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Active Stabilization System

Overview

Active stabilization is also known as dynamic response, active roll control or active cornering enhancement, and refers to the control of the front and rear stabilizer (or anti-roll) bars.

For information on the description and operation of the system: Active Stabilization System

Inspection and Verification

- 1. Verify the customer concern.
- 2. Visually inspect for obvious mechanical or electrical faults.

Mechanical	Electrical
 Fluid level/condition, pipes, reservoir, etc Pump and pulley Drive belt condition Hoses Valve block Accelerometers (correct fitment, etc) Tire condition, pressures, etc Suspension components (correct fitment, damage, etc) 	Fuses (battery junction box) Engine control module (ECM) relay Harnesses/Connectors Upper accelerometer Lower accelerometer Steering wheel rotation sensor Dynamic response control module Air suspension control module ABS control module Instrument cluster module Transmission control module (TCM) Controller area network (CAN) circuits

- 3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
- 4 . Use the approved diagnostic system or a scan tool to retrieve any diagnostic trouble codes (DTCs) before moving onto the symptom chart or DTC index.
 - Because the DTCs are stored in more than one module, a complete vehicle read is recommended
 - Make sure that all DTCs are cleared following rectification

Symptom chart

Symptom	Possible cause	Action
Poor on- center response	 System bleed required Stabilizer bar bushes Residual pressure Steering angle sensor offset Control module adaptive data 	Carry out the manual bleed procedure. Active Stabilization System Bleeding (60.60.13) Check the stabilizer bar bushes. Front Stabilizer Bar (60.60.50) Rear Stabilizer Bar Check for residual pressure in the system. Check and calibrate the steering angle sensor, clear the adaptive data after calibration. Steering Angle Sensor (57.40.02)

Asymmetrical response	 Steering angle sensor offset Accelerometer calibration System bleed required 	Check and calibrate the steering angle sensor, clear the adaptive data after
Excessive roll	System bleed required Stabilizer bar bushes Stabilizer bar drop-links	Carry out the manual bleed procedure. <u>Active Stabilization System Bleeding (60.60.13)</u> Check the stabilizer bar bushes and drop links. <u>Front Stabilizer Bar (60.60.50)</u> <u>Rear Stabilizer Bar</u>
Powered roll-rock	 Harness faults Valve block fault Control module adaptive data Accelerometer fault 	Check for DTCs indicating any of the possible causes are present.
Oversteer or understeer	Stabilizer bar drop-links System actuators	Check the stabilizer bar drop links and the system actuators. Front Stabilizer Bar (60.60.50) Rear Stabilizer Bar

DTC index

NOTE:

Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the manufacturer-approved diagnostic system).

DTC	Description	Possible causes	Action
B1A8700	Battery disconnection/control module reset	Loss of power to the dynamic response control module while the vehicle is in motion	Check the harness and connectors, check the EMS relay, check the ground connections.
C111122	Control lateral acceleration	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111127	Control lateral acceleration	 Intermittent lower lateral accelerometer signal Lower lateral accelerometer fault Internal control module calculation fault 	Check for associated codes giving more information. Carry out the accelerometer tests using the approved diagnostic system.
C111200	Roll angle	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.

C111229	Roll angle	 Internal control module calculation fault 	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111300	Off-Road determination	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111400	Roll axis torque	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111629	Torque/Pressure	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111729	Direction control valve(s)	Internal control module calculation fault	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
C111771	Direction control valve(s)	Sticking direction control valves	Install a new valve block. Valve Block (60.60.20)
C111795	Direction control valve(s)	Incorrect connection of the pressure control and direction control valves Damaged direction control valve High resistance harness/connectors	Check the valve connections and rectify as necessary. Check the direction control valves. Check the harnesses and connectors.
C111909	Hydraulic pressure	Low fluid Leak in high pressure primary circuit Leaking reservoir Leak in secondary circuit Direction control valves stuck open Pressure control valve fault Pressure transducer fault Blocked filter Actuator fault	Check and top up the fluid. Rectify leaks as necessary. For sticking/faulty valves, install a new valve block. Valve Block (60.60.20) For a pressure transducer fault, install a new pressure transducer. Valve Block Transducer (60.60.22) Install a new filter as necessary. Valve Block Filter (60.60.21) Check the system actuators.
C111962	Hydraulic pressure	Low fluid Leak in high pressure primary circuit Leaking reservoir Leak in secondary circuit Direction control valves stuck open Pressure control valve fault Pressure transducer fault	Check and top up the fluid. Rectify leaks as necessary. For sticking/faulty valves, install a new valve block. Valve Block (60.60.20) For a pressure transducer fault, install a new pressure transducer. Valve Block Transducer (60.60.22) Install a new filter as necessary. Valve Block Filter (60.60.21) Check the system actuators. Install new drop links or stabilizer bars as necessary. Front Stabilizer Bar (60.60.50)

		Actuator fault Broken drop link Broken stabilizer bar Air in system	Rear Stabilizer Bar Carry out the manual bleed procedure. Active Stabilization System Bleeding (60.60.13)
C11197B	Hydraulic pressure	Low fluid Leak in high pressure primary circuit Leaking reservoir Leak in secondary circuit Blocked filter Low pump flow Blocked or kinked suction hose	Check and top up the fluid. Rectify leaks as necessary. Install a new filter as necessary. Valve Block Filter (60.60.21) Check and replace the pump as necessary. Fluid Pump - 4.2L/4.4L (60.60.10) Check the suction hose, rectify as necessary.
C111991	Hydraulic pressure	 Pressure control valve fault Contaminated fluid Kinked or blocked return pipe Pressure transducer fault 	For sticking/faulty valves, install a new valve block. Valve Block (60.60.20) Clean the system, replace the fluid. Check and replace the return pipe as necessary. For a pressure transducer fault, install a new pressure transducer. Valve Block Transducer (60.60.22)
C1A0001	Dynamic response control module	Harness fault Damaged isolation switch	Check the control module harness. Refer to the electrical guides.
C1A0004	Dynamic response control module	Internal control module fault	Refer to the warranty policy and procedures manual if a module is suspect.
C1A0043	Dynamic response control module	Internal control module fault	Refer to the warranty policy and procedures manual if a module is suspect.
C1A0045	Dynamic response control module	Internal control module fault	Refer to the warranty policy and procedures manual if a module is suspect.
C1A0047	Dynamic response control module	Internal control module fault	Refer to the warranty policy and procedures manual if a module is suspect.
C1A0052	Dynamic response control module	New control module	Configure the new module using the approved diagnostic system
C1A0054	Dynamic response control module	New control module	Configure the new module using the approved diagnostic system
C1A0916	Pressure transducer signal	 Pressure transducer signal circuit: short circuit to ground Pressure transducer fault 	Check the pressure transducer circuit, rectify as necessary. Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22)
C1A0917	Pressure transducer signal	Pressure transducer signal circuit: short circuit to power Pressure transducer fault	Check the pressure transducer circuit, rectify as necessary. Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22)

C1A091C	Pressure transducer signal	Pressure control valve circuit: short circuit to power Pressure control valve fault Pressure transducer fault	For sticking/faulty valves, install a new valve block. Valve Block (60.60.20) Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22)
C1A0926	Pressure transducer signal	Low fluid Pressure transducer fault Blocked filter	Check and top up the fluid. Install a new filter as necessary. Valve Block Filter (60.60.21) Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22)
C1A9762	Lateral accelerometer circuit	Damaged accelerometers Bent brackets	Check the accelerometers and brackets. Rectify as necessary.
C1B0312	Directional control valve 1	Directional control valve 1 circuit: short circuit/very low resistance Directional control valve 1 circuit: short circuit to power	Check the directional control valve circuit. For sticking/faulty valves, install a new valve block. Valve Block (60.60.20)
C1B0314	Directional control valve 1	Directional control valve 1 circuit: short circuit to ground	Check the directional control valve circuit. Refer to the electrical guides.
C1B0318	Directional control valve 1	Directional control valve 1 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0319	Directional control valve 1	Directional control valve 1 circuit: very low resistance Directional control valve 1 circuit: short circuit to power	Check the directional control valve circuit. Refer to the electrical guides.
C1B031D	Directional control valve 1	Directional control valve 1 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0400	Hit current directional control valve 1	Directional control valve 1 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0500	Hold current directional control valve 1	Directional control valve 1 circuit: high resistance Air in system	Check the directional control valve circuit. Carry out the manual bleed procedure. Active Stabilization System Bleeding (60.60.13)
C1B0600	Off current directional control valve 1	Directional control valve 1 circuit: short circuit to other circuits	Check the directional control valve circuit with the control module connector disconnected. Refer to the electrical guides.
		Directional control	

C1B0712	Directional control valve 2	valve 2 circuit: short circuit/very low resistance Directional control valve 2 circuit: short circuit to power	Check the directional control valve circuit. For sticking/faulty valves, install a new valve block. Valve Block (60.60.20)
C1B0714	Directional control valve 2	Directional control valve 2 circuit: short circuit to ground	Check the directional control valve circuit. Refer to the electrical guides.
C1B0718	Directional control valve 2	Directional control valve 2 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0719	Directional control valve 2	Directional control valve 2 circuit: very low resistance Directional control valve 2 circuit: short circuit to power	Check the directional control valve circuit. Refer to the electrical guides.
C1B071D	Directional control valve 2	Directional control valve 2 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0800	Hit current directional control valve 2	Directional control valve 2 circuit: high resistance	Check the directional control valve circuit. Refer to the electrical guides.
C1B0900	Hold current directional control valve 2	Directional control valve 2 circuit: high resistance Air in system	Check the directional control valve circuit. Carry out the manual bleed procedure. Active Stabilization System Bleeding (60.60.13)
C1B1000	Off current directional control valve 2	Directional control valve 2 circuit: short circuit to other circuits	Check the directional control valve circuit with the control module connector disconnected. Refer to the electrical guides.
C1B1112	Pressure control valve (PCV)	PCV circuit: very low resistance PCV circuit: short circuit to power	Check the PCV circuit. Refer to the electrical guides.
C1B1114	Pressure control valve (PCV)	PCV circuit: short circuit to ground	Check the PCV circuit. Refer to the electrical guides.
C1B1118	Pressure control valve (PCV)	PCV circuit: high resistance	Check the PCV circuit. Refer to the electrical guides.
C1B1119	Pressure control valve (PCV)	PCV circuit: very low resistance PCV circuit: short circuit to power	Check the PCV circuit. Refer to the electrical guides.
C1B111D	Pressure control valve (PCV)	PCV circuit: high resistance	Check the PCV circuit. Refer to the electrical guides.

C1B1162	Pressure control valve (PCV)	 Low/Contaminated fluid PCV fault Low flow/low pressure pump Pressure transducer fault Air in system 	Check fluid level and condition. For sticking/faulty valves, install a new valve block. Valve Block (60.60.20) Check the pump operation and hoses, rectify as necessary. Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22) Carry out the manual bleed procedure. Active Stabilization System Bleeding (60.60.13)
C1B1164	Pressure control valve (PCV)	PCV circuit: high resistance	Check the PCV circuit. Refer to the electrical guides.
C1B1212	Lower lateral accelerometer circuit	Lower lateral accelerometer signal circuit: short circuit to other circuit or power	Check the lower lateral accelerometer circuit. Refer to the electrical guides.
C1B1214	Lower lateral accelerometer circuit	Lower lateral accelerometer signal circuit: short circuit to other circuit or ground Lower lateral accelerometer fault	Check the lower lateral accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03)
C1B1222	Lower lateral accelerometer circuit	Lower lateral accelerometer loose Lower lateral accelerometer signal circuit: short circuit to other circuit or ground Lower lateral accelerometer fault	Check the lower lateral accelerometer fitment, rectify as necessary. Check the lower lateral accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03)
C1B1226	Lower lateral accelerometer circuit	Lower lateral accelerometer signal circuit: short circuit to other circuit Lower lateral accelerometer fault	Check the lower lateral accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03)
C1B1228	Lower lateral accelerometer circuit	Lower lateral accelerometer mounting damaged Lower lateral accelerometer loose Lower lateral accelerometer fault	Check the lower lateral accelerometer fitment, rectify as necessary. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03)
C1B1276	Lower lateral accelerometer circuit	Lower lateral accelerometer mounting damaged Lower lateral accelerometer fault	Check the lower lateral accelerometer fitment, rectify as necessary. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03)
		Upper lateral accelerometer signal circuit: short	Check the upper accelerometer circuit. Carry out the

C1B1312	Upper lateral accelerometer circuit	circuit to other circuit or power Upper lateral accelerometer fault	accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B1314	Upper lateral accelerometer circuit	Upper lateral accelerometer signal circuit: short circuit to other circuit or ground Upper lateral accelerometer fault	Check the upper accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B1322	Upper lateral accelerometer circuit	Upper lateral accelerometer loose Upper lateral accelerometer signal circuit: short circuit to other circuit Upper lateral accelerometer fault	Check the upper lateral accelerometer fitment, rectify as necessary. Check the upper accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B1326	Upper lateral accelerometer circuit	Upper lateral accelerometer signal circuit: short circuit to other circuit Upper lateral accelerometer fault	Check the upper accelerometer circuit. Carry out the accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B1328	Upper lateral accelerometer circuit	Upper lateral accelerometer mounting damaged Upper lateral accelerometer loose Upper lateral accelerometer accelerometer fault	Check the upper lateral accelerometer fitment, rectify as necessary. Carry out the accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B1376	Upper lateral accelerometer circuit	Upper lateral accelerometer mounting damaged Upper lateral accelerometer fault	Check the upper lateral accelerometer fitment, rectify as necessary. Carry out the accelerometer tests using the approved diagnostic system. Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B141C	Sensor supply 1	Lower lateral accelerometer or pressure transducer supply circuit: short circuit to other circuit or ground Lower lateral accelerometer fault Pressure transducer fault	Check the lower accelerometer and pressure transducer circuits. Carry out the accelerometer tests using the approved diagnostic system. Install a new lower lateral accelerometer as necessary. Lower Accelerometer (60.60.03) Install a new pressure transducer as necessary. Valve Block Transducer (60.60.22)
C1P151C	Sansar sunnly 2		Check the upper lateral accelerometer circuits. Carry out the accelerometer tests using the approved diagnostic system.

CIDIOIO	Selisul supply 2	circuit or ground Upper lateral accelerometer fault	Install a new upper lateral accelerometer as necessary. Upper Accelerometer (60.60.02)
C1B181C	Control module supply voltage cross- reference check	Control module supply circuit: high resistance Charging system fault	Check the control module power and ground circuits. Check for charging system DTCs, rectify as necessary. Charging System
P14529	Calculated torque error	Internal control module calculation failure	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
U007388	Control module communication bus off	CAN circuit fault CAN module fault Dynamic response module fault	Communications Network
U010087	Lost communication with the engine control module (ECM)	ECM CAN message not received in the specified time	Communications Network
U010187	Lost communication with the transmission control module (TCM)	TCM CAN message not received in the specified time	Communications Network
U010287	Lost communication with the transfer case control module (TCCM)	TCCM CAN message not received in the specified time	Communications Network
U012287	Lost communication with the anti-lock brake (ABS) module	ABS module CAN message not received in the specified time	Communications Network
U012687	Lost communication with the steering wheel rotation sensor	Steering wheel rotation sensor CAN message not received in the specified time	Communications Network
U013287	Lost communication with the air suspension control module	Air suspension control module CAN message not received in the specified time	Communications Network
U015587	Lost communication with the instrument cluster module	Instrument cluster module CAN message not received in the specified time	Communications Network
U030055	Module configuration does not match the vehicle configuration	Dynamic response module incorrectly configured	Configure the module using the approved diagnostic system.
11040191	II I		System. Check for CAN or module DTCs. Check the power and

0040101	from the ECM		ground circuits to the ECM, rectify as necessary.
U040281	Invalid data received from the TCM	TCM fault	Check for CAN or module DTCs. Check the power and ground circuits to the TCM, rectify as necessary.
U040381	Invalid data received from the TCCM	TCCM fault	Check for CAN or module DTCs. Check the power and ground circuits to the TCCM, rectify as necessary.
U041681	Invalid data received from the ABS module	ABS module fault	Check for CAN or module DTCs. Check the power and ground circuits to the ABS module, rectify as necessary.
U042181	Invalid data received from the air suspension control module	Air suspension control module fault	Check for CAN or module DTCs. Check the power and ground circuits to the air suspension control module, rectify as necessary.
U042881	Invalid data received from the steering wheel rotation sensor	Steering wheel rotation sensor fault	Check for CAN or module DTCs. Check the power and ground circuits to the steering wheel rotation sensor, rectify as necessary.
U042885	Invalid data received from the steering wheel rotation sensor	Steering wheel rotation sensor out of calibration Steering wheel rotation sensor fault	Calibrate the steering wheel rotation sensor using the approved diagnostic system. Check for CAN or module DTCs. Check the power and ground circuits to the steering wheel rotation sensor, rectify as necessary.
U042886	Invalid data received from the steering wheel rotation sensor	 Steering wheel rotation sensor out of calibration Wheels out of alignment Steering wheel rotation sensor fault 	Calibrate the steering wheel rotation sensor using the approved diagnostic system. Check the wheel alignment, adjust as necessary. Four-Wheel Alignment (57.65.04) Check for CAN or module DTCs. Check the power and ground circuits to the steering wheel rotation sensor, rectify as necessary.
U1A0400	Vehicle speed CAN signal	ABS module fault	Check for CAN or module DTCs. Check the power and ground circuits to the ABS module, rectify as necessary.
U1A1086	Ignition status CAN signal	Lost communications	Check for associated codes giving more information. Refer to the warranty policy and procedures manual if a module is suspect.
U1A1449	CAN initialization failure	Dynamic response module internal fault	Refer to the warranty policy and procedures manual if a module is suspect.
U200798	Valve(s)	Restricted filter Restricted high pressure or return line pipework Damaged pump Contaminated fluid Continuous use at high lateral acceleration	Check the filter and pipework. Check the pump, rectify as necessary. Check the fluid condition, replace and clean as necessary. Investigate the driving profile.