



Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

Date: Friday, Jan 19th, 2018
To: Dealer Principal, General Manager, Service Manager, North American Dealer Network
From: Richard Kenton, Technical Director; Jonathan LaForte, Technical Manager

- **Situation**

On the above-mentioned model Ducati received several reports of the starter motor cranking at idle without driving the engine, resulting in an engine no-start condition. The analysis of network dealer reports, and of the returned components, revealed that the cause of the phenomenon described above is starter clutch assembly breakage. Therefore, the starter clutch ignition assembly has been redesigned to make it more robust and prevent its possible breakage by introducing a reinforced new starter clutch and flywheel.

This technical solution has been introduced in the production line; we have decided to preventively replace all the starter clutch ignition assemblies mounted on the bikes produced before the modification with a dedicated kit that includes all the updated components.

The part no. of the dedicated kit for XDiavel model is part no. 69928312A.

Although the procedure for replacing the starter clutch and flywheel with kit part no. 69928312A described herein does not feature particular complications, to ensure the successful outcome of this operation you must strictly comply with the instructions below. Therefore, we recommend that technicians take their time to fully understand the procedure before attempting its implementation on the motorcycle.

- **Customers**

All bikes in dealer stock (not yet registered or already registered) and to be delivered to final Customers must be updated during pre-delivery operations, and always before delivery to the final Customer.

All bikes already delivered to final Customers will be directly recalled by Ducati Motor Holding through a dedicated communication to the Customers (by e-mail or standard mail if no e-mail address is available); Customers will then contact you to set an appointment for the update.





Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- **Involved Bikes**

You can find the list of VIN numbers involved in CR145 on the DCS, in sections:

VIN HISTORY		You can consult the single frame number.
CAMPAIGN		You can consult all the VIN numbers that Ducati Motor Holding sent you.

- **Service Solution**

The components needed for the update are included in [kit Part no.69928312A](#).

The flywheel and starter clutch assembly is pre-assembled with a service screw which must be removed; the kit also includes 8 M6x25 screws for the final assembly.

Flywheel and
starter clutch kit
part no. 69928312A









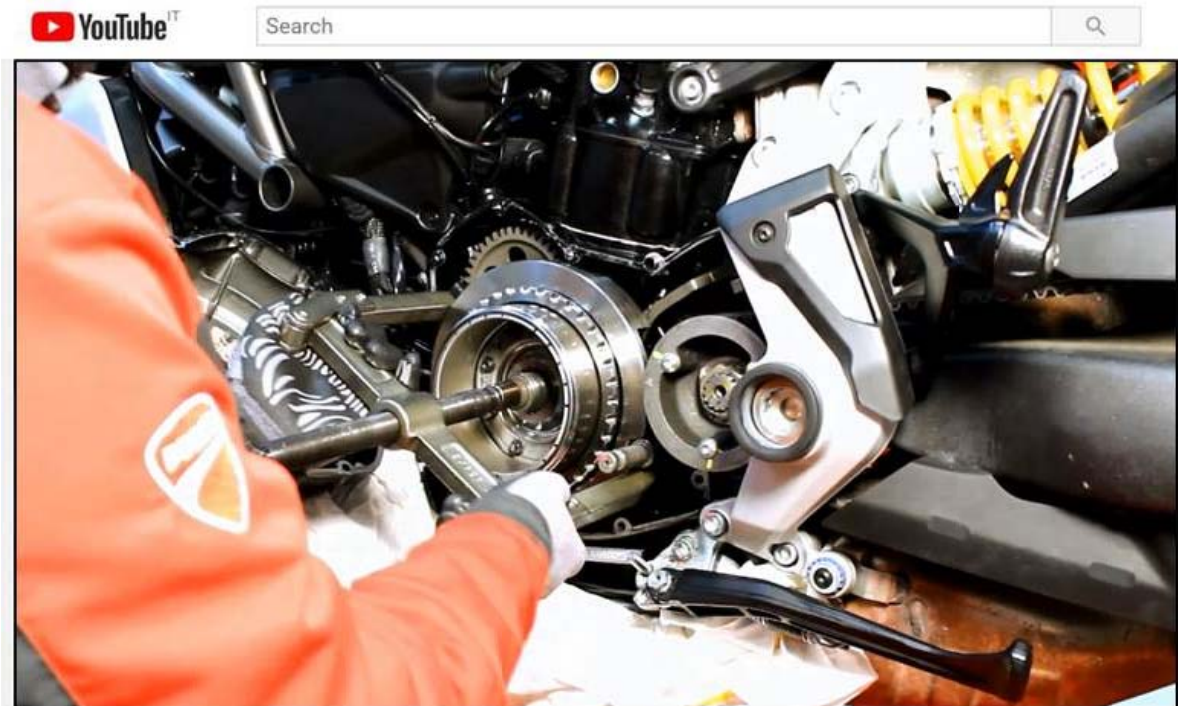
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

Flywheel and starter clutch kit part no. 69928312A		
Description	Photo	Quantity
Driven gear		1
Flange		1
Starter clutch		1
Flywheel		1
Screws M6x25		8

Ducati has created a video showing technicians how to correctly perform these operations. It can be viewed at the following link: <https://youtu.be/JGQfJDHdnrc>.





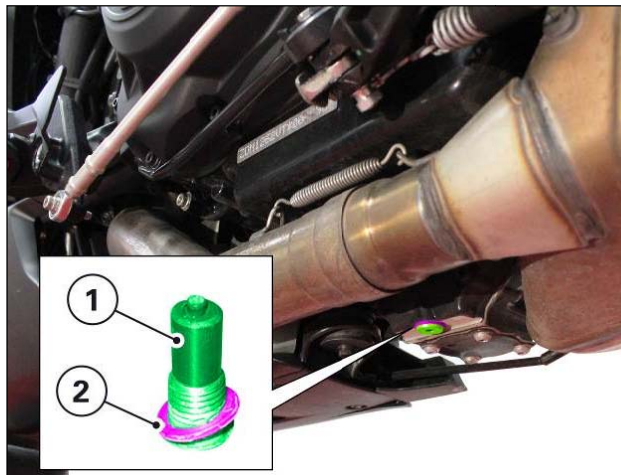
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

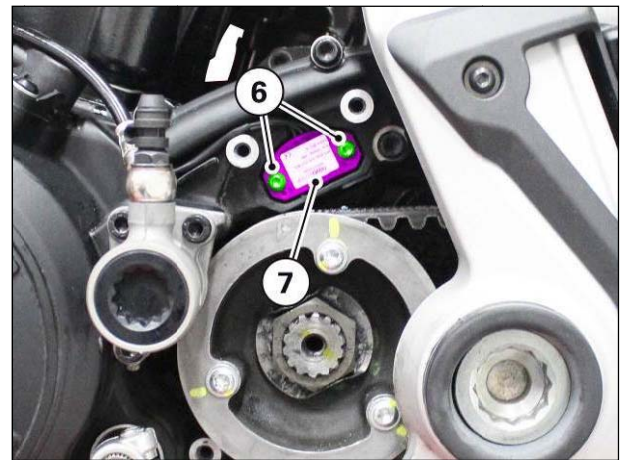
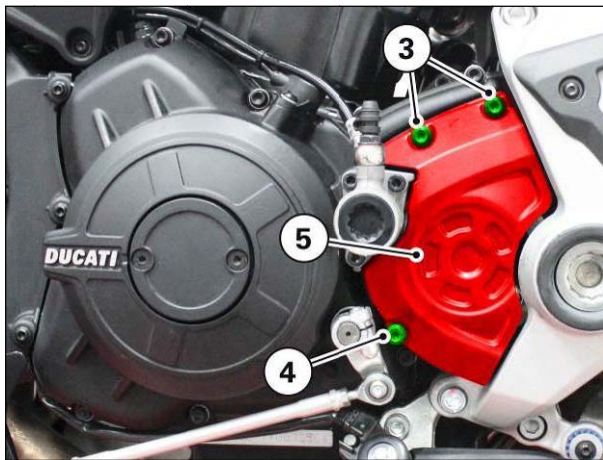
Recall Bulletin SRV-TSB-18-001

a) Vehicle preparation

- 1) Position the bike on the rear paddock stand.
- 2) Remove **drain cap (1)** with copper **washer (2)** from oil sump and drain the fluid.



- 3) Remove the **2 screws M6x45 (3)** and the **screw M6x16 (4)** securing the driving pulley cover (5).
- 4) Remove the **2 screws M4x16 (6)** securing the **gear sensor (7)**.



- 5) Remove the **3 screws M6x16 (8)** securing the **clutch actuator (9)**.

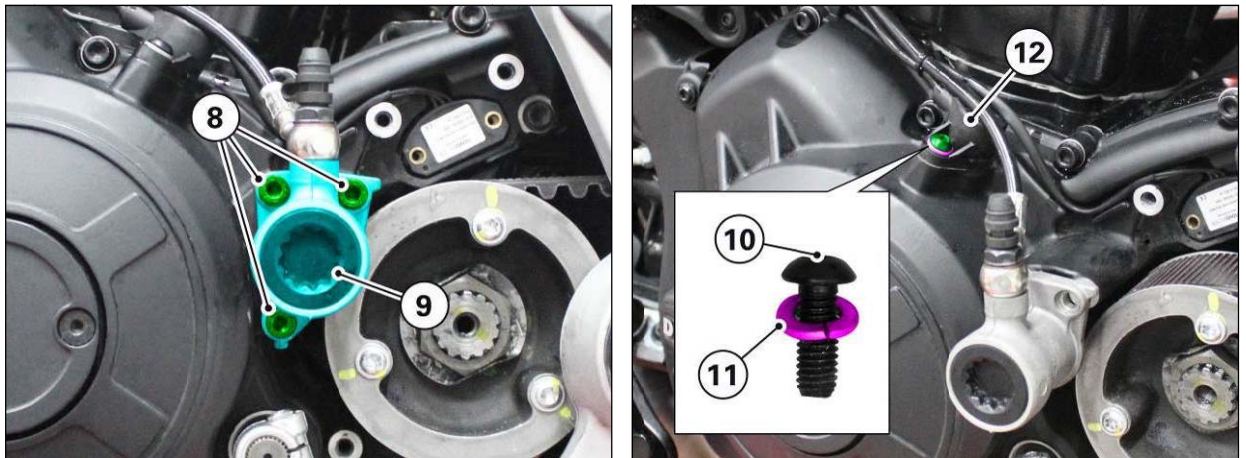


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 6) Remove screw M6x16 (10) and relevant washer (11) securing the engine rpm sensor (12).



- 7) Move the gear sensor, the clutch slave cylinder and the engine rpm sensor away from the working area, tying them with an elastic band as shown in the figure.



- 8) Remove clutch pushrod (13).

- 9) Remove the screw M6x18 (14) securing the gear shift lever to the gearbox selector shaft and slide the lever out.



Starter Clutch and Flywheel Replacement

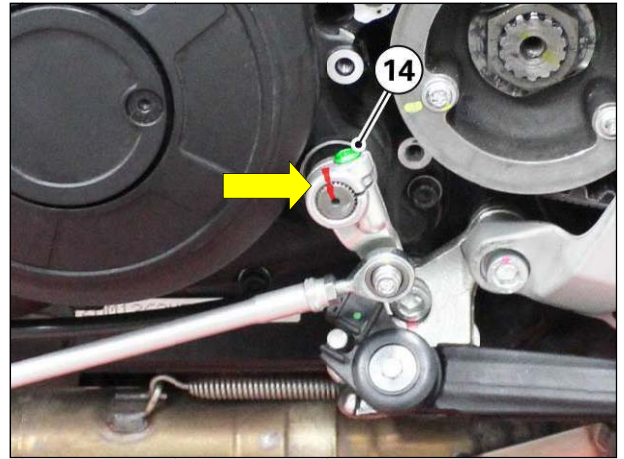
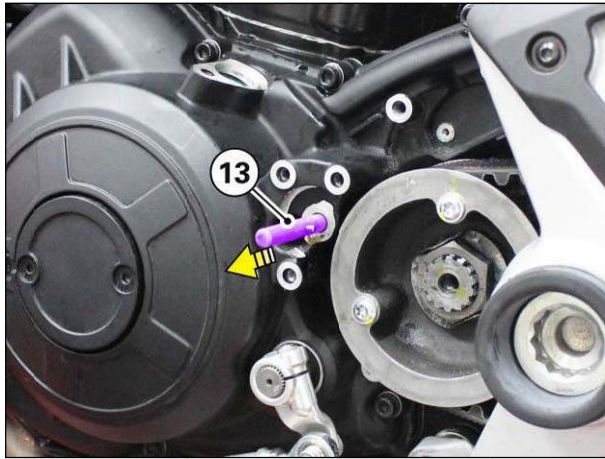
Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

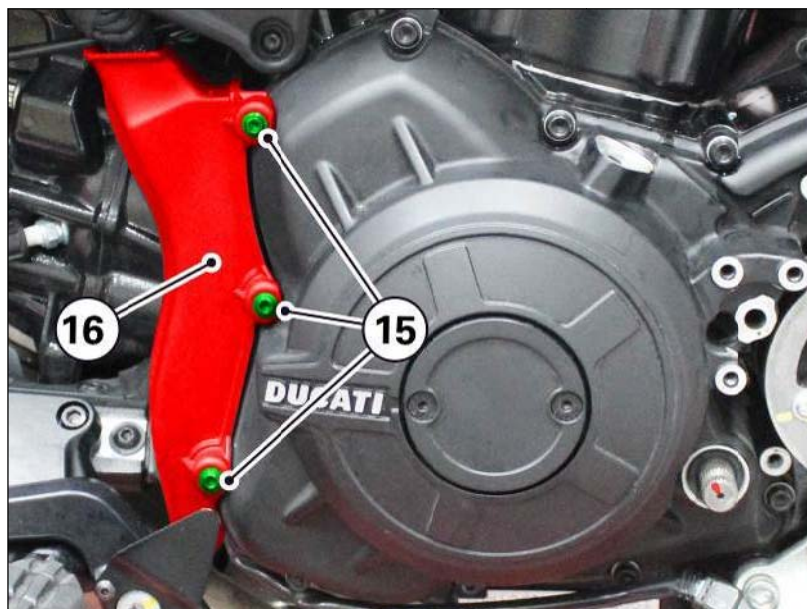


ATTENTION

Before sliding the gear shift lever out, make a mark on it and on the gearbox selector shaft in order to keep the correct timing for the subsequent reassembly.



10) Remove the 3 screws M5x12 (15) securing the wiring cover (16).



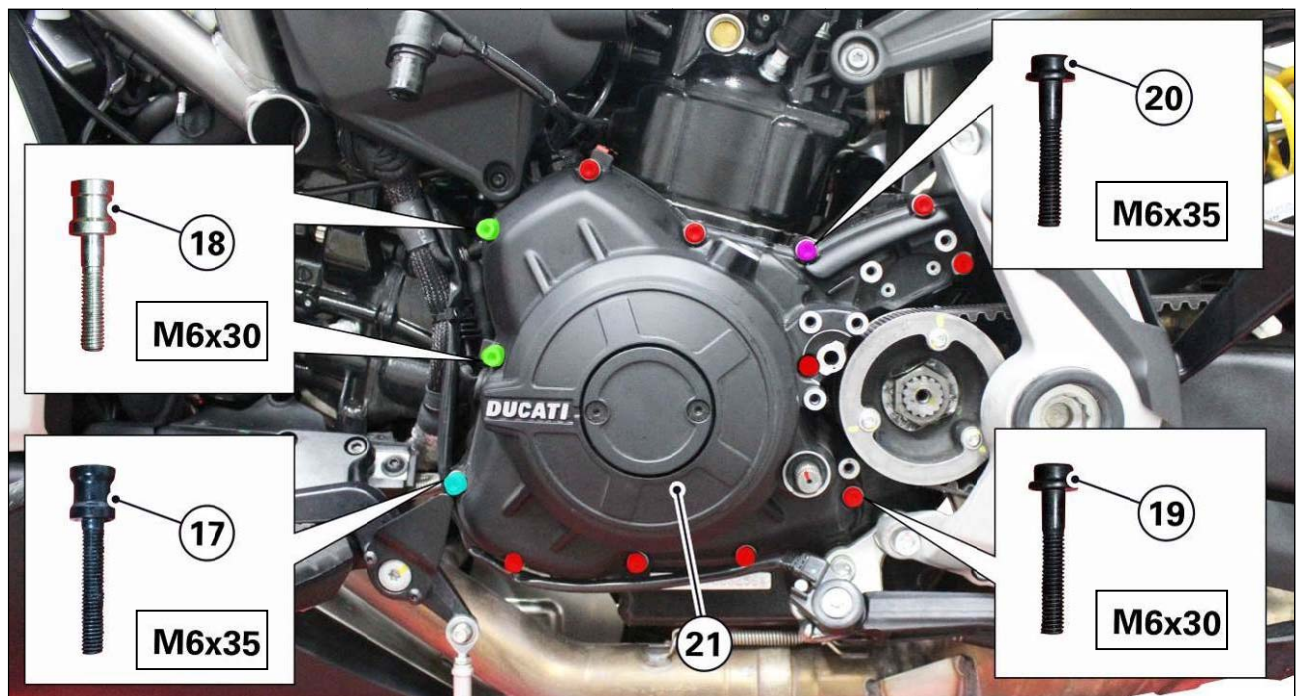


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 11) Remove generator cover (21) by loosening:
 - special screw M6x35 (17);
 - the 2 special screws M6x30 (18);
 - the 9 screws M6x30 (19);
 - screw M6x35 (20).



- 12) Remove the 2 screws M6x14 (22) securing the timing inspection cover (23).

- 13) Remove the screw M6x1 (24) securing the side stand switch.



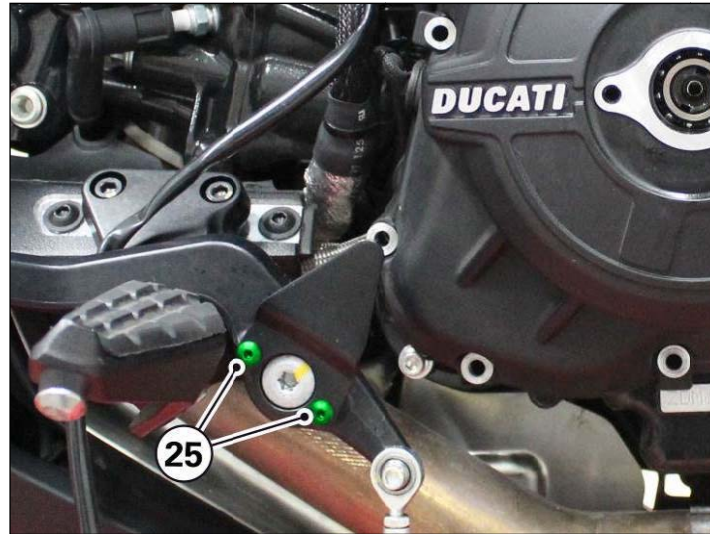


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 14) Remove the 2 screws M5x10 (25) securing the LH front heel guard.

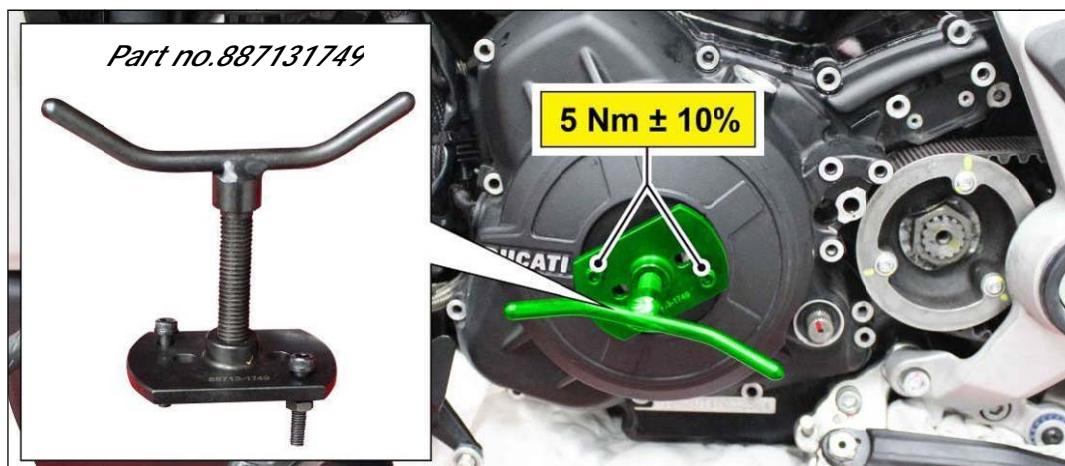


- 15) Install the special tool Part no.887131749 by tightening the 2 screws to a torque of 5 Nm ± 10% and remove the generator cover.



NOTE

Before removing the generator cover, protect the horizontal head exhaust manifold with a cloth in order to prevent leakages of residual engine oil.



- 16) Remove special tool Part no.887131749.



Starter Clutch and Flywheel Replacement

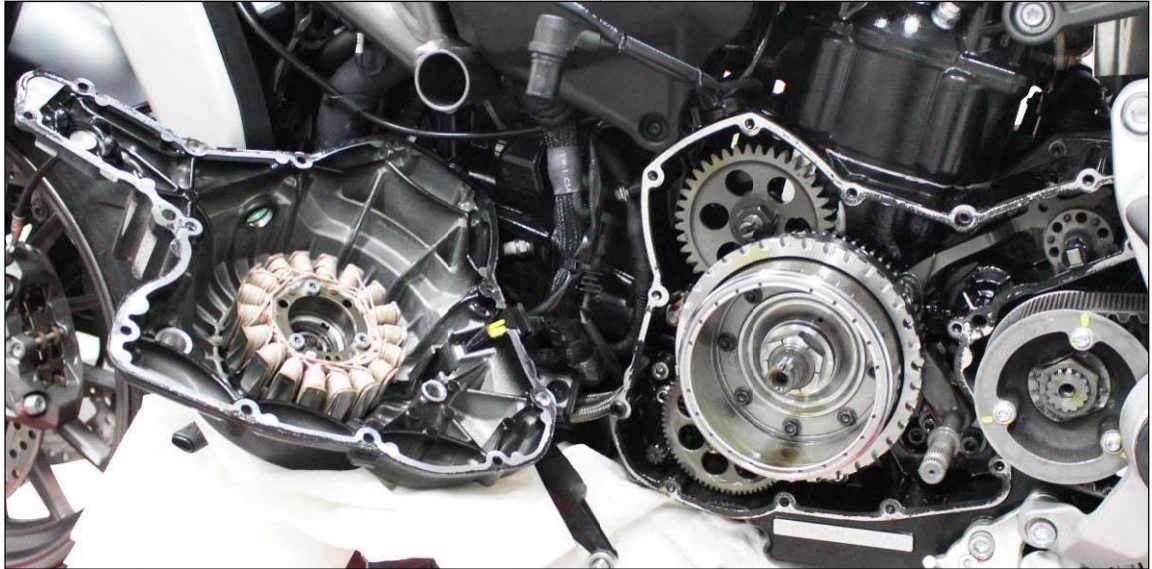
Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001



NOTE

Using the LH rider footpeg and the gearchange lever as a bearing plane, position the generator cover and protect it with a cloth.



ATTENTION

Before disassembling the flywheel assembly, rotate the crankshaft (using the special tool Part no. 887133824) until the engine timing is performed: the horizontal piston must reach the top dead centre TDC and the reference engraved points present on the driven timing gear must be timed as shown in the figure:

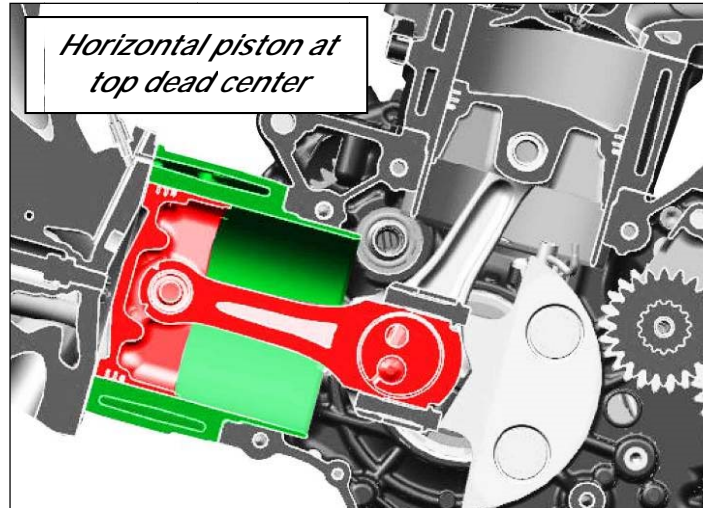
- the horizontal cylinder piston positioned at the top dead centre (TDC):



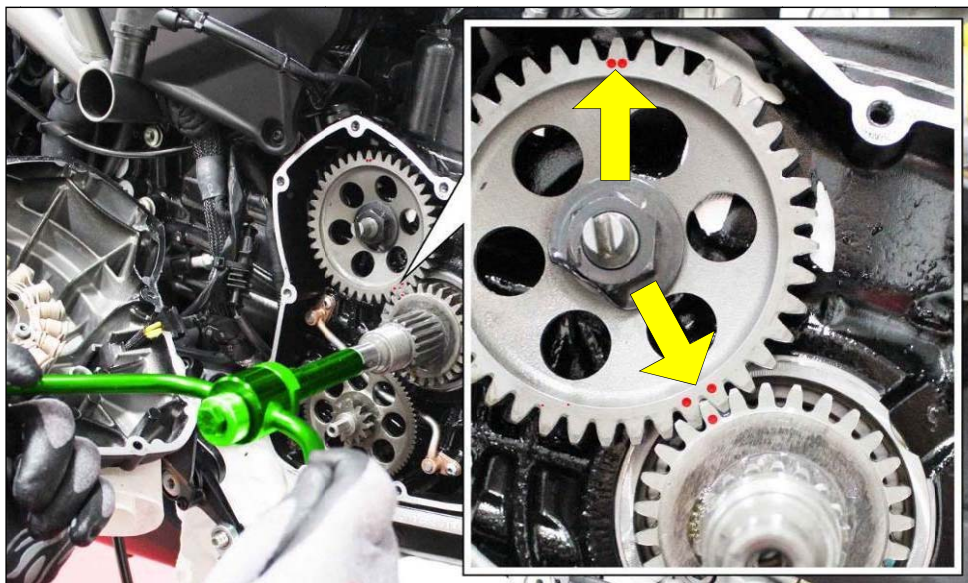
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001



- engraved points present on the driven timing gear timed with the engraved points of the primary timing gear:



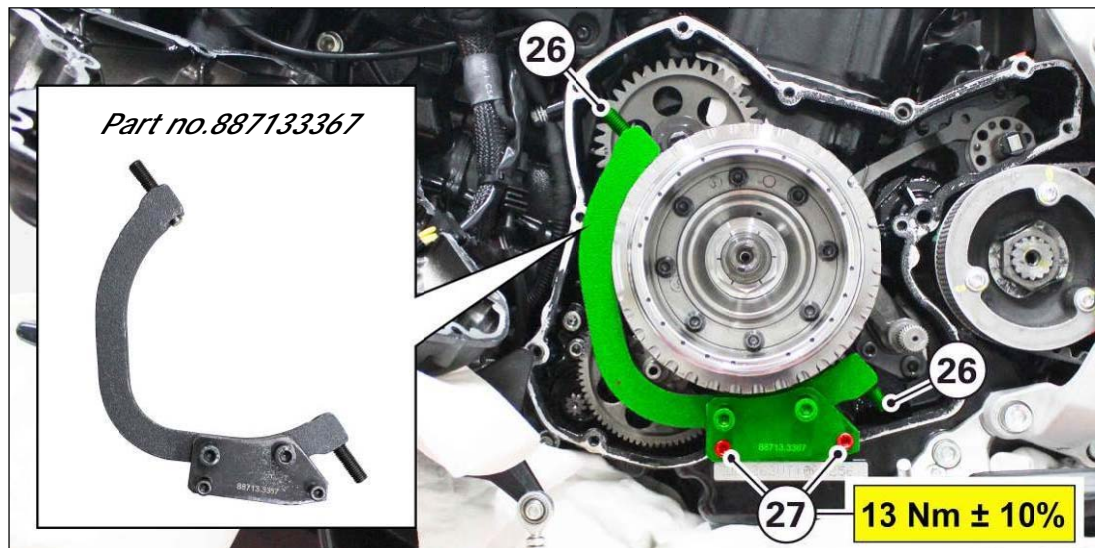


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 17) Install special tool Part no.887133367 driving the 2 pins (26) fully home in correspondence of the holes on the flywheel and tightening the 2 screws (27) to a torque of **13 Nm \pm 10%**.

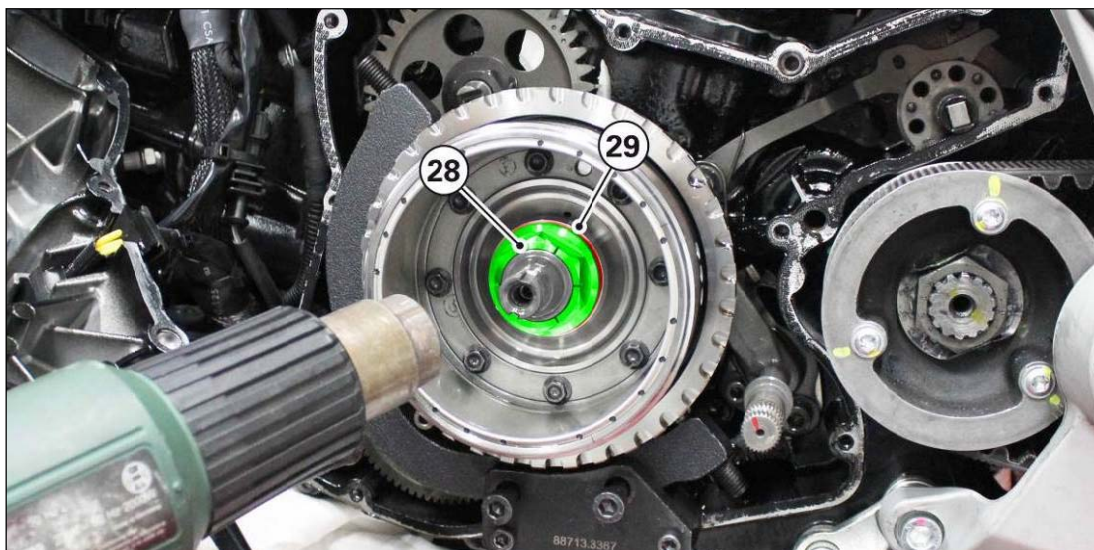


- 18) Remove nut (28) and washer (29).



NOTE

To facilitate the removal heat the nut with an industrial heating gun.



- 19) Remove special tool Part no. 887133367.



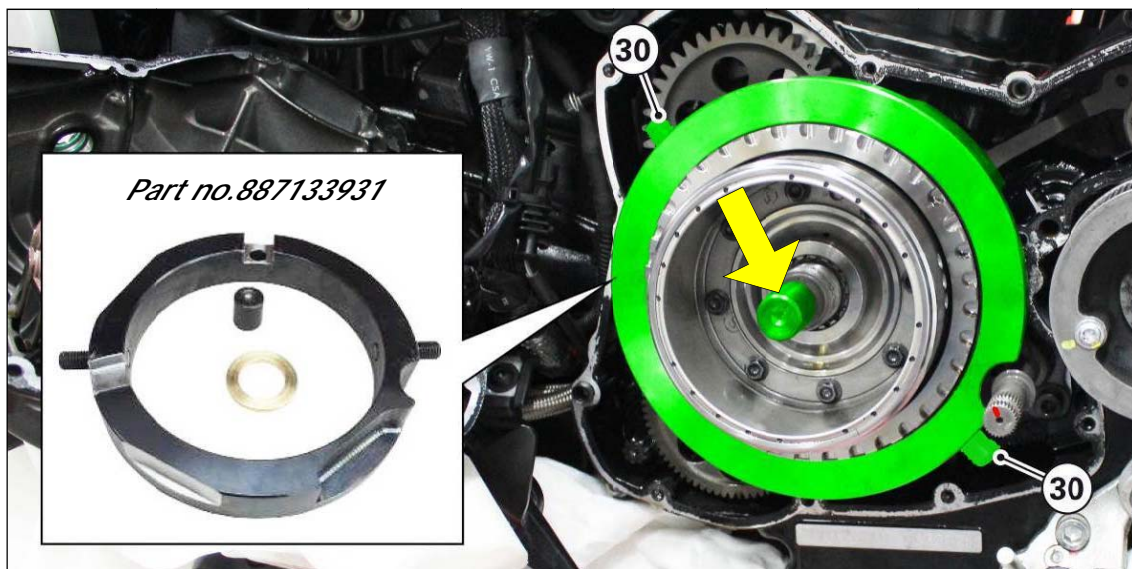
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

20) Take **special tool Part no.887133931**:

- fix the locking flange on the flywheel driving the **2 pins (30)** fully home in correspondence of the holes on the flywheel.
- insert the crankshaft protective cap.



21) Using a sliding arm puller remove the driven gear, flange, starter clutch, flywheel and rotor assembly.



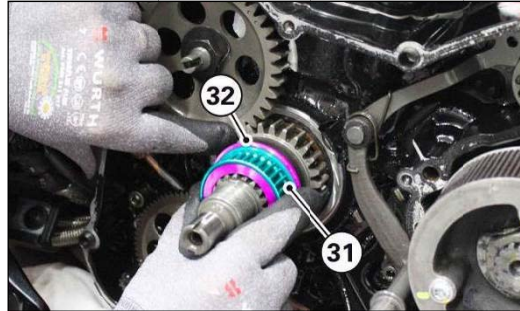


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 22) Remove special tool Part no. 887133931.
- 23) Remove **roller bearing cage (31)** and **bushing (32)**.

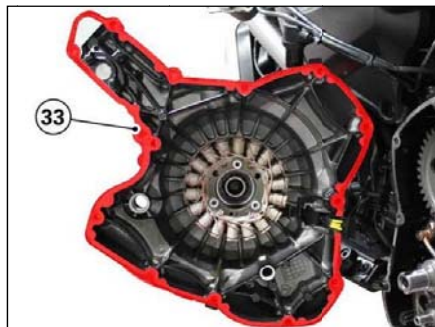


ATTENTION

During the removal of the roller bearing cage and of the bushing do NOT remove the primary timing system gear in order to avoid losing the engine timing.



- 24) Thoroughly clean the **surfaces (33)** of the generator cover and **(34)** of the crankcase using a degreasing agent in order to remove any residues of the ThreeBond 1207B black sealing compound.



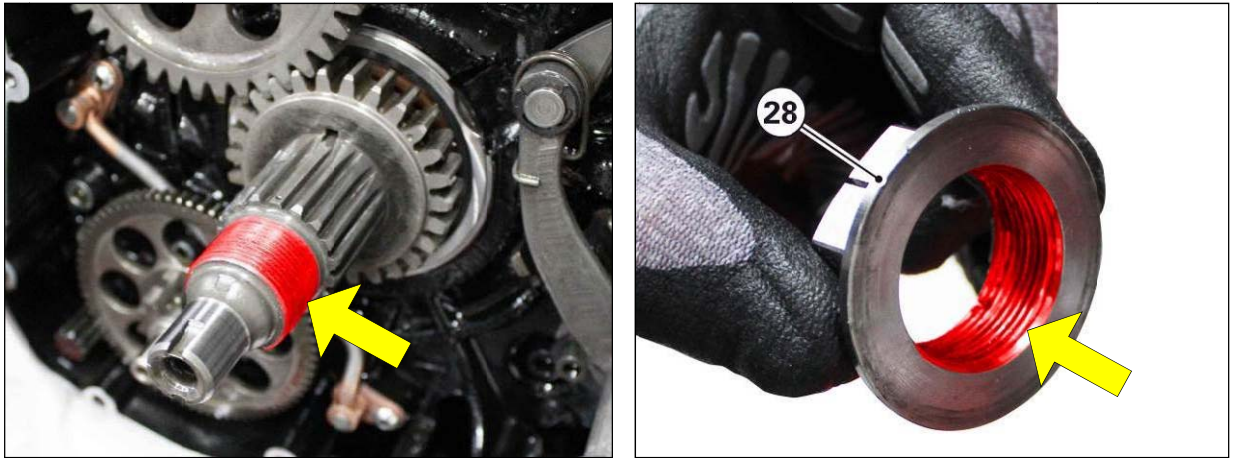


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

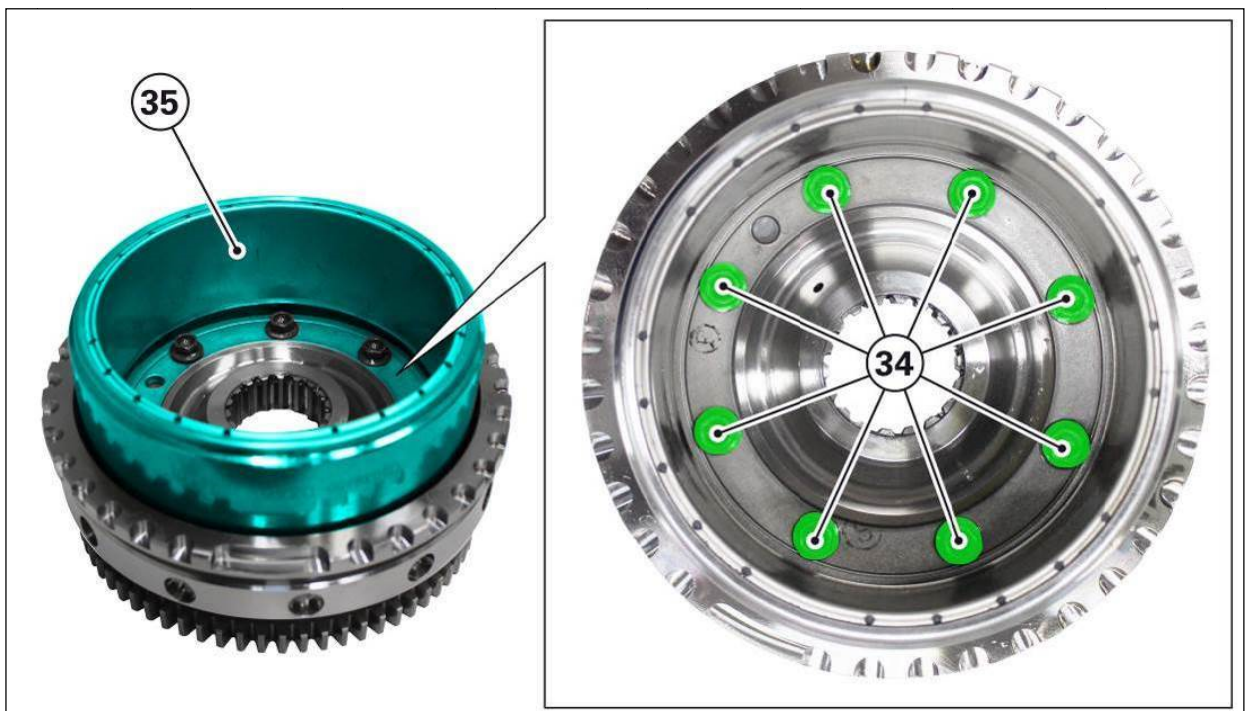
Recall Bulletin SRV-TSB-18-001

25) Thoroughly clean the threads of crankshaft and **nut (28)** from the Loctite 648 previously applied.



b) Preparation of kit Part no. 69928312A

1) Remove the **8 screws M6x25 (34)** securing the **rotor (35)** to the flywheel so as to recover the rotor.





Starter Clutch and Flywheel Replacement

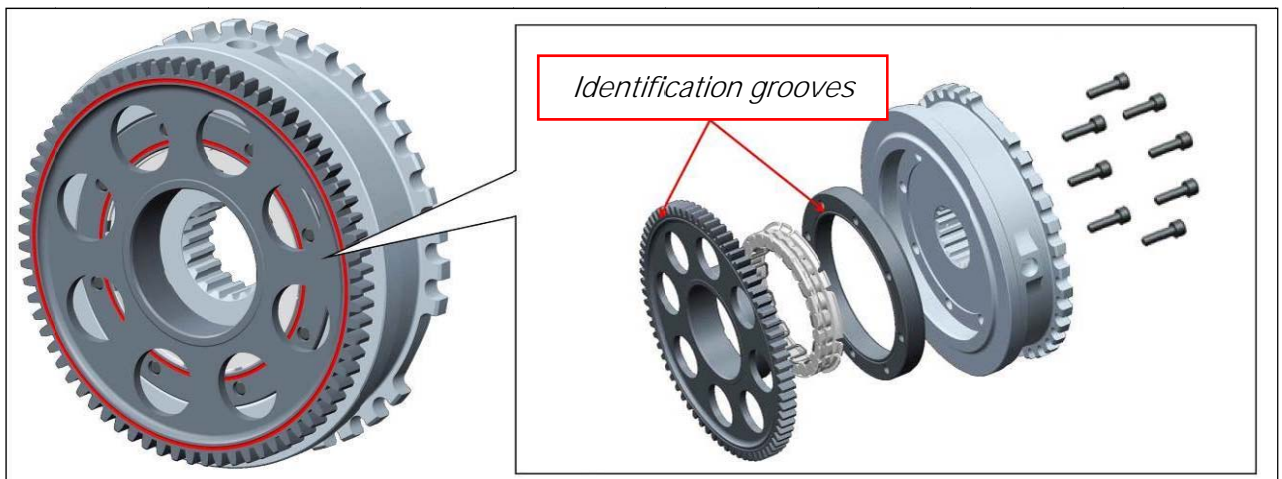
Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 2) Take the flywheel assembly of kit **Part no. 69928312A** and remove the service screw.



Below is the correct orientation of the flywheel assembly present in kit Part no.69928312A.



- 3) Fix **old rotor (35)** on the flywheel assembly of kit **Part no. 69928312A** orienting it so that the **hole (36)** of the rotor is aligned with the **engraved point (37)** of the flywheel, as shown in the figure.

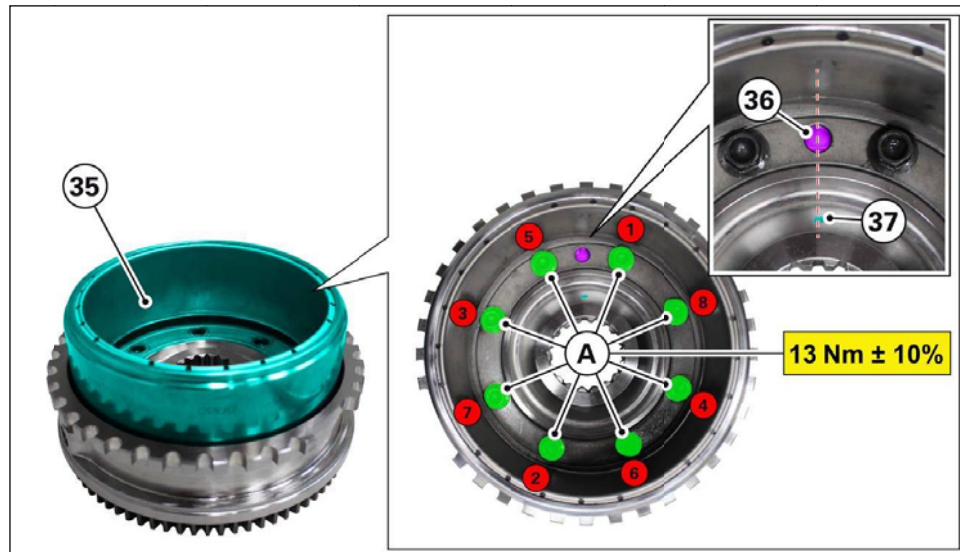


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

Take the **8 screws M6x25 (A)** included in the kit Part no.69928312A and tighten them to a torque of **13 Nm \pm 10%** following the sequence shown in the figure.

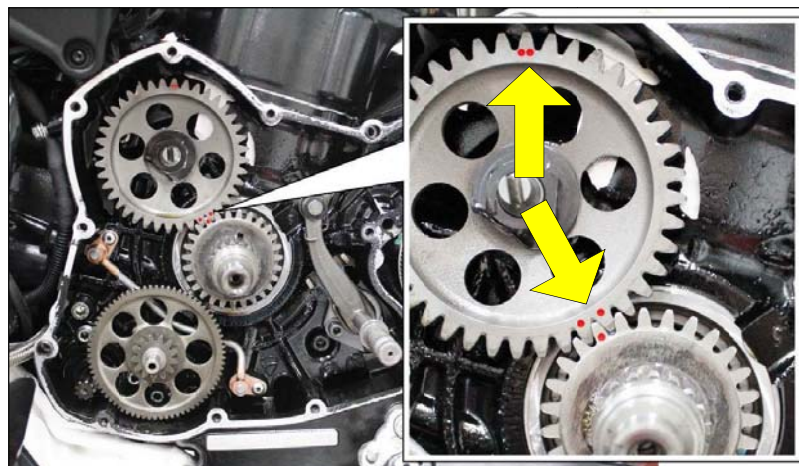


c) Installation of kit Part no. 69928312A



ATTENTION

Before installing the flywheel assembly, check that the 2 engraved points present on the driven timing gear are timed with the engraved points of the primary timing gear, as shown in the figure.





Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

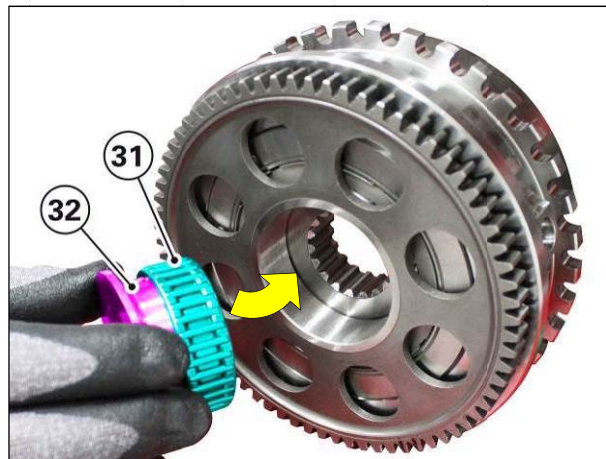
Recall Bulletin SRV-TSB-18-001

- 1) Take the flywheel assembly and install **roller bearing cage (31)** and **bushing (32)** as shown in the figure.

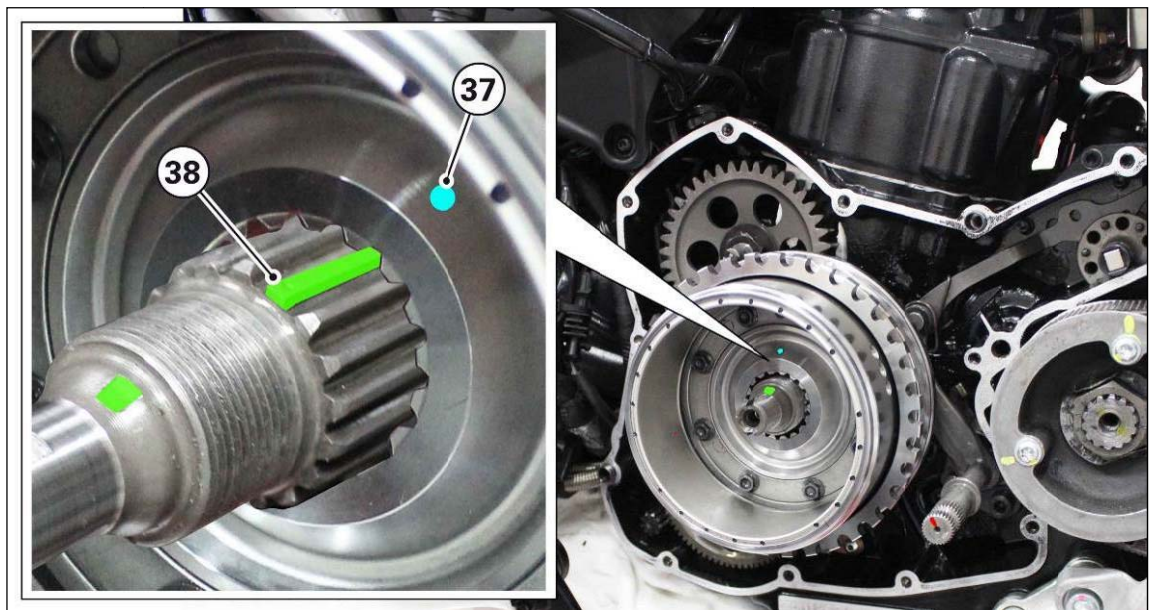


NOTE

Smear bushing with Shell Gadus S2 V220 grease.



- 2) Install the flywheel assembly on the crankshaft making sure that the **hole (37)** on the flywheel is aligned with the **lowered tooth (38)** on the crankshaft.



- 3) Insert the copper washer supplied with special tool Part no. 887133931 on the crankshaft. The copper washer must be used ONLY to insert the flywheel completely on the crankshaft and be



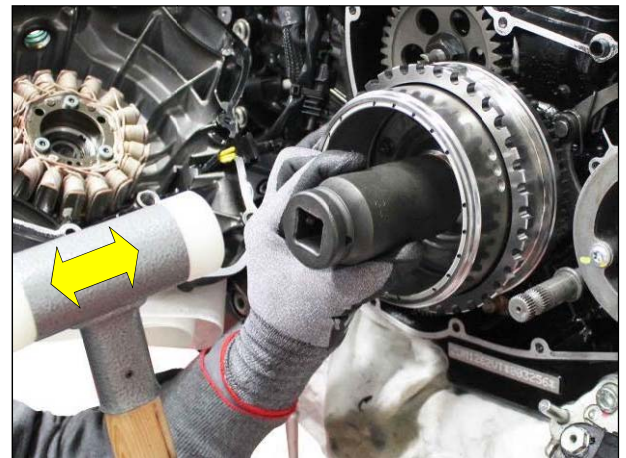
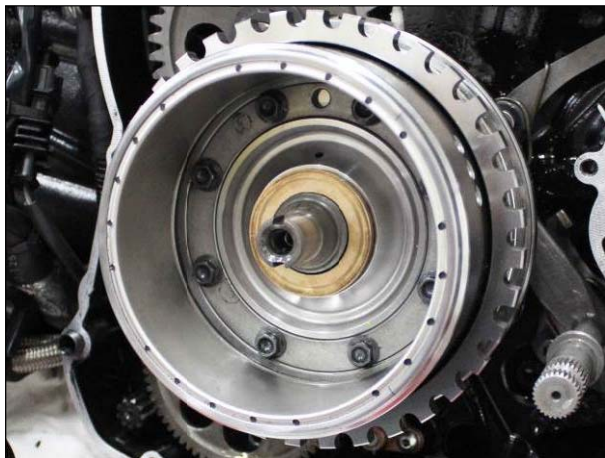
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

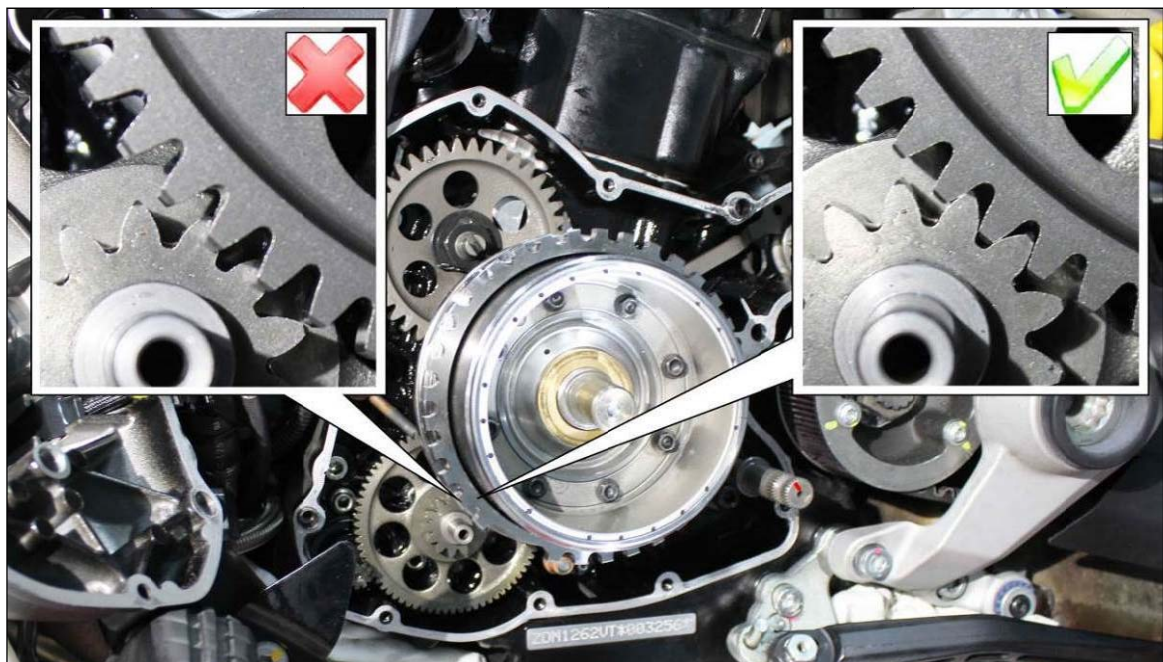
removed after this operation. For the final tightening use the washer (29) already on the engine and removed during the disassembly phase

Using a 34 mm bush and a hammer, drive the flywheel assembly fully home on the crankshaft.



ATTENTION

During this phase, make sure that the driven gear teeth are NOT overlaid on the intermediate starter gear teeth.



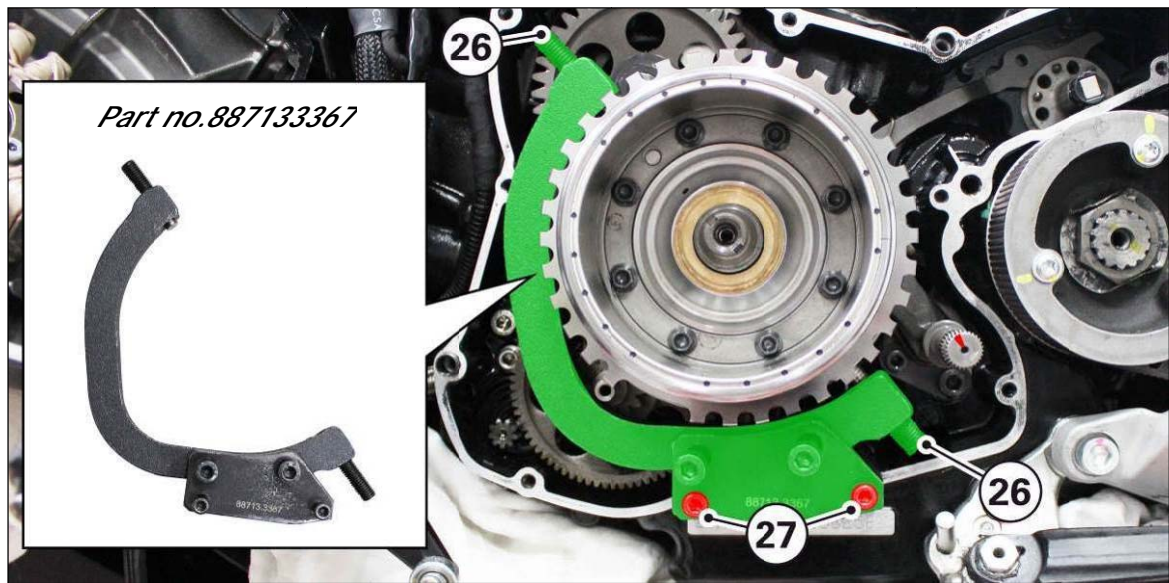


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

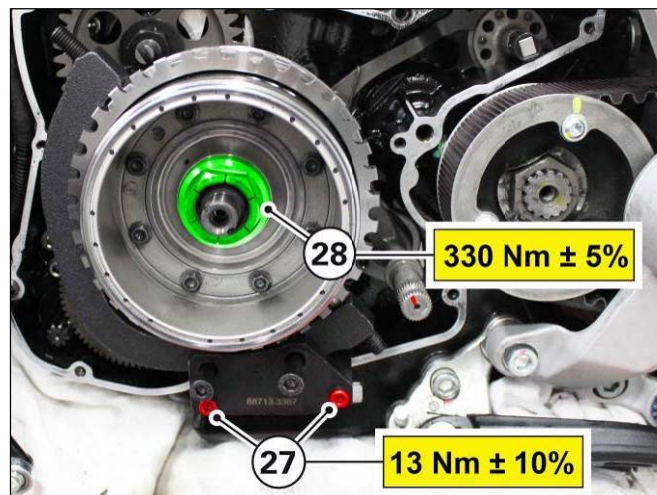
Recall Bulletin SRV-TSB-18-001

- 4) Install **special tool Part no.887133367** driving the **2 pins (26)** fully home in correspondence of the holes on the flywheel and start the **2 screws (27)**.



- 5) To tighten **nut (28)** follow the instructions below:

- tighten **nut (28)** with copper washer to a torque of **330 Nm \pm 5%**; during this phase it is necessary to tighten the **2 screws (27)** progressively;



- remove **nut (28)** and copper washer;



Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

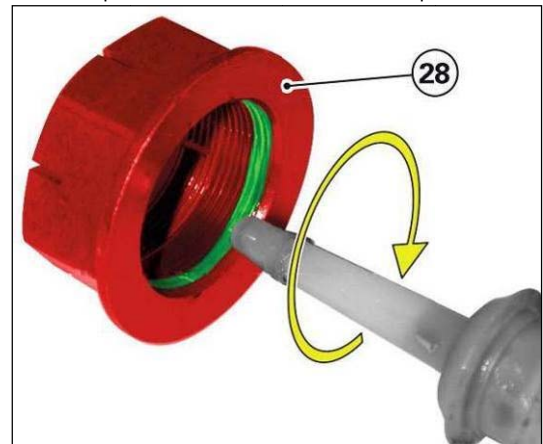
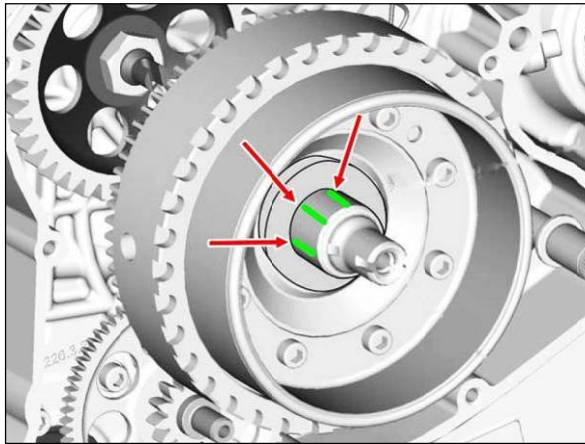
Recall Bulletin SRV-TSB-18-001

- insert the **steel washer (29)** previously removed;
- apply 3 beads of LOCTITE 648 on the crankshaft thread, as shown in the figure.
- apply LOCTITE 648 throughout **nut (28)** first 3 threads as shown in the figure.



ATTENTION

Do not exceed the quantity of LOCTITE 648 required and shown in the picture.

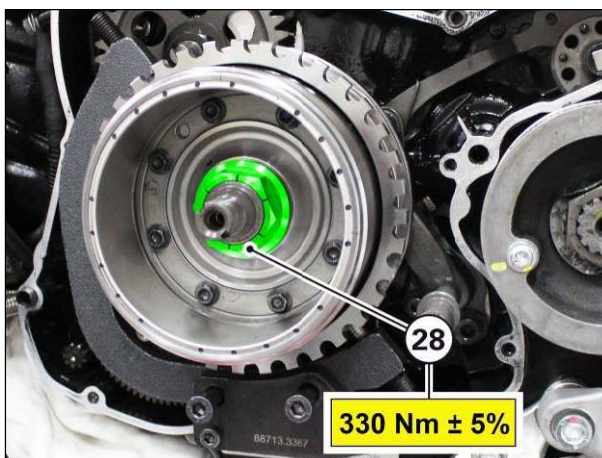


- Perform the final tightening of **nut (28)** to a torque of **330 Nm ± 5%**.



NOTE

Thoroughly clean the nut top side from LOCTITE 648 residues.





Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

6) Remove special tool Part no. 887133367.

d) Vehicle reassembly

1) Apply a bead of **ThreeBond 1207B black** sealing compound along the entire **surface (34)** of the crankcase coupled with the generator cover.



ATTENTION

Before applying ThreeBond 1207B black sealing compound check that:

- there is no dirt of any type inside the crankcase;
- there is no dirt of any type on the sealant application surface;
- the surface is well dry and if not run a clean cloth over it again.



2) Install the **generator cover (21)** within 5 minutes of applying the sealant and drive it fully home on the crankcase.



NOTE

Check that the stator cable retaining **rubber element (39)** is correctly fitted in the relevant seat on the **generator cover (21)**.





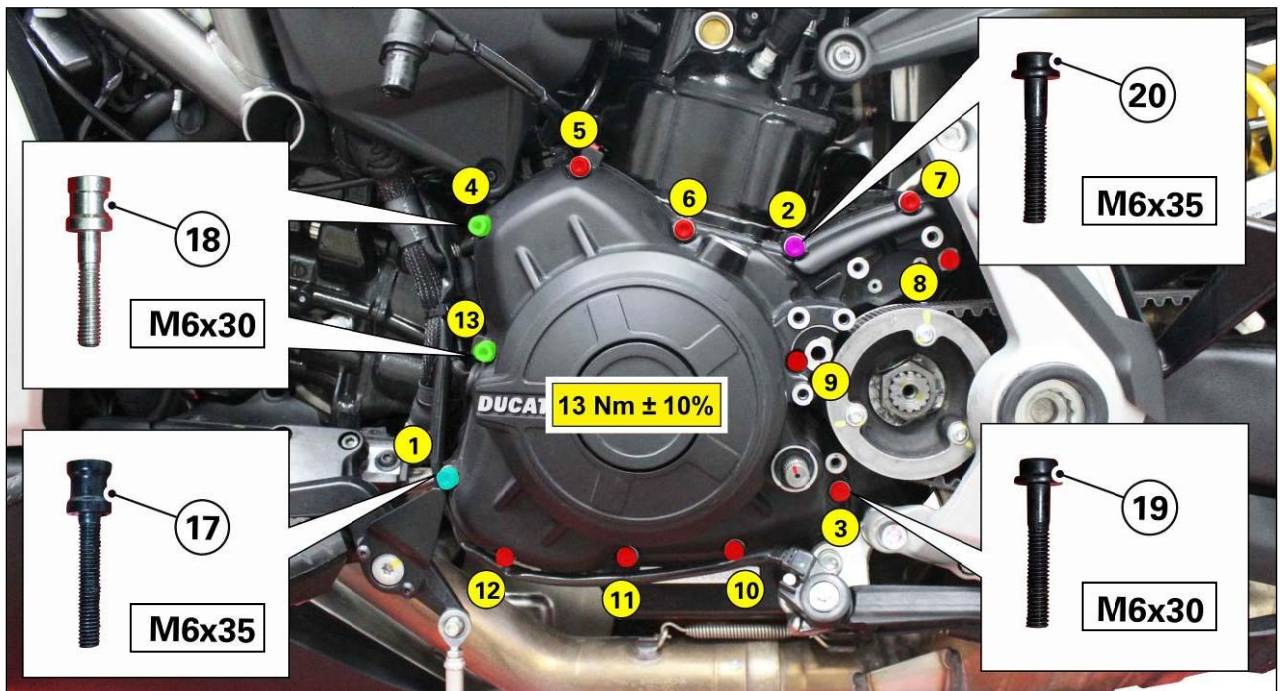
Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

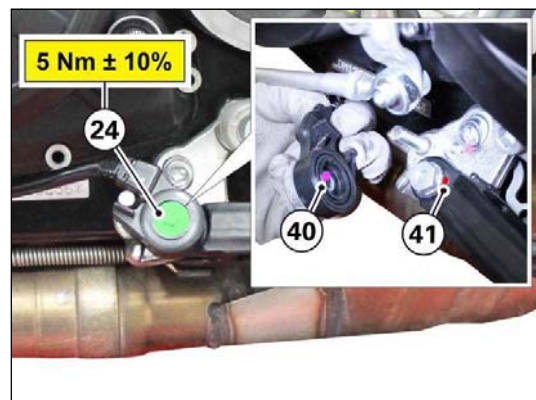
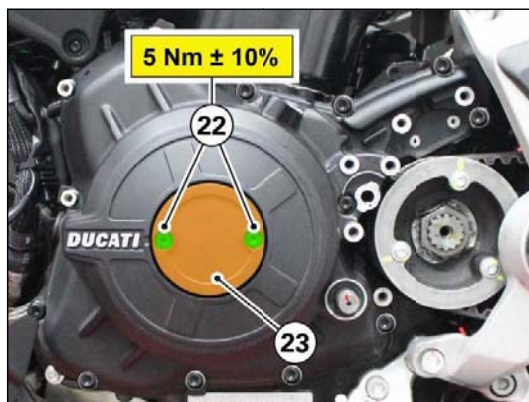
Recall Bulletin SRV-TSB-18-001

- 3) Start special screw M6X35 (17), the 2 special screws M6X30 (18), the 9 screws M6x30 (19) and screw M6x35 (20).

Tighten all the screws to a torque of **13 Nm ± 10%** following the sequence shown in the figure.



- 4) Fit timing inspection cover (23) by tightening the 2 screws M6x14 (22) to a torque of **5 Nm ± 10%**.
- 5) Fit the side stand switch by inserting the timing pin (40) of the switch in the hole (41) of the stand. Tighten the retaining screw M6X1 (24) to a torque of **5 Nm ± 10%**.



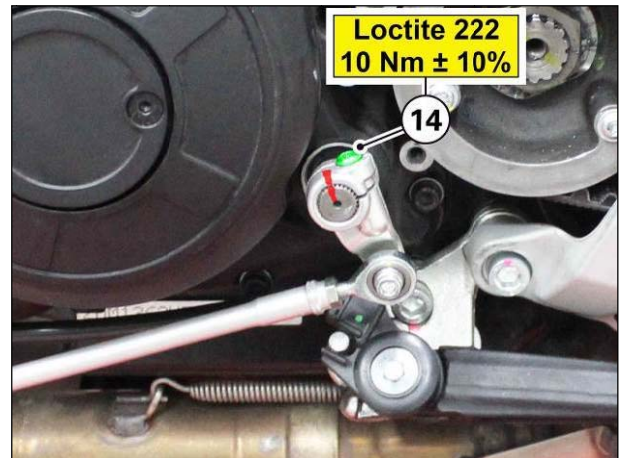
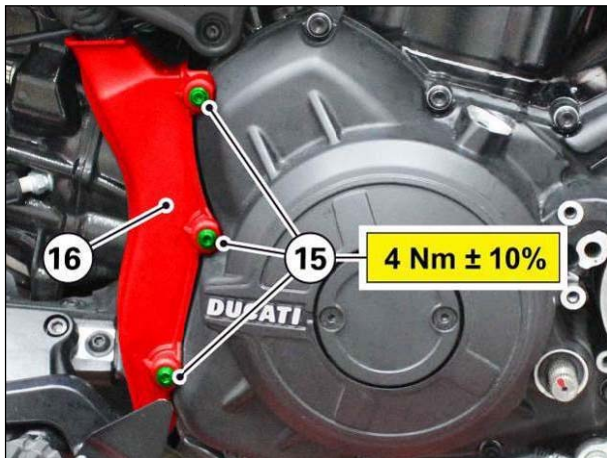


Starter Clutch and Flywheel Replacement

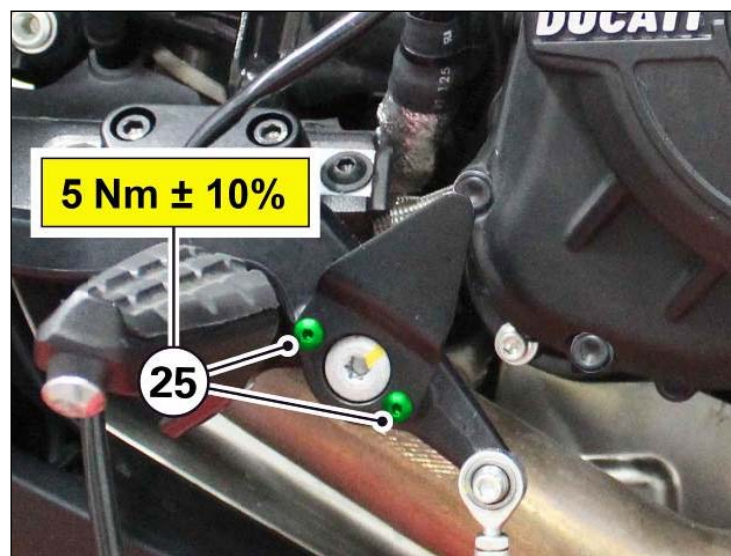
Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 6) Fit the **wiring cover (16)** by tightening the **3 screws M5x12 (15)** to a torque of **4 Nm ± 10%**.
- 7) Insert the gear shift lever on the gearbox selector shaft following the initial timing previously marked.
- 8) Apply Loctite 222 on the thread of **screw M6x18 (14)** and tighten to a torque of **10 Nm ± 10%**.



- 9) Fix LH front heel guard by tightening the **2 screws M5X10 (25)** to a torque of **5 Nm ± 10%**.



- 10) Release clutch slave cylinder, engine rpm sensor and gear sensor from the elastic band.

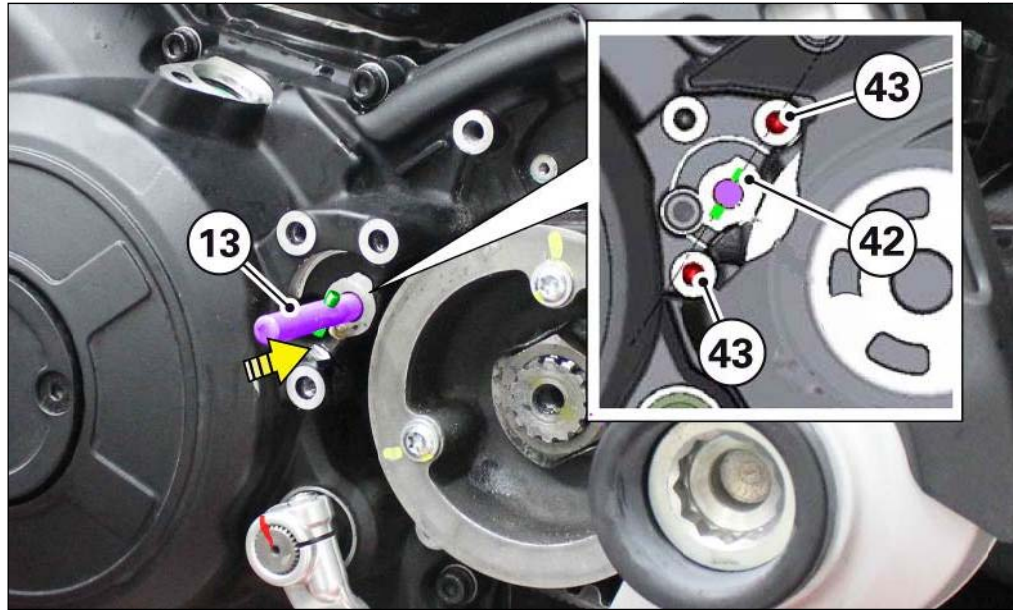


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

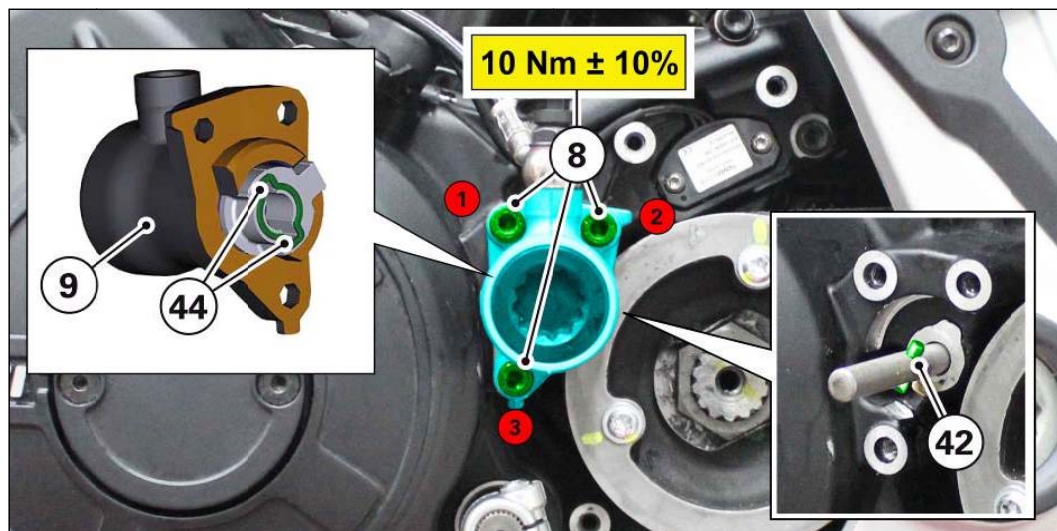
Recall Bulletin SRV-TSB-18-001

- 11) Insert clutch pushrod (13) aligning anti-rotation pin (42) with holes (43), as shown in the figure.



- 12) Fix clutch actuator (9), which includes the anti-rotation insert, on the clutch pushrod previously timed by inserting anti-rotation pin (42) into the seats (44) on the anti-rotation insert.

- 13) Tighten the 3 screws M6x16 (8) to a torque of 10 Nm ± 10%, following sequence 1 – 2 – 3 – 1.



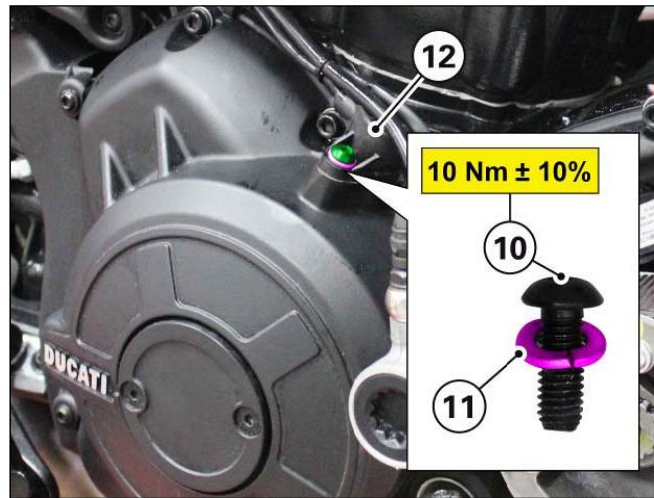


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

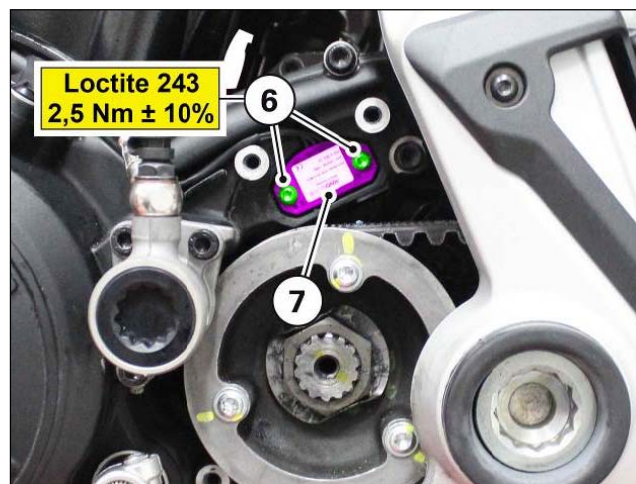
Recall Bulletin SRV-TSB-18-001

- 14) Fix engine rpm sensor (12) on generator cover by tightening screw M6x16 (10) with relevant spring washer (11) to a torque of 10 Nm ± 10%.



- 15) Position gear sensor (7) on the generator cover making sure that the label is visible, as shown in the figure.

Apply Loctite 243 on the threads of the 2 screw M4x16 (6) and tighten to a torque of 2.5 Nm ± 10%.



- 16) To install the driving pulley cover (5) it is necessary to:

- clean the threads of the 2 screws M6x25 (3) and of screw M6x16 (4) to remove the threadlocker previously applied;

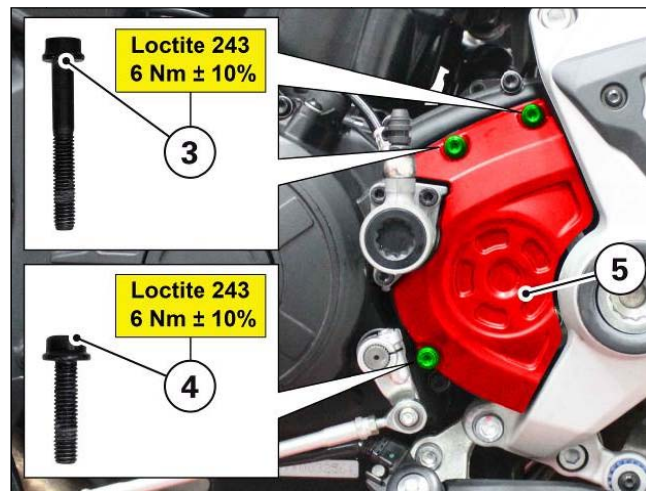


Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

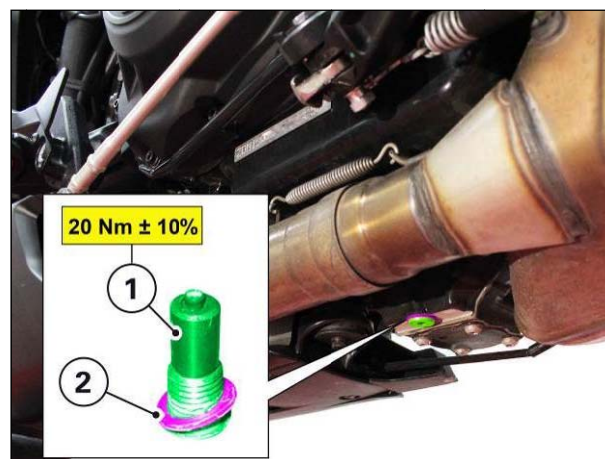
Recall Bulletin SRV-TSB-18-001

- apply Loctite 243 along the threads of the 2 screws **M6x25 (3)** and of screw **M6x16 (4)**;
- tighten the 2 screws **M6x45 (3)** and screw **M6x16 (4)** to a torque of **6 Nm ± 10%**.



17) Before inserting **drain cap (1)** with relevant **washer (2)**, it is necessary to:

- clean the entire thread of the cap;
- apply **ThreeBond 1215 grey** along the whole thread of the cap.
- tighten the **drain cap (1)** to a torque of **20 Nm ± 10%**.





Starter Clutch and Flywheel Replacement

Models: Model Year 2016-2017 XDiavel (all model and country versions)

Recall Bulletin SRV-TSB-18-001

- 18) Remove the filler cap and top up with the oil previously drained until it reaches the required level. Tighten the filler cap to a torque of **5 Nm ± 5%**.



- 19) Ensure that the side stand moves freely and check the correct operation of the safety switch.

- **Spare Parts**

The part number of the kit required for this update is as follows:

Part no.	Description	Q.ty	Image
69928312A	Flywheel and starter clutch kit	1	



Starter Clutch and Flywheel Replacement

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Recall Bulletin SRV-TSB-18-001

- **Warranty**

Reimbursement for work associated with this Service Campaign will be done through the regular warranty claim procedure using the Campaigns section of the DCS.

The warranty claim is pre-filled and is identified as **CR145**.

You will be reimbursed:

- for **150 minutes** of labor time (25 labor units) that includes the time necessary for:
 - bike reception;
 - installation of the flywheel and starter clutch Kit part no. 69928312A;
 - filling out the warranty claim.
- the relevant component required to carry out the operation **Part no.69928312A**.

Warranty Claims filled-in in a different way might be charged back to you during periodic Warranty Audits.

Thank you for your cooperation.

Service Department
Ducati North America, Inc.