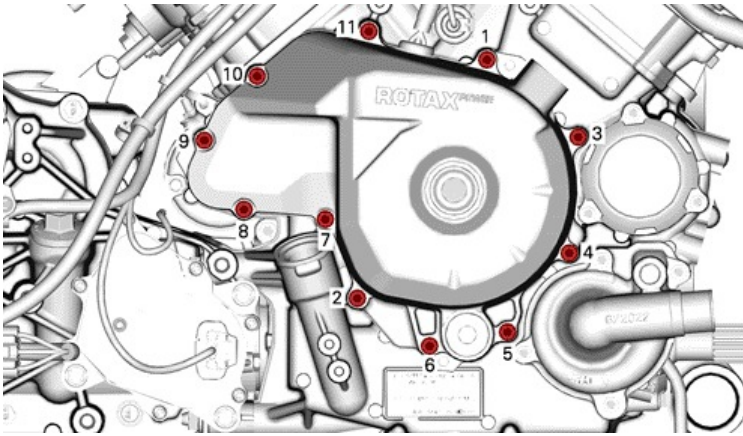
LOCTITE 5910 (P/N 293 800 081)

OR

DREI BOND SEALING COMPOUND (P/N 420 297 906)



Tighten screws using the following sequence.

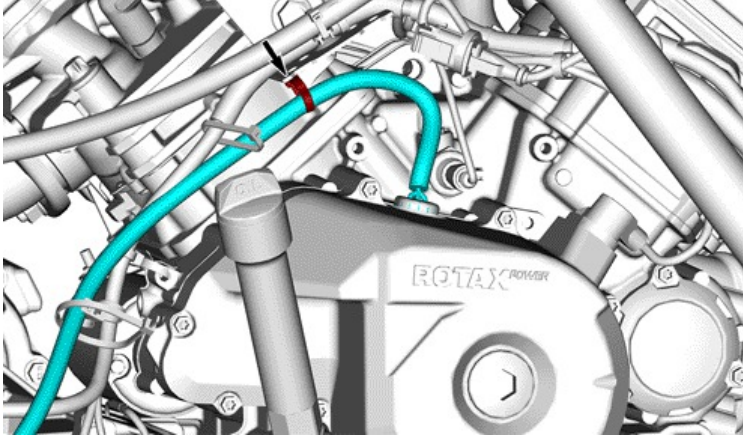


tightening sequence

**Tightening torque**

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

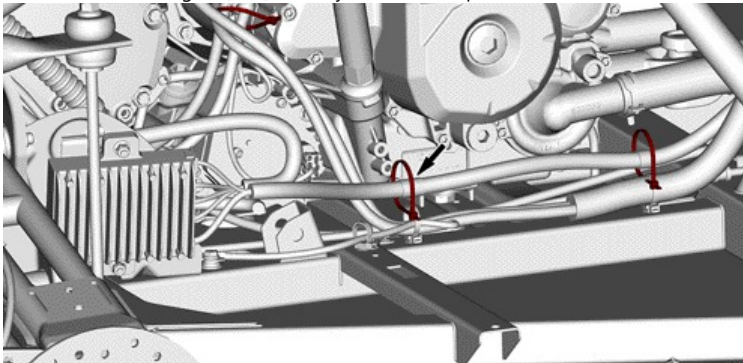
Install locking tie [P15] on stator cable approximately 125 mm (5 in) from grommet.



Install two (2) locking ties [P15] on the engine harness.



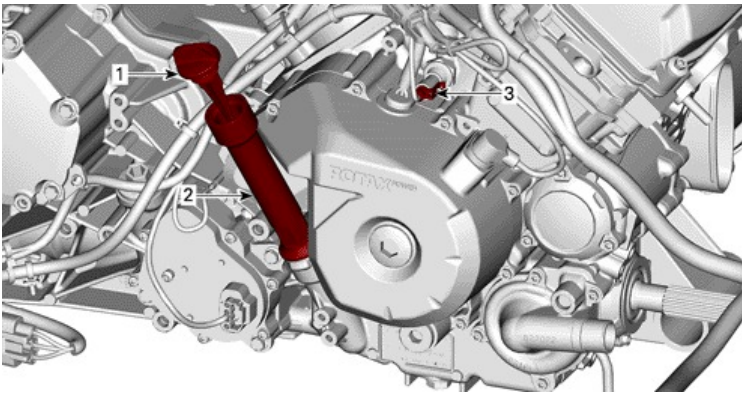
Install another locking tie [P15] on the yellow marked position of the stator cable to the engine harness.



Remove CRANKSHAFT LOCKING BOLT (P/N 529 035 617).

Reconnect the oil pressure switch, CPS oil level tube and dipstick.



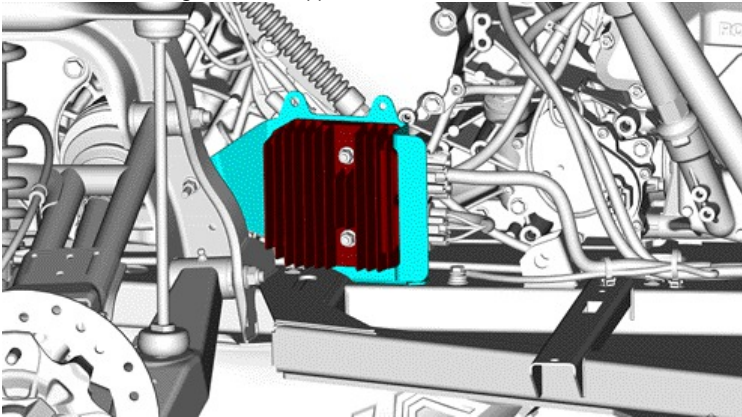


- 1. Dipstick
- 2. Oil level tube
- 3. Oil pressure switch (OPS) connector

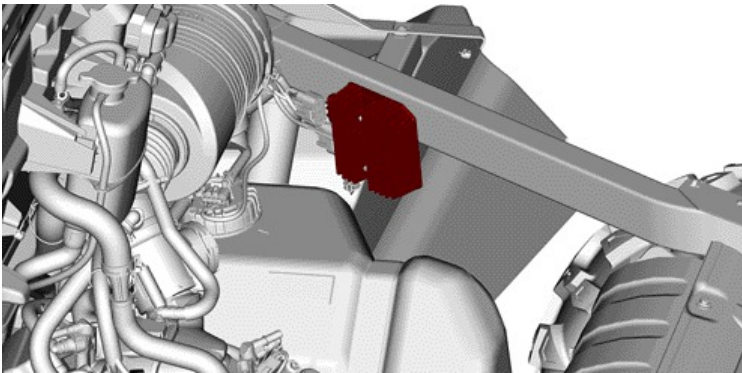
Refill engine with recommended oil.

Voltage Regulator

Remove the 650W regulator and support.



MY20 and later



MY19 and prior

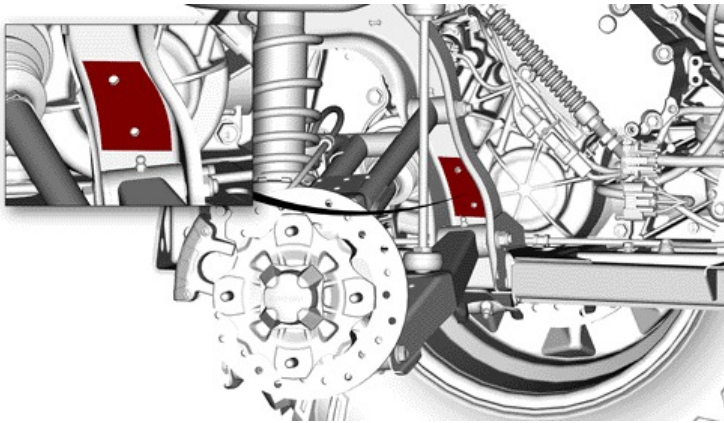
MY19 and prior only

Following the template, drill the first hole for the new support [P4].

NOTE: You will need to pre-drill with a spot drill first because the hole is at an angle.

Using the support as a template, drill the second hole.



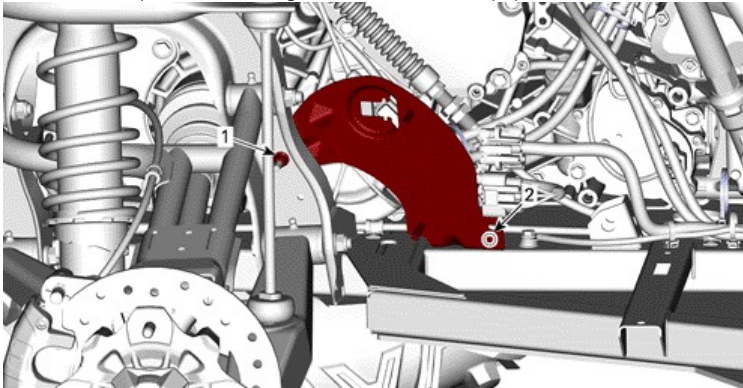


All models

Install the support [P4].

- On MY20 and later, secure using M6 nut [P12] and M6 X 16 screw [P11]

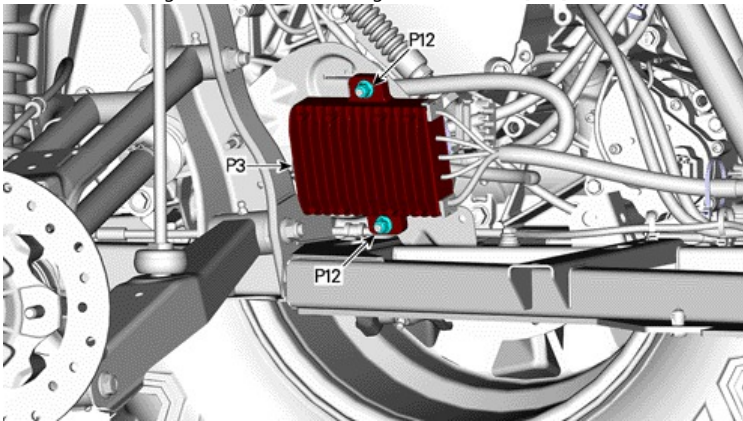
- On MY19 and prior, secure using M6 nut [P12] and the pop rivet [P14]



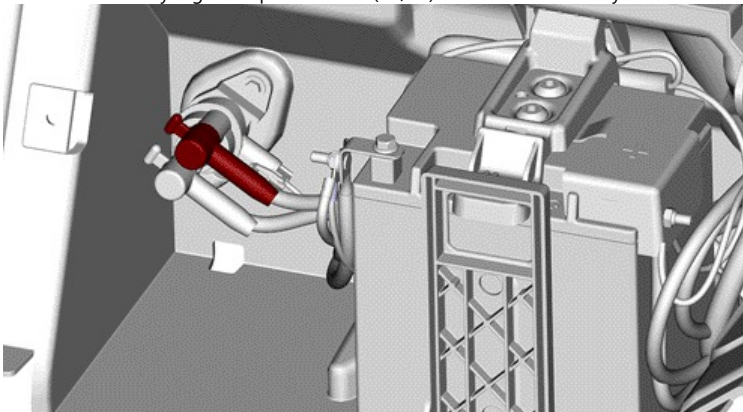
1. M6 nut [P12]

2. M6 X 16 screw [P11] OR pop rivet [P14]

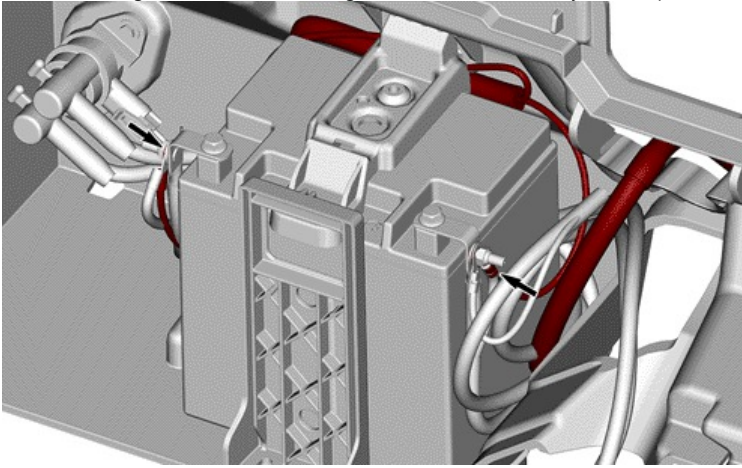
Install the 850W regulator [P3]. Secure using M6 elastic nuts [P12].



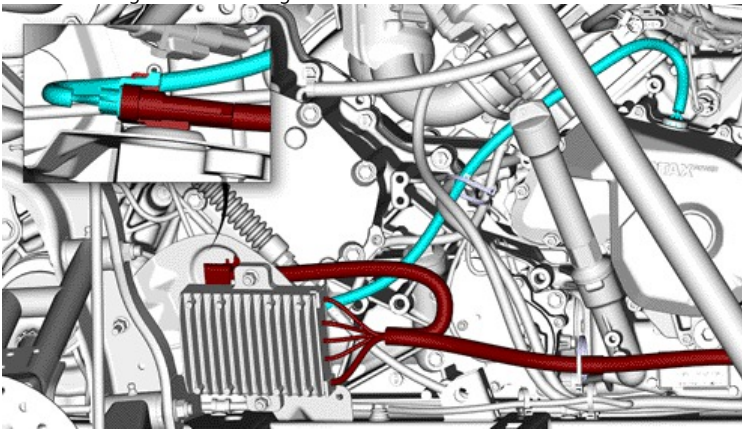
Remove the factory regulator positive wire (BK/YE) from the starter relay.



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.



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



Reinstall all the removed parts.

[Template.pdf \(https://brp.secure.force.com/consumer/servlet/fileField?entityId=ka03x000000ZnkaAAC&field=Attachment\\_Body\\_s\)](https://brp.secure.force.com/consumer/servlet/fileField?entityId=ka03x000000ZnkaAAC&field=Attachment_Body_s)