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VEHICLE DYNAMIC SUSPENSION

DIAGNOSIS AND TESTING

PRINCIPLE OF OPERATION

For information on the operation of the system, refer to relevant section 204-05 - Vehicle Dynamic Suspension of the workshop manual.

INSPECTION AND VERIFICATION

- 1. Verify the customer concern.
- 2. Confirm which, if any, warning lights and/or messages were displayed on the instrument cluster. For a list of messages, Refer to the relevant section of the workshop manual.
- 3. Visually inspect for obvious mechanical or electrical faults.

Visual inspection

MECHANICAL	ELECTRICAL	
 Air leakage 	Battery	
 Air springs 	Fuse(s)	
 Reservoir 	 Wiring harness physical damage or water ingress 	
Compressor	 Loose or corroded electrical connectors 	
 Compressor air filter 	 Air suspension control switch 	
 Pipework and unions 	 Controller area network (CAN) circuits 	
 Sensor installation 	 Sensors 	
Valve block(s)	Valve block(s)	
	Air suspension control module	

ELECTRICAL

- **4.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
- **5.** 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.
 - Make sure that all DTCs are cleared following rectification.

SYMPTOM CHART

SYMPTOM	POSSIBLE MESSAGE	POSSIBLE OTHER WARNINGS	POSSIBLE CAUSES	ACTION
Vehicle on bump stops	Suspension fault	Two chimes repeated regularly Red indicator permanently illuminated Two chimes repeated regularly Red indicator permanently illuminated	 Water ingress to wiring harness or connectors Air leak(s) Vehicle in transportation mode System not calibrated or calibrated or calibration corrupt Implausible articulation symptoms detected Failure of multiple height sensors Air suspension control module failure 	Visually inspect the wiring harness and connectors for water ingress. Visually inspect the system for air leakage. Check the system mode and calibration using the approved diagnostic system. Check for implausible articulation symptoms, i.e. height sensor or linkage fault, deflated air spring, under inflated tire etc. Note implausible articulation symptoms may be caused by an un-calibrated height sensor. Check for height sensor DTCs and refer to the DTC index. Refer to the warranty policy and procedures manual if a module is suspect.
Vehicle does not sit level	Suspension fault	 Two chimes repeated regularly Red 	 Water ingress to wiring harness or connectors 	Visually inspect the wiring harness and connectors for water ingress.

SYMPTOM	POSSIBLE MESSAGE	POSSIBLE OTHER WARNINGS	POSSIBLE CAUSES	ACTION
		indicator permanently illuminated	 Air leak(s) Calibration corrupt cross-link valve fault Height sensor fault Reservoir valve stuck open Exhaust valve stuck closed Corner valves stuck open Air suspension control module failure 	Visually inspect the system for air leakage and refer to the guided diagnostic routine on the approved diagnostic system. Check the system calibration using the approved diagnostic system. For front and rear cross link valve tests refer to the guided diagnostic routine on the approved diagnostic system. Check for height sensor DTCs and refer to the DTC index. For reservoir and exhaust valve tests refer to the guided diagnostic routine on the approved diagnostic system. Check for croservoir and exhaust valve tests refer to the guided diagnostic routine on the approved diagnostic system. Check for corner valve DTCs and refer to the DTC index. Refer to the warranty policy and procedures manual if a module is suspect.
Vehicle sits too low	 Suspension fault Hill descent control (HDC) fault, system not available Dynamic stability control (DSC) 	 Two chimes, amber indicator permanently illuminated One chime DSC amber indicator permanently illuminated ABS indicator permanently illuminated 	 Water ingress to wiring harness or connectors Air leak(s) Air suspension compressor temperature sensor fault Inlet air filter blockage/restriction Air suspension compressor fault Exhaust valve stuck/sticking Air suspension control module lost 	Visually inspect the wiring harness and connectors for water ingress. Visually inspect the system for air leakage. For air compressor temperature sensor, inlet air filter, exhaust valve and air compressor tests refer to the guided diagnostic routine on the approved diagnostic system. For Air suspension control module

SYMPTOM	POSSIBLE MESSAGE	POSSIBLE OTHER WARNINGS	POSSIBLE CAUSES	ACTION
		-	communication with ABS module ABS fault. Air suspension control module failure	lost communication with ABS module, refer to the lost communication codes statement at the end of this table. Check for ABS DTCs, Refer to the relevant section of the workshop manual. Refer to the warranty policy and procedures manual if a module is suspect.
Vehicle sits too high	 Suspension fault 	■ Two chimes, amber indicator permanently illuminated	 Reservoir valve stuck open Exhaust valve stuck closed Corner valves stuck open Air suspension control module failure 	For reservoir valve and exhaust valve tests refer to the guided diagnostic routine on the approved diagnostic system. Check for corner valve DTCs and refer to the DTC index. Refer to the warranty policy and procedures manual if a module is suspect.
System detects extended mode unnecessarily when lowering	•	•	 Crossed gallery and air spring pipes Incorrect valve block installed to front or rear Damage or blockage in air harness 	Refer to the guided diagnostic routine on the approved diagnostic system.
Vehicle leans/tilts after being left over- night or for some days	· .		 Leaking air spring(s) Leak from corner valve to gallery Exhaust valve stuck open 	Refer to the guided diagnostic routine on the approved diagnostic system.
After vehicle left over- night or for	 Suspension vehicle 	ж.	Leaking air spring(s)Leaking reservoir	Refer to the guided diagnosti routine on the

SYMPTOM	POSSIBLE MESSAGE	POSSIBLE OTHER WARNINGS	POSSIBLE CAUSES	ACTION
some days system regularly indicates "Suspension vehicle raising slowly" when first driving off	raising slowly			approved diagnostic system.

DTC INDEX

NOTES:

- 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).
- Intermittent faults may cause DTCs to be logged, however some DTCs may be cleared during an ignition off, ignition on cycle. Carry out a road test (if safe to do so), check the functionality of the system and retrieve any DTCs before turning the ignition off.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
B1A8455	Car Configuration Data	 Data does not match that expected for VIN range/Air suspension incorrectly configured 	Configure the car configuration file (CCF) using the approved diagnostic system. Clear the DTC and test for normal operation.
C112201	Steering Isolation Valve	 Servotronic steering valve disconnected Servotronic steering valve circuit(s) high resistance or short circuit to ground Servotronic steering valve fault 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C11231C	Steering Isolation Valve Supply Circuit	 Servotronic steering valve supply circuit high resistance 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.

DTC	DESCRIPTION	Servotronic steering valve supply circuit short circuit to ground Servotronic steering valve supply circuit short circuit to power Servotronic steering valve fault	ACTION
C112F72	Air Spring Valve	 Repeated or frequent level activity in the down direction Corner valve stuck open Corner valve leak to gallery 	Refer to the approved diagnostic system for corner valve checks.
C113066	Air Spring Air Supply	 Repeated or frequent level activity in the up direction Air spring leak Air harness leak Exhaust valve stuck open Corner valve leak to gallery 	Visually inspect the system for air leakage. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C11307A	Air Spring Sir Supply	 Unable to lift vehicle Detached air pipe Loose or burst air pipe Excessive air spring leak Height sensor stuck Height sensor failure Blockage in air harness 	Visually inspect the system for an excessive air leak. Check the height sensor linkage(s) for damage/restrictions. Visually inspect the air harness for evidence of melting, crushing, kinking or collapsing. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C113192	Air Spring Air Supply	 Unable to pressurize gallery Insufficient pressure from compressor Detached air pipe Loose or burst air pipe Reservoir valve block pipes incorrectly 	Visually inspect the system for air leakage. Check the reservoir valve block pipes for correct routing and installation.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		installed (unions reversed)	
		Pressure sensor fault	
C1A001C	Control Module	 A momentary low voltage event occurred Low battery voltage One or more control valve supplies intermittent short circuit to ground 	Check the battery charge, condition and circuit. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A001D	Control Module	 Isolation switch current monitor One or more valve supplies short circuit to ground Rear valve block disconnected Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A0049	Control Module	 Water ingress to valve wiring harness or connector(s) Valve supply circuit(s) short circuit to power Air suspension control module internal electrical failure 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A0053	Control Module	This is not a fault, the system has been deflated using the diagnostic routine	Carry out Air suspension deflation exit routine using the approved diagnostic system or the routine listed at the end of this section.
C1A0054	Control Module	 Air suspension control module not calibrated Air suspension control module has been set into manufacturing, calibration or tight tolerance mode 	If the problem is found during predelivery inspection, check that the air suspension control module (RLM) is NOT in manufacturing mode, calibration mode or tight tolerance mode using the approved diagnostic system. Configure the RLM to customer mode if necessary (tight tolerance mode and manufacturing mode can be set/cleared by starting then ending the suspension geometry set process from IDS menu. Refer to the relevant Technical Service Bulletin). Clear the DTC and test

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION for normal operation. Only if the DTC re-occurs, should the system be calibrated using the approved diagnostic system. Clear the DTC and test for normal operation.
C1A0119	LED	 Switch pack LED circuit, short circuit to power One or more LEDs short circuit to each other 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A031C	Left Front Height Sensor	 Left-hand front height sensor signal voltage out of range Water ingress to wiring harness or connectors Height sensor linkage disconnected Height sensor linkage damaged/bent Height sensor linkage toggled (now operating in reverse direction) Height sensor bracket damaged/bent Height sensor installed Height sensor installed Height sensor installed on wrong side of vehicle Height sensor harness wiring short circuit to ground, short circuit to ground, short circuit to power or high resistance Height sensor failure Incorrect height calibration Air suspension control module failure 	Visually inspect the wiring harness and connectors for water ingress. For height sensor linkage, mounting and circuit tests refer to the guided diagnostic routine on the approved diagnostic system. Check the height sensor bracket condition and security. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A0326	Left Front Height Sensor	 Left-hand front height sensor signal voltage stuck whilst vehicle is driven 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		 Water ingress to wiring harness or connectors 	procedures manual if a module is suspect.
	2	 Height sensor linkage disconnected 	
		 Height sensor harness wiring short circuit to ground, short circuit to power or high resistance 	
		 Height sensor failure 	
		Air suspension control module failure	
C1A0329	Left Front Height Sensor	 Left-hand front height sensor signal invalid Water ingress to wiring 	Visually inspect the wiring harness and connectors for water ingress, Refer to the guided diagnostic routine for this code on the
		harness or connectors Height sensor linkage	approved diagnostic system. Check the height sensor bracket condition and security. Check the height
		damaged/bent	sensor for correct installation and torque of fixings. If any height
		 Height sensor bracket damaged/bent 	sensor fixings are slackened or found to be loose, or a height
		 Height sensor incorrectly installed 	sensor has been changed, the vehicle ride height must be re- calibrated. Calibrate the system
		 Height sensor harness wiring short circuit to ground, short circuit to power or high resistance 	using the approved diagnostic system.
		 Height sensor failure 	
		 Incorrect height calibration process 	
C1A0392	Left Front Height Sensor	 Left-hand front height sensor height changing slower than expected 	Check that the vehicle is free of obstructions. Check the height sensor for correct installation and torque of fixings. If any height
		 Suspension prevented from moving 	sensor fixings are slackened or found to be loose, or a height
		 Height sensor incorrectly installed 	sensor has been changed, the vehicle ride height must be re- calibrated. Calibrate the system
		 Air spring leak 	using the approved diagnostic system. Refer to the guided
		 Air harness leak 	diagnostic routine for this code on the approved diagnostic system.
		 Blocked/damaged air harness 	Check for an air spring leak. Check the air harness for evidence of
		 Blocked/damaged gallery pipe 	melting, crushing, kinking or collapsing. Check the front and rear valve block pipes for correct
		 Corner valve stuck closed 	routing and installation. Check the reservoir valve block pipes for correct routing and installation.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		 Front or rear valve block pipes incorrectly installed (unions reversed) 	Refer to the approved diagnostic system for corner, reservoir and exhaust valve checks. Check the corner valve for leaks.
		 Reservoir valve block pipes incorrectly installed (unions reversed) 	
		 Reservoir valve stuck open 	
		Exhaust valve stuck closed	
		Corner valve air leak	
		 Pressure sensor fault 	
		Height sensor failure	
C1A041C	Right Front Height Sensor	 Right-hand front height sensor signal voltage out of range 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic
		 Water ingress to wiring harness or connectors 	routine for this code on the approved diagnostic system. Check the height sensor bracket condition
		 Height sensor linkage disconnected 	and security. Check the height sensor for correct installation and torque of fixings. If any height
		 Height sensor linkage damaged/bent 	sensor fixings are slackened or found to be loose, or a height sensor has been changed, the
		 Height sensor disconnected 	vehicle ride height must be re- calibrated. Calibrate the system
		Height sensor linkage toggled (now operating in reverse direction)	using the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		 Height sensor bracket damaged/bent 	
		 Height sensor incorrectly installed 	
		 Height sensor installed on wrong side of vehicle 	
		 Height sensor harness wiring short circuit to ground, short circuit to 	
		power or high resistance	
		 Height sensor failure 	
		 Incorrect height calibration 	
		 Air suspension control module failure 	

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
C1A0426	Right Front Height Sensor	 Right-hand front height sensor signal voltage stuck whilst vehicle is driven Water ingress to wiring harness or connectors Height sensor linkage disconnected Height sensor harness wiring short circuit to ground, short circuit to ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A0429	Right Front Height Sensor	 Right-hand front height sensor signal invalid: Water ingress to wiring harness or connectors Height sensor linkage damaged/bent Height sensor bracket damaged/bent Height sensor incorrectly installed Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor failure Incorrect height calibration process 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the height sensor bracket condition and security. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system.
C1A0492	Right Front Height Sensor	 Right-hand front height sensor height changing slower than expected Suspension prevented from moving Height sensor incorrectly installed Air spring leak Air harness leak Blocked/damaged air harness 	Check that the vehicle is free of obstructions. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check for an air spring leak. Check the air harness for evidence of melting crushing kinking or

melting, crushing, kinking or

DTC DESCRIPTION **POSSIBLE CAUSES ACTION** collapsing. Check the front and Blocked/damaged gallery pipe rear valve block pipes for correct routing and installation. Check the Corner valve stuck reservoir valve block pipes for closed correct routing and installation. Refer to the approved diagnostic Front or rear valve system for corner, reservoir and block pipes incorrectly exhaust valve checks. Check the installed (unions corner valve for leaks. reversed) Reservoir valve block pipes incorrectly installed (unions reversed) Reservoir valve stuck open Exhaust valve stuck closed Corner valve air leak Pressure sensor fault Height sensor failure C1A051C Left Rear Height Left-hand rear height Visually inspect the wiring harness Sensor sensor signal voltage and connectors for water ingress. out of range Refer to the guided diagnostic routine for this code on the Water ingress to wiring approved diagnostic system. Check harness or connectors the height sensor bracket condition and security. Check the height Height sensor linkage sensor for correct installation and disconnected torque of fixings. If any height sensor fixings are slackened or Height sensor linkage found to be loose, or a height damaged/bent sensor has been changed, the Height sensor vehicle ride height must be redisconnected calibrated. Calibrate the system using the approved diagnostic Height sensor linkage system. Refer to the warranty toggled (now policy and procedures manual if a operating in reverse module is suspect. direction) Height sensor bracket damaged/bent Height sensor incorrectly installed Height sensor installed on wrong side of vehicle Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor failure

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		Incorrect height calibrationAir suspension control	
		module failure	
C1A0526	Left Rear Height Sensor	 Left-hand rear height sensor signal voltage stuck whilst vehicle is driven 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the
		• Water ingress to wiring harness or connectors	approved diagnostic system. Refer to the warranty policy and procedures manual if a module is
		 Height sensor linkage disconnected 	suspect.
		 Height sensor harness wiring short circuit to ground, short circuit to power or high resistance 	
		 Height sensor failure 	
		 Air suspension control module failure 	
C1A0529	Left Rear Height Sensor	 Left-hand rear height sensor signal invalid 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic
		 Water ingress to wiring harness or connectors Height sensor linkage 	routine for this code on the approved diagnostic system. Check the height sensor bracket condition
		damaged/bent	and security. Check the height sensor for correct installation and
		 Height sensor bracket damaged/bent 	torque of fixings. If any height sensor fixings are slackened or
		 Height sensor incorrectly installed 	found to be loose, or a height sensor has been changed, the vehicle ride height must be re-
		 Height sensor harness 	calibrated. Calibrate the system using the approved diagnostic
		wiring short circuit to ground, short circuit to	system,
		power or high resistance	
		Height sensor failure	
		 Incorrect height 	
		calibration process	
C1A0592	Left Rear Height Sensor	 Left-hand rear height sensor height changing slower than expected 	Check that the vehicle is free of obstructions. Check the height sensor for correct installation and
		 Suspension prevented from moving 	torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height
		 Height sensor incorrectly installed 	sensor has been changed, the vehicle ride height must be re- calibrated. Calibrate the system

DTC DESCRIPTION POSSIBLE CAUSES **ACTION** using the approved diagnostic Air spring leak system. Refer to the guided Air harness leak diagnostic routine for this code on the approved diagnostic system. Blocked/damaged air Check for an air spring leak. Check harness the air harness for evidence of melting, crushing, kinking or Blocked/damaged collapsing. Check the front and gallery pipe rear valve block pipes for correct Corner valve stuck routing and installation. Check the closed reservoir valve block pipes for correct routing and installation. Front or rear valve Refer to the approved diagnostic block pipes incorrectly system for corner, reservoir and installed (unions exhaust valve checks. Check the reversed) corner valve for leaks. Reservoir valve block pipes incorrectly installed (unions reversed) Reservoir valve stuck open Exhaust valve stuck closed Corner valve air leak Pressure sensor fault Height sensor failure C1A061C Right Rear Right-hand rear height Visually inspect the wiring harness Height Sensor and connectors for water ingress. sensor signal voltage Refer to the guided diagnostic out of range routine for this code on the Water ingress to wiring approved diagnostic system. Check harness or connectors the height sensor bracket condition and security. Check the height Height sensor linkage sensor for correct installation and disconnected torque of fixings. If any height sensor fixings are slackened or Height sensor linkage found to be loose, or a height damaged/bent sensor has been changed, the Height sensor vehicle ride height must be redisconnected calibrated. Calibrate the system using the approved diagnostic Height sensor linkage system. Refer to the warranty toggled (now policy and procedures manual if a operating in reverse module is suspect. direction) Height sensor bracket damaged/bent Height sensor incorrectly installed Height sensor installed on wrong side of vehicle Height sensor harness wiring short circuit to

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		ground, short circuit to power or high resistance Height sensor failure Incorrect height calibration Air suspension control	
C1A0626	Right Rear	module failure Right-hand rear height	Visually inspect the wiring harness
C1A0626 Right Rear Height Sensor		sensor signal voltage stuck whilst vehicle is driven Water ingress to wiring harness or connectors Height sensor linkage disconnected Height sensor harness wiring short circuit to ground, short circuit to	and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		power or high resistance Height sensor failure Air suspension control module failure	
C1A0629	Right Rear Height Sensor	 Right-hand rear height sensor signal invalid Water ingress to wiring harness or connectors Height sensor linkage damaged/bent Height sensor bracket damaged/bent Height sensor incorrectly installed Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor failure Incorrect height calibration process 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the height sensor bracket condition and security. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system.
C1A0692	Right Rear Height Sensor	 Right-hand rear height sensor height changing slower than expected 	Check that the vehicle is free of obstructions. Check the height sensor for correct installation and torque of fixings. If any height

DTC DESCRIPTION **POSSIBLE CAUSES** ACTION sensor fixings are slackened or Suspension prevented from moving found to be loose, or a height sensor has been changed, the Height sensor vehicle ride height must be reincorrectly installed calibrated. Calibrate the system using the approved diagnostic Air spring leak system. Refer to the guided diagnostic routine for this code on Air harness leak the approved diagnostic system. Blocked/damaged air Check for an air spring leak. Check harness the air harness for evidence of melting, crushing, kinking or Blocked/damaged collapsing. Check the front and gallery pipe rear valve block pipes for correct routing and installation. Check the Corner valve stuck reservoir valve block pipes for closed correct routing and installation. Refer to the approved diagnostic Front or rear valve system for corner, reservoir and block pipes incorrectly exhaust valve checks. Check the installed (unions corner valve for leaks. reversed) Reservoir valve block pipes incorrectly installed (unions reversed) Reservoir valve stuck open Exhaust valve stuck closed Corner valve air leak Pressure sensor fault Height sensor failure C1A0762 Cross Cross articulation too Follow the process detailed in the Articulation large whilst vehicle is relevant special service message (SSM). Check the condition and driven security of the height sensor Water ingress to wiring bracket(s). Check the height sensor harness or connectors for correct fitment and fixings torque. If any height sensor fixings Height sensor linkage are slackened or found to be loose, damaged/bent or a height sensor has been changed, the vehicle ride height Height sensor linkage must be re-calibrated. Calibrate the loose/disconnected system using the approved Height sensor bracket diagnostic system. damaged/bent Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor removed and reinstalled without being recalibrated

DTC	DESCRIPTION	POSSIBLE CAUSES New height sensor installed without calibration Incorrect height calibration Height sensor failure	ACTION
C1A081C	Pressure Sensor Supply	 Pressure sensor supply voltage out of range Pressure sensor harness wiring short circuit to ground, short circuit to power or high resistance Pressure sensor failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A091C	Pressure Sensor Signal	 Pressure sensor signal voltage out of range Pressure sensor disconnected Pressure sensor harness wiring short circuit to ground, short circuit to power or high resistance Pressure sensor failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A1064	Pressure Fluctuates When System Inactive	 Reservoir and air spring pipes incorrectly installed to front or rear valve block (unions reversed) Corner valve stuck open Pressure sensor harness wiring short circuit to ground, short circuit to power or high resistance Pressure sensor failure Air suspension control module failure 	Check the reservoir and air spring pipes for correct routing and installation. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A1164		 Reservoir and air spring pipes incorrectly 	Check the reservoir and air spring pipes for correct routing and

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
	Pressure Fluctuates When System Inactive	installed to front or rear valve block (unions reversed) Corner valve internal leak Reservoir valve internal leak Pressure sensor harness wiring short circuit to ground, short circuit to power or high resistance Pressure sensor failure	installation. For corner valve, reservoir valve, pressure sensor and circuit tests refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A1364	Pressure Does Not Decrease When Venting Gallery	 Exhaust valve stuck closed Exhaust valve does not hold minimum retention pressure Gallery pipe blocked/damaged Pressure sensor fault Air suspension exhaust silencer blocked/restricted Air suspension exhaust pipe blocked/damaged Reservoir valve block pipes incorrectly installed (unions reversed) 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the Air suspension exhaust pipe and silencer for blockage/restriction. Check the reservoir valve block pipes for correct routing and installation.
C1A1864	Pressure Increase Too Rapid When Filling Reservoir	 Reservoir valve stuck closed Reservoir pipe blocked/damaged Reservoir port blocked/restricted Pressure sensor fault 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A2064	Pressure Increase Too Slow When Filling Reservoir	 Compressor fault Reservoir pipe air leak Reservoir air leak Gallery pipe air leak Intake filter blocked/restricted 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the Air suspension intake pipe and silencer for blockage/restriction.

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DTC	DESCRIPTION	POSSIBLE CAUSES Intake pipe blocked/restricted Air suspension intake silencer blocked/restricted Corner valve stuck open	ACTION
C1A2464	No Temperature Increase When Compressor Requested	 Pressure sensor fault Air compressor cylinder head temperature sensor disconnected Air compressor cylinder head temperature sensor detached from cylinder head Air compressor cylinder head temperature sensor fault Air compressor fault 	Check the security of the compressor cylinder head temperature sensor and electrical connection. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A2467	No Temperature Increase When Compressor Requested	 Temperature takes too long to read after suitable compressor runtime Air compressor cylinder head temperature sensor disconnected Air compressor cylinder head temperature sensor fault Air compressor disconnected Air compressor ground circuit high resistance Air compressor fault 	Check the security of the compressor cylinder head temperature sensor and electrical connection. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1A2616	Temperature Sensor Circuit	 Temperature sensor voltage out of range Air compressor cylinder head temperature sensor harness wiring short circuit to ground, short circuit to power or high resistance Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
	Compressor Circuit	 Compressor voltage present when compressor not requested Air compressor harness wiring short circuit to power Air compressor relay fault Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A2714	Compressor Circuit	 Compressor voltage present when compressor requested Air suspension control module supply (COMP_V) fuse in battery junction box (BJB) failed Air supply relay/air compresor supply fusible link in BJB failed/not installed Air compressor harness wiring short circuit to ground or high resistance Air compressor relay failure Air suspension control module failure 	Check/renew fuses as necessary. Refer to the electircal guides. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A2729	Compressor Circuit	 Compressor relay control voltage signal invalid Air compressor harness wiring short circuit to power Air compressor relay fault Air suspension control module failure 	DTC C1A2712 will be set first. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A2864	Wrong Number of LEDs Illuminated	 Wrong number of LEDs illuminated on switch pack Air suspension control module supply (BATTERY) fuse in 	Check/renew fuse as necessary. Refer to the electircal guides. Refer to the electrical guides and check the switch pack and LED wiring ciruits. Renew/repir as necessary. Refer to the warranty policy and procedures manual if a module is suspect.

			ACTION
DTC	DESCRIPTION	POSSIBLE CAUSES battery junction box (BJB) failed	ACTION
		Switch pack harness wiring short circuit to ground, short circuit to power or high resistance	
		LED circuit short circuit to power	
		One or more LEDs short circuit to each other	
		Switch pack failure	
		Air suspension control module failure	
C1A2992	Switch Activation Too Long	 Ride height change switch activation too long 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer
	i -	 Switch pressed for more than 255 seconds 	to the warranty policy and procedures manual if a module is suspect.
		Switch pack harness wiring short circuit to ground, short circuit to power or high resistance	
		Switch pack failure	
		 Air suspension control module failure 	
C1A3064	Both Switches Pressed At Same Time	 Raise and lower switches activated at same time 	Check/renew fuse as necessary. Refer to the electircal guides. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the
		 Air suspension control module supply (BATTERY) fuse in battery junction box (BJB) failed 	warranty policy and procedures manual if a module is suspect.
		 Switch pack harness wiring short circuit to ground, short circuit to power or high resistance 	
		Switch pack failure	
		 Air suspension control module failure 	
C1A3101	Left Front Corner Valve		Refer to the guided diagnostic routine for this code on the

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		 Left-hand front corner valve, general electrical failure Front valve block disconnected Front valve block harness wiring short circuit to ground or high resistance Left-hand front corner valve failure Air suspension control module failure 	approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3201	Right Front Corner Valve	 Right-hand front corner valve, general electrical failure Front valve block disconnected Front valve block harness wiring short circuit to ground or high resistance Right-hand front corner valve failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3301	Left Rear Corner Valve	 Left-hand rear corner valve, general electrical failure Rear valve block disconnected Rear valve block harness wiring short circuit to ground or high resistance Left-hand rear corner valve failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3401	Right Rear Corner Valve	 Right-hand rear corner valve, general electrical failure Rear valve block disconnected Rear valve block harness wiring short 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		circuit to ground or high resistance Right-hand rear corner valve failure Air suspension control	
C1A3501	Reservoir Valve	Reservoir valve general electrical failure Reservoir valve block disconnected Reservoir valve block harness wiring short circuit to ground or high resistance Reservoir valve block failure Air suspension control module failure	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3601	Exhaust Valve	 Exhaust valve, general electrical failure Exhaust valve disconnected Exhaust valve harness wiring short circuit to ground or high resistance Exhaust valve failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3701	Front Cross-Link Valve	 Front cross-link valve general electrical failure Front valve block disconnected Front valve block harness wiring short circuit to ground or high resistance Front cross-link valve failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
C1A3801	Rear Cross-Link Valve		Refer to the guided diagnostic routine for this code on the

	DESCRIPTION	POSSIBLE CAUSES	ACTION
		Rear cross-link valve general electrical failure	approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		 Rear valve block disconnected 	suspect.
		 Rear valve block harness wiring short circuit to ground or high resistance Rear cross-link valve failure 	
		Air suspension control module failure	
C1A5501	Ignition Switch Input Circuit	 Ignition switch input circuit; ignition on while wake-up off or ignition off while engine running Ignition switch input 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
		circuit short circuit to ground, short circuit to power or high resistance	
C1A681C	Left Front Height Sensor Supply	 Left-hand front height sensor supply circuit voltage out of range Height sensor harness wiring short circuit to ground, short circuit to power or high resistance 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		 Height sensor failure Air suspension control module failure 	
C1A691C	Right Front Height Sensor Supply	 Right-hand front height sensor supply circuit voltage out of range Height sensor harness wiring short circuit to ground, short circuit to power or high resistance 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		 Height sensor failure Air suspension control module failure 	

DTC DESCRIPTION POSSIBLE CAUSES ACTION Left Rear Height Refer to the guided diagnostic Left-hand rear height Sensor Supply routine for this code on the sensor supply circuit approved diagnostic system. Refer voltage out of range to the warranty policy and Height sensor harness procedures manual if a module is wiring short circuit to suspect. ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure C1A711C Right Rear Refer to the guided diagnostic Right-hand rear height Height Sensor routine for this code on the sensor supply circuit approved diagnostic system. Refer Supply voltage out of range to the warranty policy and Height sensor harness procedures manual if a module is wiring short circuit to suspect. ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure C1A721C Left Front Left-hand front height Visually inspect the wiring harness Height Sensor and connectors for water ingress. sensor signal voltage Mechanism Refer to the guided diagnostic out of range (mechanical) routine for this code on the approved diagnostic system. Check Water ingress to wiring the height sensor bracket condition harness or connectors and security. Check the height sensor for correct installation and Height sensor linkage torque of fixings. If any height disconnected sensor fixings are slackened or found to be loose, or a height Height sensor linkage sensor has been changed, the damaged/bent vehicle ride height must be re-Height sensor calibrated. Calibrate the system disconnected using the approved diagnostic system. Refer to the warranty Height sensor linkage policy and procedures manual if a toggled (now module is suspect. operating in reverse direction) Height sensor bracket damaged/bent Height sensor incorrectly installed Incorrect height calibration Height sensor harness wiring short circuit to ground, short circuit to

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		power or high resistance	
		 Height sensor failure 	
		Air suspension control module failure	
C1A731C	Right Front Height Sensor Mechanism	 Right-hand front height sensor voltage out of range (mechanical) Water ingress to wiring harness or connectors Height sensor linkage disconnected Height sensor linkage damaged/bent Height sensor linkage toggled (now operating in reverse direction) Height sensor bracket damaged/bent Height sensor bracket damaged/bent Height sensor incorrectly installed Incorrect height calibration Height sensor harness wiring short circuit to ground, short circuit to ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure 	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the height sensor bracket condition and security. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system, Refer to the warranty policy and procedures manual if a module is suspect.
C1A741C	Left Rear Height Sensor Mechanism	Left-hand rear height sensor signal voltage out of range (mechanical) Water ingress to wiring harness or connectors Height sensor linkage disconnected Height sensor linkage damaged/bent Height sensor disconnected	Visually inspect the wiring harness and connectors for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system. Check the height sensor bracket condition and security. Check the height sensor for correct installation and torque of fixings. If any height sensor fixings are slackened or found to be loose, or a height sensor has been changed, the vehicle ride height must be recalibrated. Calibrate the system using the approved diagnostic system, Refer to the warranty

ACTION DTC DESCRIPTION **POSSIBLE CAUSES** policy and procedures manual if a Height sensor linkage toggled (now module is suspect. operating in reverse direction) Height sensor bracket damaged/bent Height sensor incorrectly installed Incorrect height calibration Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure Visually inspect the wiring harness C1A751C Right Rear Right-hand rear height and connectors for water ingress. Height Sensor sensor signal voltage Refer to the guided diagnostic Mechanism out of range routine for this code on the (mechanical) approved diagnostic system. Check Water ingress to wiring the height sensor bracket condition harness or connectors and security. Check the height sensor for correct installation and Height sensor linkage torque of fixings. If any height disconnected sensor fixings are slackened or found to be loose, or a height Height sensor linkage sensor has been changed, the damaged/bent vehicle ride height must be re-Height sensor calibrated. Calibrate the system disconnected using the approved diagnostic system. Refer to the warranty Height sensor linkage policy and procedures manual if a toggled (now module is suspect. operating in reverse direction) Height sensor bracket damaged/bent Height sensor incorrectly installed Incorrect height calibration Height sensor harness wiring short circuit to ground, short circuit to power or high resistance Height sensor failure Air suspension control module failure

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
C1B1862	Supply Voltage X-Ref Check	 Inconsistent battery voltages received by Air suspension control module Air suspension control module supply circuit(s) short circuit to ground Air suspension control module supply circuit(s) high resistance Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1B1903	Door Status Signal	 Door status signal, pulse width modulated failures Incorrect software loaded to Air suspension control module Central junction box to Air suspension module harness wiring short circuit to ground, short circuit to power or high resistance Central junction box fault 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
C1B211C	Compressor Brush Card Temperature Sensor Circuit	 Compressor brush card temperature sensor circuit, voltage out of range Compressor brush card temperature sensor harness wiring short circuit to ground, short circuit to power or high resistance Compressor brush card temperature sensor failure Air suspension control module failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
U007388	Control Module Communication Bus 'A' Off	 CAN bus connections short circuit to each other 	Refer to the Network Communications section of the workshop manual.
U010087	Lost Communication	 CAN bus fault 	

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION	
With ECM/PCM "A"		ECM disconnectedECM not configuredECM failure	Refer to the Network Communications section of the workshop manual.	
U010187	Lost Communication With Transmission Control Module	 CAN bus fault Transmission control module (TCM) disconnected TCM not configured TCM failure 	Refer to the Network Communications section of the workshop manual.	
U010287	Lost Communication With Transfer Box Control Module	 CAN bus fault Transfer box control module disconnected Transfer box control module not configured Transfer box control module failure 	Refer to the Network Communications section of the workshop manual.	
U012287	Lost Communication With Vehicle Dynamics Control Module	 CAN bus fault ABS module disconnected ABS module not configured ABS module failure 	Refer to the Network Communications section of the workshop manual.	
U012687	Lost Communication With Steering Angle Sensor Module	 CAN bus fault SASM disconnected SASM not configured/calibrated SASM failure 	Refer to the Network Communications section of the workshop manual.	
U012887	Lost Communication With Park Brake Control Module	 CAN bus fault Park brake module disconnected Park brake module not configured Park brake module failure 	Refer to the Network Communications section of the workshop manual.	
U013387	Lost Communication	 CAN bus fault 	Refer to the Network Communications section of the workshop manual.	

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
	With Active Roll Control Module	Vehicle dynamic suspension system module disconnected Vehicle dynamic suspension system module not configured	
		ABS module failure	
U013687	Lost Communication With Differential Control Module - Rear	 CAN bus fault Electronic rear differential control module disconnected Electronic rear differential control module not configured Electronic rear differential control module failure 	Refer to the Network Communications section of the workshop manual.
U015587	Lost Communication With Instrument Panel Cluster (IPC) Control Module	 CAN bus fault Instrument cluster disconnected Instrument cluster not configured Instrument cluster failure 	Refer to the Network Communications section of the workshop manual.
U030055	Internal Control Module Software Incompatibility	 Incorrect software loaded CAN wiring to instrument cluster high resistance Incorrect instrument cluster CAN configuration 	Configure the Air suspension control module and instrument cluster as necessary using the approved diagnostic system.
U040186	Invalid Data Received From ECM/PCM A	 Engine management system fault 	Refer to the Network Communications section of the workshop manual.
U041686	Invalid Data Received From Vehicle Dynamics Control Module	 Warnings and Messages: Warning - Two Chimes Displayed message - SLOW DOWN OR VEHICLE WILL LOWER 	Refer to the Network Communications section of the workshop manual. Check for ABS system DTCs and repair as necessary.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		Subsequent Warning & Message Warning - One Chime.	
		Message - SUSPENSION LOWERED	
		 Meaning - Vehicle has lowered to Access height because of failure of another vehicle system 	
		ABS fault	
U041786	Invalid Data Received From Park Brake Control Module	 Park brake fault 	Refer to the Network Communications section of the workshop manual.
U042886	Invalid Data Received From Steering Angle Sensor Module (SASM)	SASM not configured/calibratedSAS fault	Check the security of the electrical connection. Configure/calibrate the SAS using the approved diagnostic system. Refer to the Network Communications section of the workshop manual.
U043486	Invalid Data Received From Active Roll Control Module	 Vehicle dynamic suspension system fault 	Refer to the Network Communications section of the workshop manual.
U1A1387	Lost Communication With All Terrain Control Module	 Lost communication with all terrain optimization switch CAN bus fault Terrain optimization switch disconnected Terrain response module not configured Terrain response module failure 	Refer to the Network Communications section of the workshop manual.
U1A1449	CAN Initialization Failure	 Internal electronic failure 	Refer to the Network Communications section of the workshop manual,
U1A3562	VIN Data	 VIN from instrument cluster does not match VIN at time of calibration Air suspension control module has been 	Configure the instrument cluster using the approved diagnostic system.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		swapped with another vehicle Instrument cluster not configured	
J200067	Motor Temperature	 Temperature sensor voltage takes too long to read after suitable compressor runtime Compressor brush card temperature sensor harness wiring short circuit to ground, short circuit to power or high resistance Compressor brush card temperature sensor failure Compressor fault 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.
J200701	Valve(s)	 Valve circuit short circuit to ground Water ingress to wiring harness or connectors Valve harness wiring short circuit to ground or high resistance Air suspension control module failure 	DTC C1A001D will be set first. Visually inspect the wiring harness and connectors between the Air suspension control module and the control valves for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
U200711	Valve(s)	 Valve circuit short circuit to ground when system is inactive Water ingress to wiring harness or connectors Valve harness wiring short circuit to ground or high resistance Air suspension control module failure 	Visually inspect the wiring harness and connectors between the Air suspension control module and the control valves for water ingress. Refer to the guided diagnostic routine for this code on the approved diagnostic system.
U200719	Valve(s)	 Valve circuit current above threshold Valve supply circuit(s) intermittent short circuit to ground or high resistance Valve failure 	Refer to the guided diagnostic routine for this code on the approved diagnostic system.

DTC	DESCRIPTION	POSSIBLE CAUSES	ACTION
		 Air suspension control module failure 	
U200767	Valve(s)	 Valve signal incorrect after event 	Visually inspect the wiring harness and connectors between the Air
		 Water ingress to wiring harness or connectors 	suspension control module and the control valves for water ingress. Refer to the guided diagnostic
		 Valve supply circuit(s) short circuit to ground, short circuit to power or high resistance 	routine for this code on the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.
		 Air suspension control module failure 	

AIR SUSPENSION DEFLATION EXIT ROUTINE

- 1. Key on, engine off.
- 2. Key off.
- 3. Press and release raise switch.
- 4. Press and release lower switch.
- 5. Key on, engine off.
- 6. Key on, engine running.
- 7. Press and release raise switch twice.
- 8. Press and release lower switch twice.
- 9. Press and release raise switch.