ATTENTION:
GENERAL MANAGER ❑
PARTS MANAGER ❑
CLAIMS PERSONNEL ❑
SERVICE MANAGER ❑

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

SUBARU

QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2010-20MY Legacy and Outback
2012-20MY Impreza
2012-20MY Crosstrek
2013-20MY Forester
2015-20MY WRX
2019-20MY Ascent

NUMBER: 16-131-20

DATE: 11/09/2020

SUBJECT: Updated CVT Diagnostics for DTCs: P0962, P0966, P0970, P0973, P0976, P2720, P2729, P2764, P2769, P0963, P0967, P0971, P0974, P0977, P2721, P2730, P2763 and P2770

INTRODUCTION:

This Service Information Bulletin provides corrected diagnostics containing a revised flow for certain CVT solenoid related DTCs as listed below. The "generic" Service Procedures are provided in the screenshots below but, the specific connector and terminal numbers have been left out as they will vary from vehicle to vehicle.

SERVICE PROCEDURE / INFORMATION:

REMINDER: Customer satisfaction and retention starts with performing quality repairs.

There are two sets of corrected / updated diagnostics based on the TCM location in the vehicle:

- **Group "A":** For vehicles where the Transmission Control Module (TCM) is located either inside the cabin or in the engine compartment.
- **Group "B"**: For use when the TCM is located inside the transmission assembly itself.

For both sets of diagnostics, there are 2 groups of DTCs associated with each, "**LOW**" and "**HIGH**".

- **LOW** DTCs: P0962, P0966, P0970, P0973, P0976, P2720, P2729, P2764 and P2769
- **HIGH** DTCs: P0963, P0967, P0971, P0974, P0977, P2721, P2730, P2763 and P2770.

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Four diagnostic charts are provided below:

1) Use for **Group A** vehicles with **LOW** DTCs

2) Use for **Group A** vehicles with **HIGH** DTCs

3) Use for **Group** B vehicles with **LOW** DTCs

4) Use for **Group B** vehicles with **HIGH** DTCs

VERY IMPORTANT: Always note the results of each troubleshooting step as it is completed. These notes are required as part of any repair claim. Where applicable, always note the CVTF temperature when the specified check is completed.

1) Diagnostic Chart for use in diagnosing Group A vehicles with LOW DTCs:

	Step	Check	Yes	No
1	Solenoid* check (CVTF is cool around 20 degrees C) 1) Check CVTF temperature using SSM around 20 degrees or room temperature. 2) IG off 3) Disconnect TCM connector. 4) Measure the resistance between TCM connector and transmission body.**	Is the resistance approx. X***—X***Ω? (when cold)	Go to 2	Go to 3
2	Solenoid* check (CVTF is hot around 80 degrees C and over) 1) Connect TCM connector 2) Warm up CVTF up to 80 degrees using SSM 3) Disconnect TCM connector 4) Measure the resistance between TCM connector and transmission body.****	Is the resistance under value in step1? (when hot)	Go to 3	Repair the poor contact of connector. If contact is OK, replace TCM.
3	Check Harness (Earth short) 1) Disconnect TCM connector 2) Measure the resistance between TCM connector and Body earth.******	Is the resistance over 1MΩ?	Go to 4	Repair Harness
4	Check Harness Internal Transmission **CAUTION:** Start work after ATF cools down. 1) Remove the transmission valve cover. 2) Check Harness condition	Is any damage or pinching?	Repair Harness	Go to 5
5	Check Transmission harness (Earth short) 1) Disconnect Control valve body connector 2) Measure the resistance between TCM connector and Control valve body connector.******	Is the resistance over 1MΩ?	Replace Control valve body	Repair Harness

NOTE* Solenoid name is referring to each vehicle Service Manual.
NOTE** Connector pin is referring to each vehicle Service Manual
NOTE*** Resistance value is referring to each vehicle Service Manual.
NOTE**** Connector pin is referring to each vehicle Service Manual.
NOTE***** Connector pin is referring to each vehicle Service Manual
NOTE***** Connector pin is referring to each vehicle Service Manual

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2) Diagnostic Chart for use in diagnosing Group A vehicles with HIGH DTCs:

	Step	Check	Yes	No
1	Solenoid* check (CVTF is cool around 20 degrees C) 1) Check CVTF temperature using SSM around 20 degrees or room temperature. 2) IG off 3) Disconnect TCM connector. 4) Measure the resistance between TCM connector and transmission body.**	Is the resistance approx. X***—X***Ω? (when cold)	Go to 2	Go to 3
2	Solenoid* check (CVTF is hot around 80 degrees C and over) 1) Connect TCM connector 2) Warm up CVTF up to 80 degrees using SSM 3) Disconnect TCM connector 4) Measure the resistance between TCM connector and transmission body.****	Is the resistance over 1MΩ?	Go to 3	Repair the poor contact of connector. If contact is OK, replace TCM.
3	Check Harness (Open circuit) 1) Disconnect transmission connector 2) Measure the resistance between TCM connector and transmission connector.*****	Is the resistance under 1Ω?	Go to 4	Repair Harness
4	Check Harness (power supply short) 1) IG on 2) Measure the voltage between TCM connector and Body earth.******	Is the voltage approx. 0V?	GO to 5	Repair Harness
5	Check Harness Internal Transmission **CAUTION:** Start work after ATF cools down. 1) Remove the transmission valve cover. 2) Check Harness condition.	Is any damage or pinching?	Repair Harness	Go to 6
6	Check Transmission harness (open circuit) 1) Disconnect Control valve body connector 2) Measure the resistance between transmission connector and Control valve body connector.*******	Is the resistance under 1Ω?	Go to 7	Repair Harness
7	Check Transmission harness (open circuit) 1) Disconnect Control valve body connector 2) Measure the resistance between TCM connector and Control valve body connector.*********	Is the voltage approx. 0V?	Replace Control valve body	Repair Harness

NOTE* Solenoid name is referring to each vehicle Service Manual.
NOTE** Connector pin is referring to each vehicle Service Manual.
NOTE*** Resistance value is referring to each vehicle Service Manual.
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NOTE******* Connector pin is referring to each vehicle Service Manual.
NOTE******** Connector pin is referring to each vehicle Service Manual

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3) Diagnostic Chart for use in diagnosing Group B vehicles with LOW DTCs:

	Step	Check	Yes	No
1	Solenoid* check (CVTF is cool around 20 degrees C) 1) Check CVTF temperature using SSM around 20 degrees or room temperature. 2) IG off 3) Disconnect TCM connector. 4) Measure the resistance between TCM connector and transmission body.**	Is the resistance approx. X***—X***Ω? (when cold)	Go to 2	Go to 3
2	Solenoid* check (CVTF is hot around 80 degrees C and over) 1) Connect TCM connector 2) Warm up CVTF up to 80 degrees using SSM 3) Disconnect TCM connector 4) Measure the resistance between TCM connector and transmission body.****	Is the resistance under value in step1? (when hot)	Go to 3	Repair the poor contact of connector. If contact is OK, replace TCM.
3	Check Harness internal Transmission **CAUTION:** Start work after ATF cools down. 1) Remove the transmission valve cover. 2) Check Harness condition	Is any damage or pinching?	Repair Harness	Go to 4
4	Check Transmission harness (Earth short) 1) Disconnect Control valve body connector 2) Measure the resistance between TCM connector and Control valve body connector.*****	Is the resistance over 1MΩ?	Replace Control valve body	Repair Harness

NOTE* Solenoid name is referring to each vehicle Service Manual.
NOTE** Connector pin is referring to each vehicle Service Manual.
NOTE*** Resistance value is referring to each vehicle. Service Manual.
NOTE**** Connector pin is referring to each vehicle Service Manual.
NOTE***** Connector pin is referring to each vehicle Service Manual.

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4) Diagnostic Chart for use in diagnosing Group B vehicles with HIGH DTCs:

	Step	Check	Yes	No
1	Solenoid* check (CVTF is cool around 20 degrees C) 1) Check CVTF temperature using SSM around 20 degrees or room temperature. 2) IG off 3) Disconnect TCM connector. 4) Measure the resistance between TCM connector and transmission body.**	Is the resistance approx. X***—X***Ω? (when cold)	Go to 2	Go to 3
2	Solenoid* check (CVTF is hot around 80 degrees C and over) 1) Connect TCM connector 2) Warm up CVTF up to 80 degrees using SSM 3) Disconnect TCM connector 4) Measure the resistance between TCM connector and transmission body.****	Is the resistance over 1MΩ?	Go to 3	Repair the poor contact of connector. If contact is OK, replace TCM.
3	Check Harness internal Transmission CAUTION: Start work after ATF cools down. 1) Remove the transmission valve cover. 2) Check Harness condition	Is any damage or pinching?	Repair Harness	Go to 4
4	Check Transmission harness (open circuit) 1) Disconnect Control valve body connector 2) Measure the resistance between transmission connector and Control valve body connector.*****	Is the resistance under 1Ω?	Go to 5	Repair Harness
5	Check Transmission harness (open circuit) 1) Disconnect Control valve body connector 2) Measure the resistance between TCM connector and Control valve body connector.******	Is the voltage approx. 0V?	Replace Control valve body	Repair Harness

NOTE* Solenoid name is referring to each vehicle Service Manual.
NOTE** Connector pin is referring to each vehicle Service Manual.
NOTE*** Resistance value is referring to each vehicle Service Manual.
NOTE**** Connector pin is referring to each vehicle Service Manual.
NOTE***** Connector pin is referring to each vehicle Service Manual.
NOTE****** Connector pin is referring to each vehicle Service Manual.

IMPORTANT REMINDERS:

- SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.
- Always check for any open recalls or campaigns anytime a vehicle is in for servicing.
- Always refer to STIS for the latest service information before performing any repairs.