



## CR172 – DQS sensor check and replacement (if required)

Panigale V4 (all model versions)

Technical Service Bulletin SRV-TSB-19-002

Date: February 14, 2019  
To: Dealer Principal, General Manager, Service Manager, North American Dealer Network  
From: Richard Kenton, Technical Director  
Eric Bradley, Technical Training and Publications Manager

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Dear Dealers,

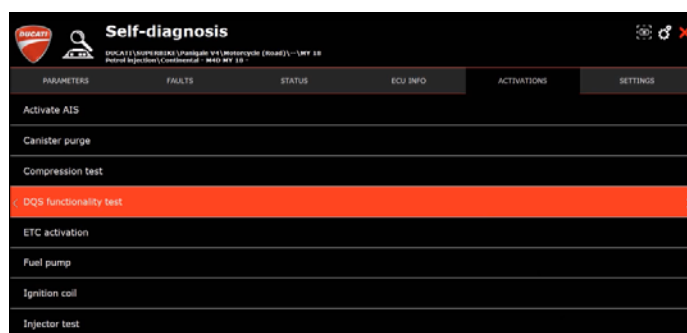
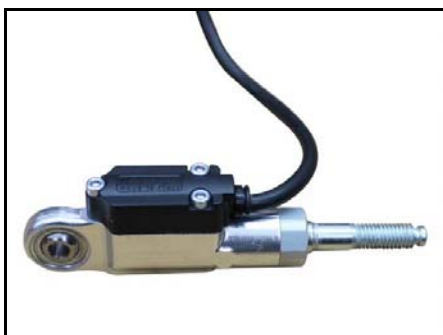
Due to ongoing quality tests and field reports, a potential malfunction was identified for the DQS (Ducati Quick Shift) sensor of the above-indicated model.

To check the correct operation of the DQS sensor and evaluate if replacement is required, it is necessary to perform a test using the DDS 2.0 diagnosis instrument. This test consists in recording the voltage value measured at the Quick Shift sensor input by the engine control unit (ECU) under three different conditions:

- DQS sensor in rest position (gear shift not activated)
- DQS sensor in up-shift position (up-shift request)
- DQS sensor in down-shift position (down-shift request)

At the end of the test, a table will be displayed showing the three voltage values measured by the engine control unit (ECU) followed by a message indicating the result: if the result is negative, the DQS sensor must be replaced.

This test is recorded in the DDS 2.0. Warranty reimbursements for the replacement of the DQS sensor without a negative result of the test will be denied.





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## Application

You can find the list of VIN numbers involved in CR172 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.

PANIGALE V4 RED 2018 CAL DMH					
VIN #	ZDMDAGNW4JB00 xxx	ENGINE #	AGNJ0 xxx	WTY END DATE	03/30/2020
END CUSTOMER	Corsa Moto Transport, Inc.	MANUFACT DATE	02/14/2018	INVOICE	02/20/2018
WARRANTY TYPE	Standard Warranty	WTY START DATE	03/31/2018	LAST MILEAGE	0 MI

**ATTENTION: YOU HAVE 1 PENDING RECALL CAMPAIGNS**

N	TYPE	ID NUMBER	REPAIR DATE	DEFECT	CAUSAL PART	DEALER	MILEAGE
1	CAMPAIGN	<a href="#">CR 172</a>		SRV-TSB-19-002 DQS sensor check and replacement (if required). PAN V4	DQS sensor	<input type="button" value="VIEW"/> <input type="button" value="APPLY"/>	

## Customer Impact

All motorcycles in dealer stock ('to be registered' or 'already registered') and awaiting delivery to final customers will require this inspection during pre-delivery operations, before delivery to the final customer. All motorcycles already delivered to final customers must undergo the below procedure at the next service appointment. Note: this is not a safety recall.

## Parts Distribution

The parts necessary to perform this Workshop Campaign CR172 **will not be auto shipped and must be ordered Individually by VIN**



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### Warranty reimbursement rules

Reimbursement for work associated with this Workshop Campaign will be made through the regular warranty claim procedure using the “VIN History” section of the DCS. The warranty claim is pre-filled and is identified as CR172. 2 operation types are defined below:

#### Operation TYPE 1

	Description	Spare Parts	Labor
TYPE 1	DQS sensor test	No Parts Required	■ minutes ■ LU)

#### Operation TYPE 2

	Description	Spare Parts	Labor
TYPE 2	DQS sensor test and replacement	Part no. 55215484C or later	■ minutes ■ LU)

Reimbursed labor includes time required for:

- Vehicle reception
- Connect DDS
- DQS sensor test, and replacement (if required)
- Soft cleaning of the motorcycle

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### Spare Parts

When required due to test failure, use component part no. 55215484C or later for replacement. Self-Locking ties used during replacement can be sourced from local vendors.

### Service Solution



#### WARNING

Always check the type of mounting of the gear shift lever before starting the test, in order to correctly perform the procedure during the Up-Shift or Down-Shift (“pull” or “press” respectively the gear shift lever)



#### WARNING

The test does not identify improper user operation of the gear shift lever. Repeat the test twice regardless of its outcome before replacing the DQS sensor to ensure accuracy

A video has been made showing you how to correctly perform the test. It can be viewed at the following link: <https://youtu.be/bXTxZvMKS2o>



### Part 1: Checking the DQS (Ducati Quick Shift) operation

1. Connect the DDS 2.0 to the motorcycle through the relevant diagnosis socket
2. Enter section “ECU self-diagnosis” and select “Activations”
3. Select “DQS operation test” and press “Start”





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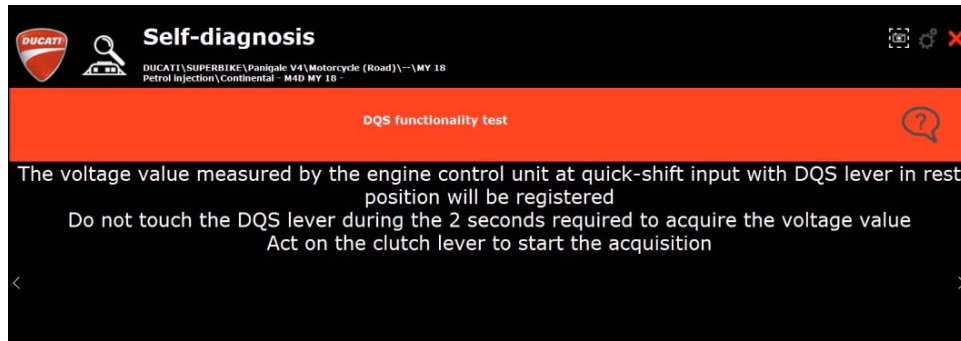
**Test 1:** Recording the voltage value measured by the engine control unit (ECU) at the Quick Shift sensor input with gear shift lever in “rest conditions”



## NOTE

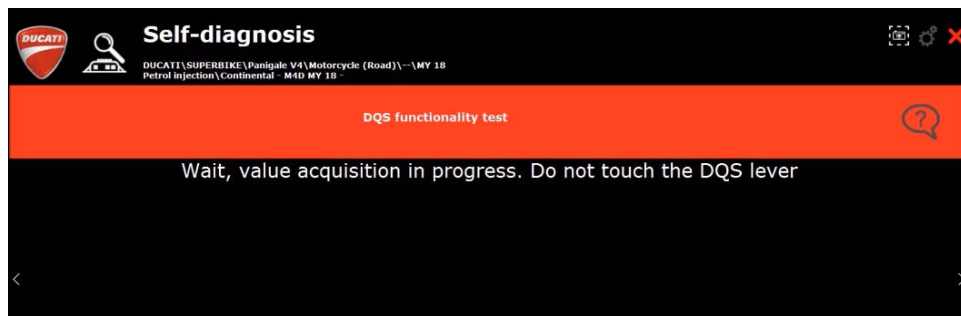
DQS gear shift lever in “rest conditions” means that the gear lever must not be operated

1. Pull the clutch lever to start the acquisition

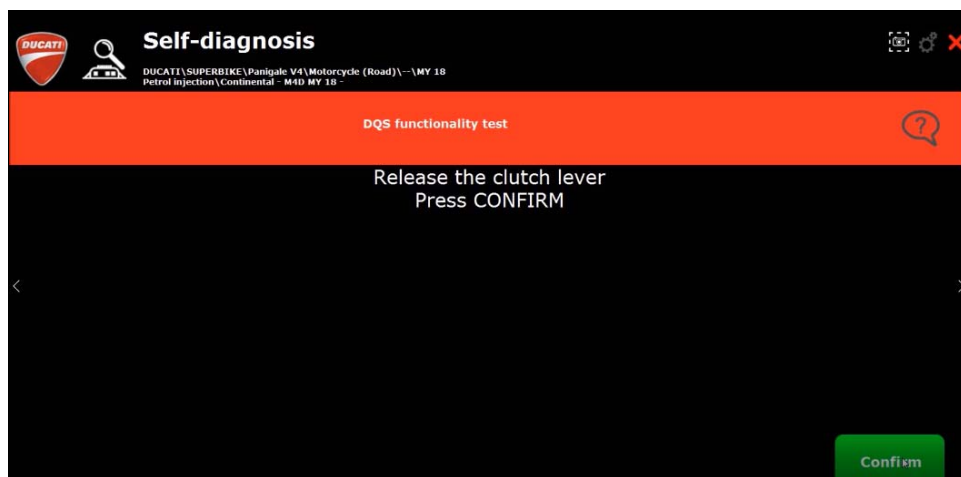


## WARNING

Do not touch the DQS shift lever during the 2 seconds necessary to acquire the voltage value



2. Release the clutch lever and confirm





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**Test 2:** Recording the voltage value measured by the engine control unit (ECU) at the Quick Shift sensor input with gear shift lever in "UP-SHIFT conditions"



### NOTE

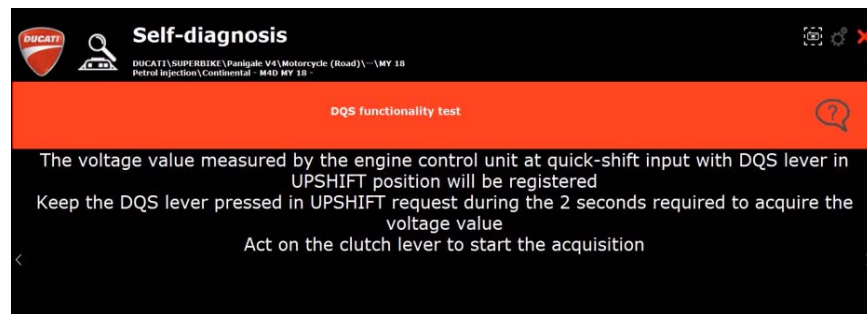
To position the gear shift lever in the "UP-SHIFT position" it is necessary to "pull" it completely upwards to engage a higher gear



### WARNING

In case of reversed shift, make sure that a high gear is engaged correctly by "pushing" the gear shift lever down in this case

1. Pull the clutch lever to start the acquisition



### WARNING

Keep the gear shift lever "pulled" ("pressed" in case of reversed shift) until the next indication appears on the display.



2. Release the clutch and gear shift lever and confirm





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**Test 3:** Recording the voltage value measured by the engine control unit (ECU) at the Quick Shift sensor input with gear shift lever in "DOWN-SHIFT conditions"



### NOTE

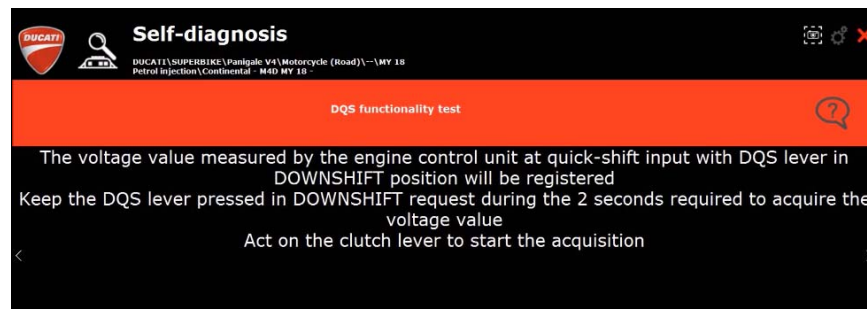
To position the gear shift lever in the "DOWN-SHIFT position" it is necessary to "press" it down completely to engage a lower gear



### WARNING

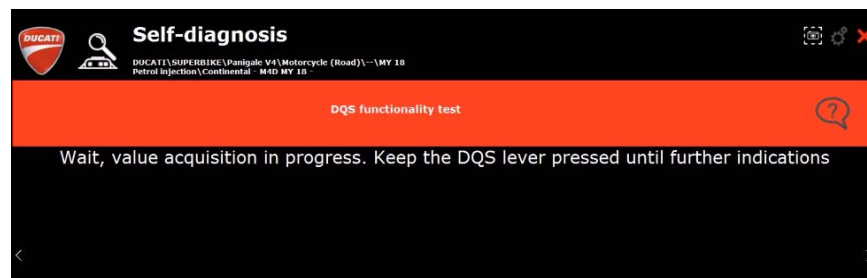
In case of reversed shift, make sure that a low gear is engaged correctly by "pulling" the gear shift lever up in this case

1. Pull the clutch lever to start the acquisition



### WARNING

Keep the gear shift lever "pressed" ("pulled" in case of reversed shift) until the next indication appears on the display



2. Release the clutch and gear shift lever and confirm.





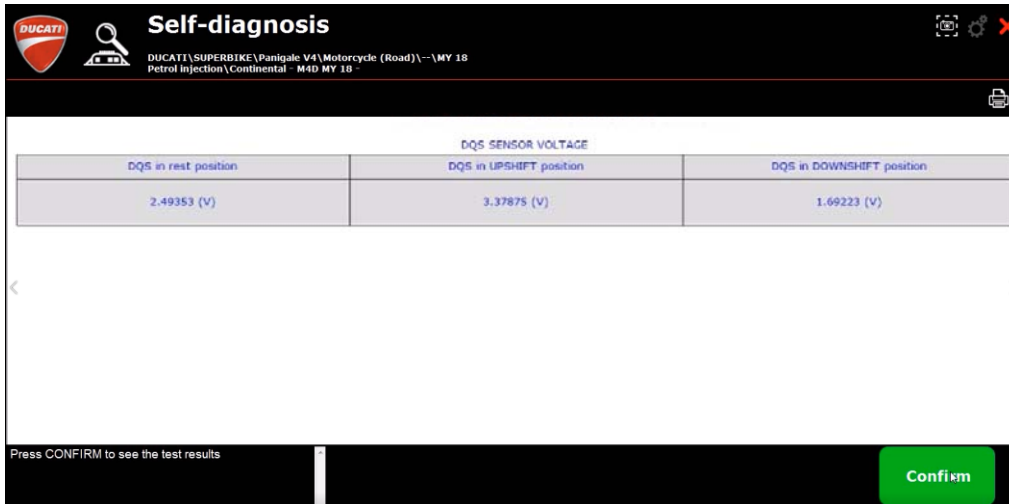


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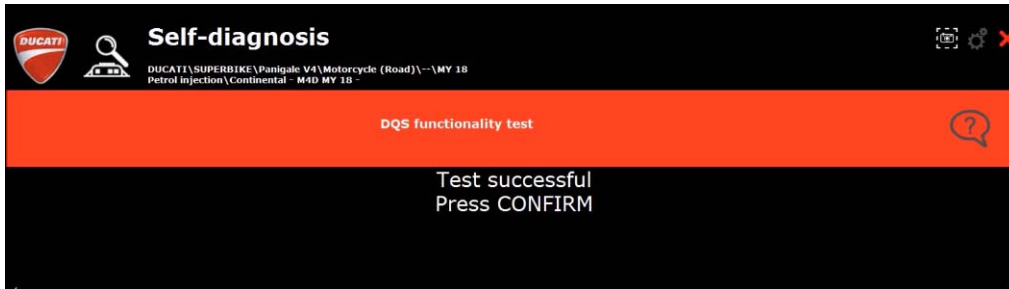
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- At the end of the test, a table will be displayed showing the 3 detected voltage values; to display the test result, select "Confirm".



**Type 1:** If the test result is **Positive**, the DQS sensor works correctly and it is **NOT** necessary to replace it



**Type 2:** If the test result is **Failed**, there is a malfunction in the DQS sensor and it is necessary to replace it







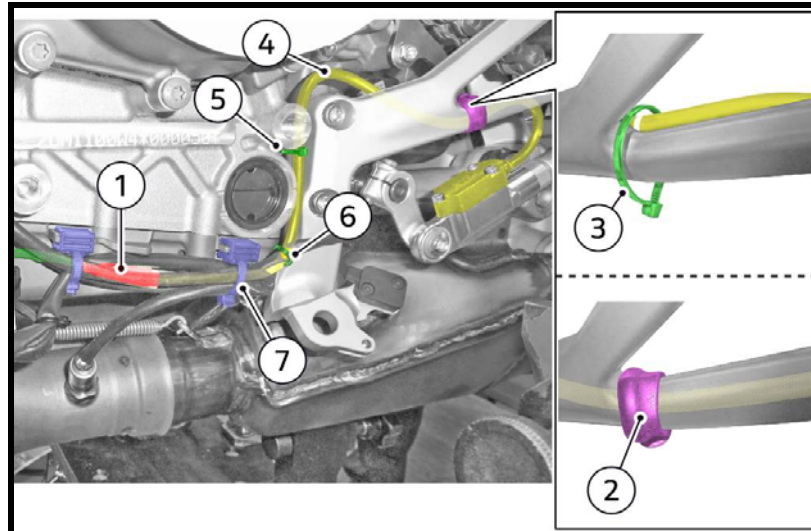
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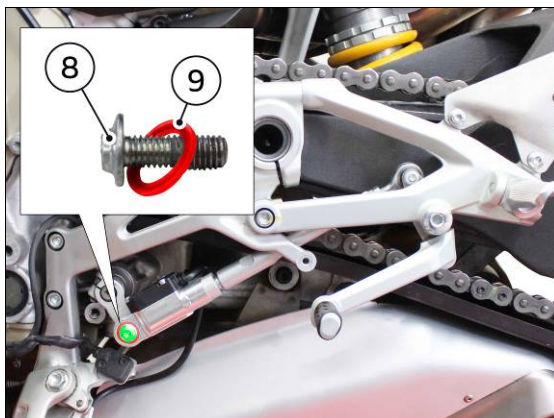
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### Part 2: Replacing the DQS (Ducati Quick Shift) sensor (when required)

1. Remove the LH lower half-fairing (see Sec. 5: "Fairing installation - Fairing" of the Workshop Manual)
2. Disconnect the **DQS sensor connector (1)** and remove:
  - the **button tie (2)** L.39 mm and the **self-locking tie (3)** that fix the **DQS cable (4)** to the footpeg holder plate;
  - the **self-locking tie (5)** that fixes the DQS cable to the gear sensor cable;
  - the **self-locking tie (6)** that fixes the DQS cable, the gear sensor cable and the side stand cable;
  - the **special Hellermann tie (7)** that fixes the DQS cable, the front lambda sensor cable, the gear sensor cable and the side stand cable



3. Remove the **M6x18 screw (8)** with the relevant **Teflon washer (9)**
4. Remove the **2 M8x22 screws (10)** securing the front left footpeg holder plate (11)





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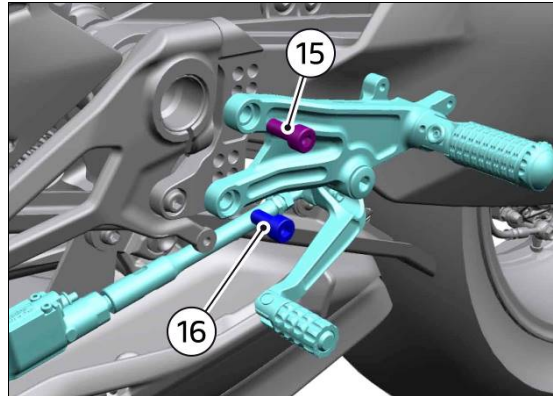
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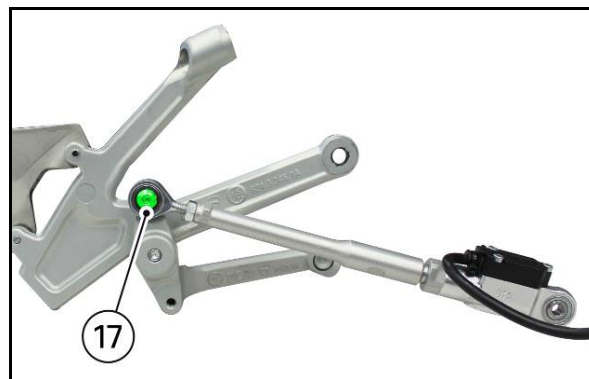
### NOTE

For the Panigale V4 Speciale model, to remove the front left footpeg holder plate assembly it is necessary to remove the **M8x20 screw (15)** and the **M8x16 screw (16)**.

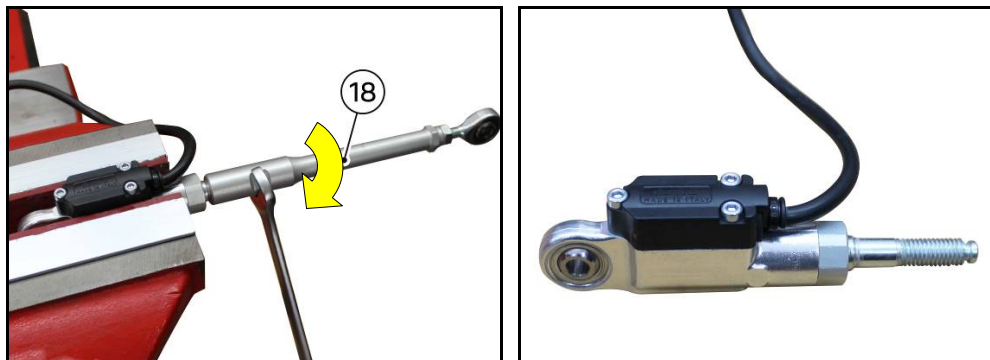
Before removing the front left footpeg holder plate assembly, mark the holes where the Customer has decided to position the plate



5. Remove the **M6x18 screw (17)** that fixes the gear change linkage



6. Place the DQS sensor in a vice and release the sensor from the **gear change linkage (18)** by turning it clockwise as shown in the figure





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7. Take the new DQS sensor (A) part no. 55215484C or later
8. Install the new DQS sensor (A) on the gear change linkage (18), by the following:
  - 8.1 Place the new DQS sensor (A) 47 in a soft jaw vice
  - 8.2 apply Loctite 222 to the threaded pin and screw in the gear change linkage (18) by turning it counter clockwise
  - 8.3 tighten the gear change linkage (18) to  $15 \text{ Nm} \pm 10\%$



### WARNING

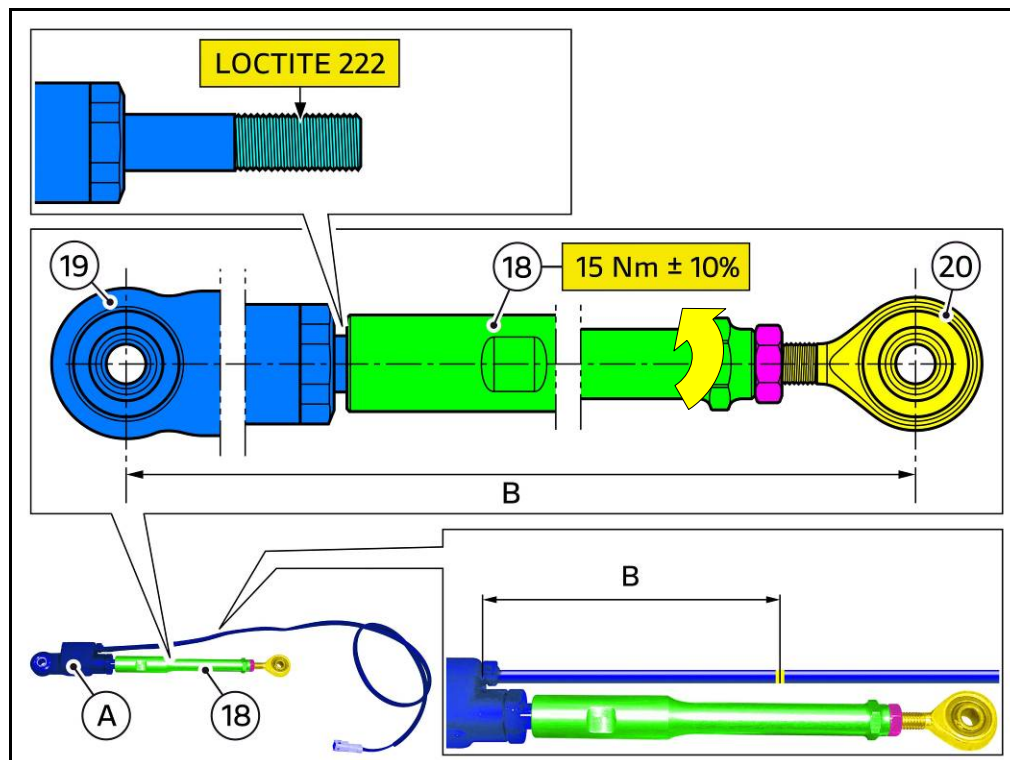
Check that the ball joint (19) of the DQS sensor (A) and the ball joint (20) are aligned on the same plane as shown in the figure on the following page

Check that the distance between centers (B) of the two ball joints is equal to:

-  $221.3 \pm 0.3 \text{ mm}$  (Panigale V4 – Panigale V4 S versions, only);

-  $217 \pm 1 \text{ mm}$  (Panigale V4 Speciale version, only).

9. Mark the DQS cable with a marker at 106 mm as shown in the figure



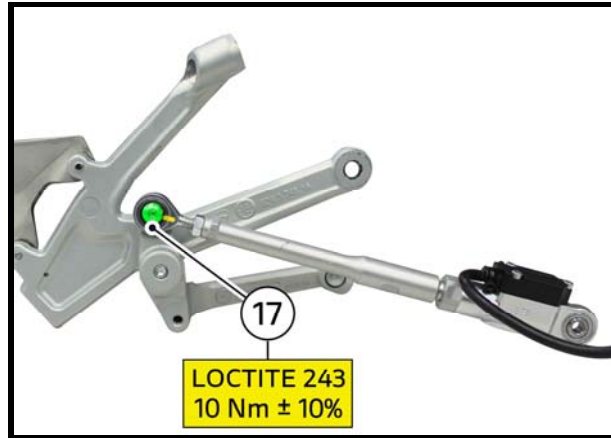


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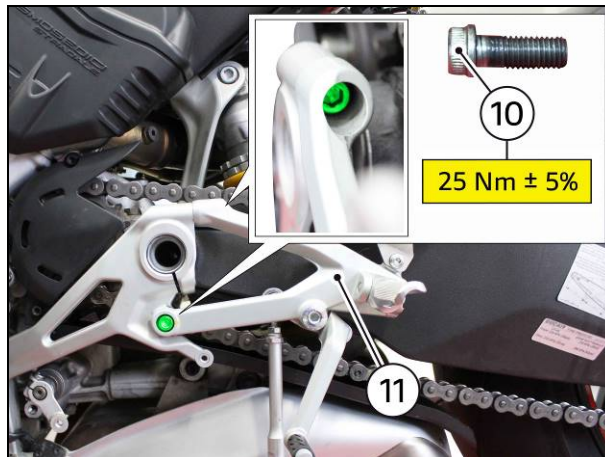
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10. Install the DQS sensor-gear change linkage assembly on the left front footpeg holder plate. Apply LOCTITE 243 along the threading of the upper M6x18 screw (17)
11. Tighten the M6x18 screw (17) to 10 Nm  $\pm$  10% and certify



12. Install the front left footpeg holder plate (11) and tighten the 2 M8x22 fixing screws (10) to 25 Nm  $\pm$  5% by applying GADUS S2 V220 AD 2 grease (or equivalent) to the thread and certify







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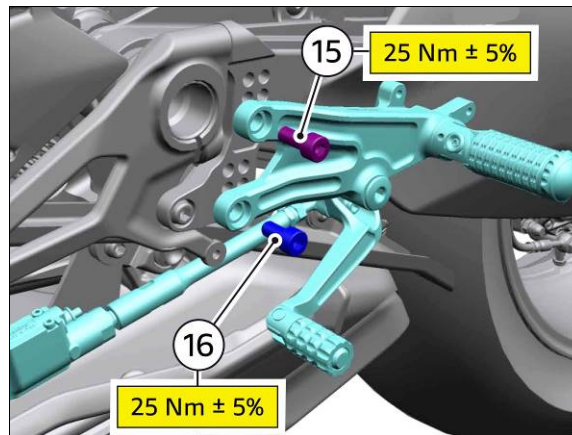
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### NOTE

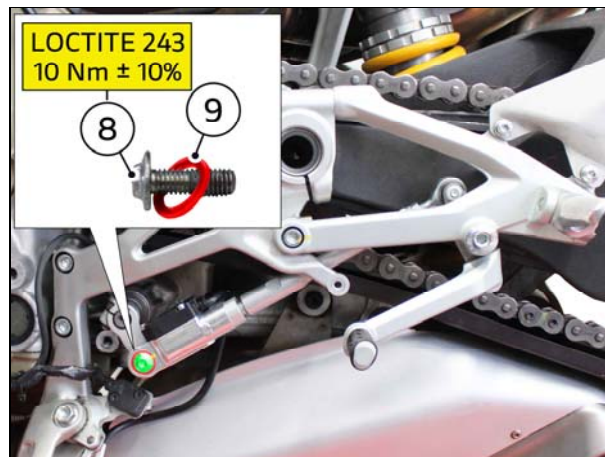
For the Panigale V4 Speciale version, tighten the **M8x20 screw (15)** and the **M8x16 fixing screw (16)** to **25 Nm ± 5%** by applying GADUS S2 V220 AD 2 grease to the thread and certify

Position the front left footpeg holder plate assembly in correspondence to the holes previously marked with the marker.



13. Apply LOCTITE 243 along the thread of the M6x18 screw (8)

14. Fix the DQS sensor to the gear change lever by tightening the **M6x18 screw (8)** with its **Teflon washer (9)** to **10 Nm ± 10%** and certify



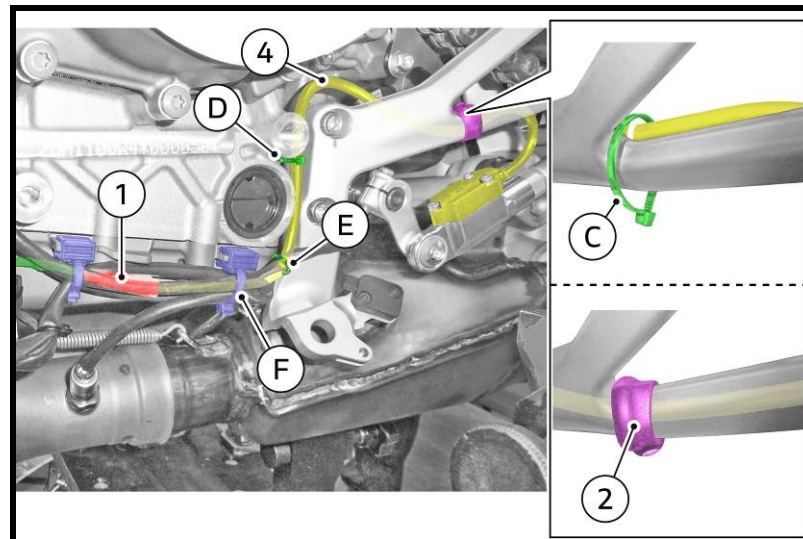


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15. Arrange the **DQS cable (4)** as shown in the figure and fix it as follows:
  - 15.1 Apply the **small self-locking tie (C)** that fixes the **DQS cable (4)** to the footpeg holder plate in correspondence of the previously made marking and fit the **L.39 mm button tie (2)** on the **small self-locking tie (C)**
  - 15.2 Apply the **small self-locking tie (D)** that fixes the DQS cable to the gear sensor cable
  - 15.3 Apply the **small self-locking tie (E)** that fixes the DQS cable, the gear sensor cable and the side stand cable
  - 15.4 Apply the **Hellermann special tie (F)** that fixes the DQS cable, the gear sensor cable and the side stand cable
  - 15.5 Connect the **DQS connector (1)**



16. Install the LH lower half-fairing (see Sec. 5: "Fairing installation - Fairing" of the Workshop Manual)
17. Connect DDS and clear relevant fault codes.

Should you have any questions on this Service Campaign,  
please contact your Service Area Manager.