

Updated Cable Length & Voltage Values for the GSX-R1000/R EXCV System

Affected Departments: Management, Service

Affected Models: 2017 ~ 2023 GSX-R1000/1000R models
(GSX-R1000/A/RL7 ~ GSX-R1000A/RA/RAZM3)

Reference: GSX-R1000/1000R Service Manual (99500-39421-03E) &
[Service Bulletin GS/GSX/GSX-R No. 257 Service Information - EXCV Adjustment](#)

Based upon support calls from dealerships, Suzuki has become aware there is confusion on how to properly adjust the Exhaust Control Valve (EXCV) cables on 2017 - 2023 GSX-R1000/A/R models. For optimal adjustment, use the updated cable installation lengths and voltage settings in this bulletin in conjunction with the procedures in the Service Manual when servicing the EXCV cables.

Additional note:

If you encounter a GSX-R1000 that makes a loud clattering sound from the exhaust system when the transmission is shifted into gear, check the front EXCV-alpha cable adjustment (beginning on page 1K-13 in the Service Manual). This metallic-like sound is caused by improper clearance from lack of maintenance.

EXCVA/EXCV No. 1 & No. 2 Cable Length Adjustment

Adjust the EXCVA/EXCV cables to the new recommended lengths.

Follow the **EXCVA/EXCV Cable No. 1 & No. 2 Removal and Installation** procedure as described on Service Manual pages 1K-8 through 1K-13. Use the cable lengths listed below in place of the lengths on page 1K-11.

NOTE:

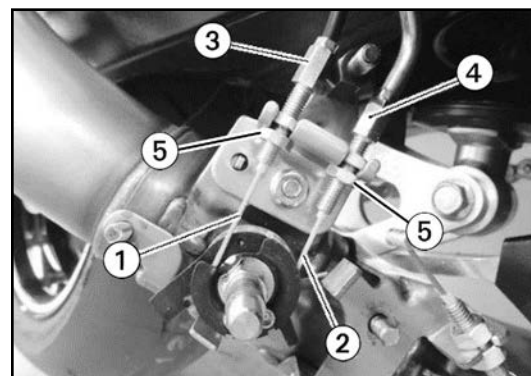
Before removing or adjusting any cables, be sure to set the EXCVA pulley to the middle (Adjustment Position **A**) as described in steps 4 through 7 on page 1K-8.

Measure cable lengths "a" and "b" when cables No. 1 and No. 2 are removed from the EXCVA and its cable pulley.

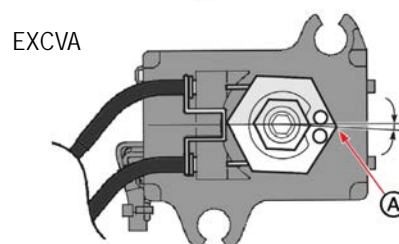
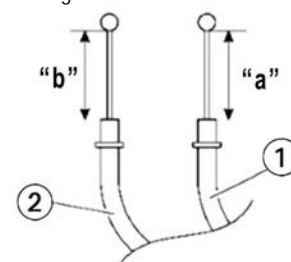
1. Adjust the inner cable length "a" of the No. 1 cable ① to **41.0 mm ± 0.5 mm (1.60 - 1.63 in.)** by turning the cable adjuster ③.
2. Adjust the inner cable length "b" of the No. 2 cable ② to **47.0 mm ± 0.5 mm (1.84 - 1.87 in.)** by turning the cable adjuster ④.
3. Following adjustment, tighten the EXCV cable lock-nuts ⑤ to the specified torque.

Tightening torque

EXCV cable lock-nut ⑤: **3.35 lb-ft (4.5 N.m, 0.46 kgf-m)**



Measure cable lengths after removal from EXCVA pulley



EXCVA Voltage Adjustment

Adjust the EXCV cables so the EXCVA position sensor detects the proper voltage.

Use these updated EXCVA voltage values and adjustment recommendations in addition to the procedures that begin on page 1K-21 in the Service Manual.

NOTE

The SDS-II diagnostic tool is essential for proper voltage adjustment.



09904-41030

SDS-II Diagnostic Tool Set



09904-41071

Conversion cable

1. Use the conversion cable special tool to connect the SDS-II Diagnostic Tool to the motorcycle's diagnostic coupler.
2. Turn the ignition switch and the SDS-II tool ON.
3. After successfully establishing communication between the SDS-II tool and the motorcycle, navigate to the Active Control menu and select "Exhaust valve drive control", and then select "Fully closed" from the Exhaust valve drive control menu.

4. Use a multimeter and needle point style leads to back probe into the wires of the EXCVA electrical coupler ① to measure the EXCVA position sensor voltage between the yellow wire and the white wire at the EXCV fully closed position.

Coupler wire colors:

⊕ Yellow wire

⊖ White wire

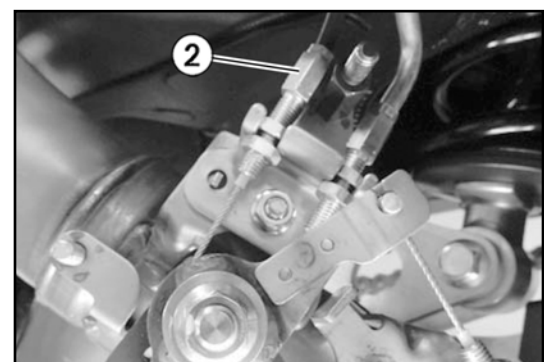
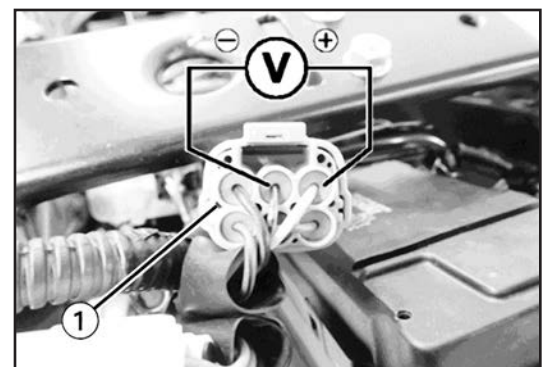
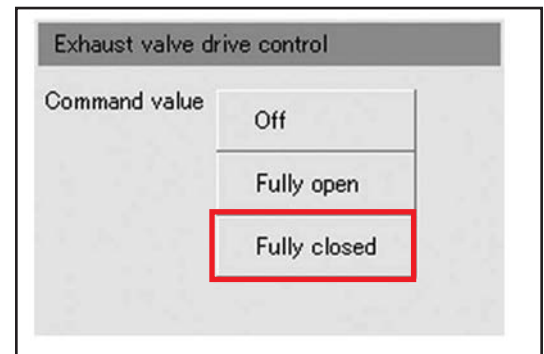
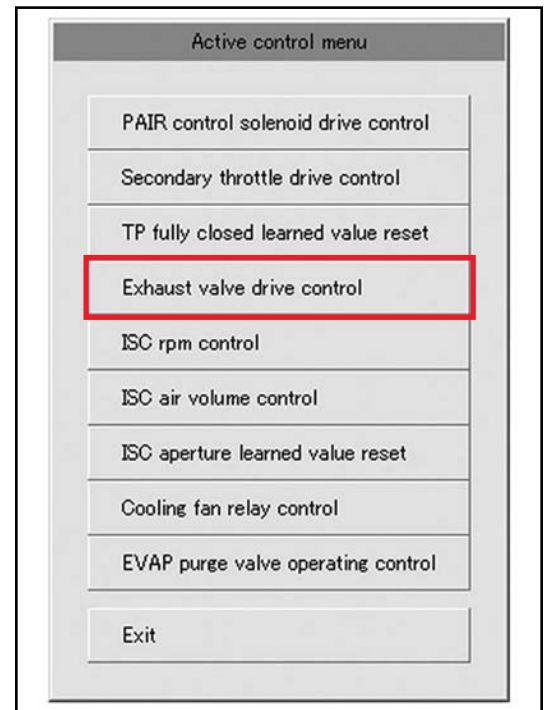
EXCVA position sensor output voltage

Closed [Standard]: 0.45 - 0.95 V

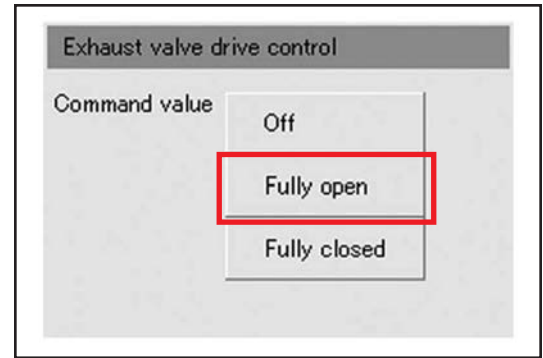
5. Even if the voltage is within specification, set it to the middle of the range: **0.7 V**.
6. Remove the right side cowling (section 9D) and then remove the EXCV cover (page 1K-22).
7. Rotate the No. 1 cable adjuster ② in or out to set the voltage to **0.7 V**.

EXCVA position sensor output voltage

Closed [Standard]: 0.45 - 0.95 V



8. Use the SDS-II tool to select "Exhaust valve drive control" from the tool's Active Control menu, and then select "Fully open" from the Exhaust valve drive control menu.



9. Back probe into the wires of the EXCVA electrical coupler ① to measure the EXCVA position sensor voltage between the yellow wire and the white wire at the EXCV fully open position.

Coupler wire colors:

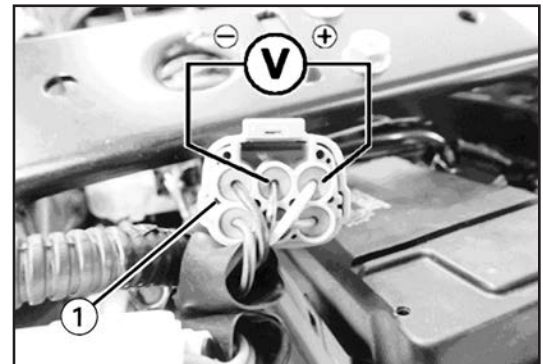
⊕ **Yellow wire**

⊖ **White wire**

10. Even if the voltage is within the specified range, rotate the No. 2 cable adjuster ② in or out to set the voltage to the middle of the range: **4.30 V**.

EXCVA position sensor output voltage

Opened [Standard]: 4.05 - 4.55 V



11. For optional EXCV operation, the difference between the fully closed & fully open voltage should be **3.1 V** or more.

EXCVA position sensor output voltage

Target voltage difference between open & closed: 3.1 V or more.

12. Following any EXCV service, verify that the FI alert icon is not indicated and no EXCV-related trouble codes (DTC) are detected by the SDS-II diagnostic tool.

13. If no DTC P1403 is active on the SDS-II tool display, the EXCV cable and voltage adjustment was performed correctly.

14. If the "FI" trouble light is illuminated on the instrument panel and DTC "P1403" is displayed as active in the SDS-II, repeat steps 3 through 13 (details listed on page 1A-70 in the Service Manual).



15. Once the adjustment is fully complete, replace all the removed parts and perform a thorough test ride to verify proper function.

If you have any questions related to these service recommendations, please call TECH-LINE at (714) 996-7480 or contact your Technical Service & Parts Manager (TSPM).

The Suzuki Service Department