SERVICE CAMPAIGN BULLETIN

CAMPAIGN REF : 012

TITLE : Software and rework requirements (8.2.2)

DOCUMENT # : 11 M 020

AFFECTED VEHICLES : 12C Coupe

SITUATION :

Quality Engineering at McLaren Automotive have released a significant new software platform that offers improved functionality and customer satisfaction. There are also some enhancements to the vehicle that require manual installation. The most noticeable benefits of this bulletin include:

- Electrical Drain on Battery
    - Battery drain countermeasures to avoid rapid battery drain
    - Reduced door glass short drop allowing entry into vehicle with a flat battery
- Keys
    - Remote opening of the driver's door using the key
    - Improved electronic door key signal filtering to alleviate vehicle access faults.
- IRIS
    - Improved stability
- HVAC
    - Improvement of side to side temperature control within the climate control system;
- Seats
    - Introduction of intelligent seat recline
    - Reduced airbag warning message faults with changes to Occupancy Classification System (OCS) sensors and seatbelt buckle wire check
- Other
    - Alleviation of rear lamp water ingress
    - Durability enhancement of suspension displacement sensor
    - Rectification of instances when the seatbelt fails to retract
    - Reduction of body panel and interior rattles
    - Improved serviceability of suspension components
    - Addition of door release strap warning label
    - Improved calibration of brake light switch
    - Improved reliability of Intake Sound Generator (ISG)
    - Improved stability of Electronic Park Brake (EPB)
    - Alleviation of alarm siren sounding continuously
    - Durability enhancement of wiper hose.
    - Alleviate the need to remove the ICPC (In Car Personal Computer) fuse when the McLaren Diagnosis system (MDS) is used.

PROCEDURE :

Perform all mechanical work and software updates as outlined.
The software updates are listed in the following chart:

MODULE	NEW SOFTWARE PART NUMBERS
Body Controller (BC)	11M1215CP.05
SBC (Security Body Controller (SBC)	11M1075CP.06
Electronic Park Brake (EPB)	11M0935CP.03
Heating Ventilation and Air-Conditioning (HVAC)	11A4742CP.09
Door Module Left (DML)	11M1071CP.05
Door Module Right (DMR)	11M1070CP.05
Powertrain Chassis Control Unit (PCCU)	11M0938CP.12
Seat Control Module Left (SCML)	11N2321CP.02
Seat Control Module Right (SCMR)	11N2320CP.02
Instrument Cluster (IC)	11M1180CP.11
IRIS System / Head Unit	11M2167CP.01
Engine Control Module (ECM)	11M1399CP.04

Care point: Both vehicle keys are required in order to perform this update.

Care point: It is necessary that 11 A 017 "Replacing water drain hose and retrofitting a securing clip" is not outstanding. This work needs to be performed before 11 M 020 "Software and rework requirements" is carried out.

Care point: It is necessary that 11 A 018 "Additional sealant and gasket to fuel filler neck" is not outstanding. This work needs to be performed before 11 M 020 "Software and rework requirements" is carried out.

Care point: It is necessary that bulletin 11 M 012 "IRIS reception and operational stability issues" is not outstanding. This bulletin needs to be performed before the new software platform is installed.

Care point: It is necessary that bulletin 11 M 021 "Software update" bulletin is not outstanding. This work needs to be performed before 11 M 020 "Software and rework requirements" is carried out.

Care point: It is necessary that bulletin 11 N 003 "Manual Seat rework" is performed, on all affected vehicles, in conjunction with this bulletin. Ensure you are familiar with both bulletins before commencing work.

Care point: It is necessary that bulletin 11 N 002 "Electric seat rework" is performed, on all affected vehicles, in conjunction with this bulletin. Ensure you are familiar with both bulletins before commencing work.

Care point: It is necessary that bulletin 11 Q 002 "Tracker aerial rework" is performed, on all affected left hand drive vehicles, in conjunction with this bulletin. Ensure you are familiar with both bulletins before commencing work.

Care point: It is necessary that bulletin 11 Q 003 "Tracker aerial rework" is performed, on all affected right hand drive vehicles in conjunction with this bulletin. Ensure you are familiar with both bulletins before commencing work.

Care point: It is necessary that 11 G 001 "Right hand driveshaft check" is performed, on all affected vehicles, in conjunction with this bulletin. Ensure you are familiar with both bulletins before commencing work.

Care point: The work required in this bulletin is significant and will require the vehicle to be kept overnight. It is therefore important that no campaign is outstanding before the vehicle leaves the dealer premises. Check for all outstanding campaigns on the dealer portal.

Care point: It is a requirement to make notes of your findings at indicated points within this bulletin. Please enter the results on this documentation. You are then requested to confirm the results on page 83-86 and send this page back through the created work package.

Care point: Ensure appropriate car covers and protection is used at all times.

**Care point:** It is necessary all replaced parts are returned via the normal warranty procedure.

WORK PACKAGE SECTION

Care point: Always refresh internet explorer before opening another work package.

1. A work package must be created prior to commencing work on each vehicle. McLaren Automotive will send an e-mail to relevant personnel within the dealer network which contains data that must be entered within the work package. Find the VIN number of the vehicle that you are going to work on and the coding string, short text and long text will be alongside (1).

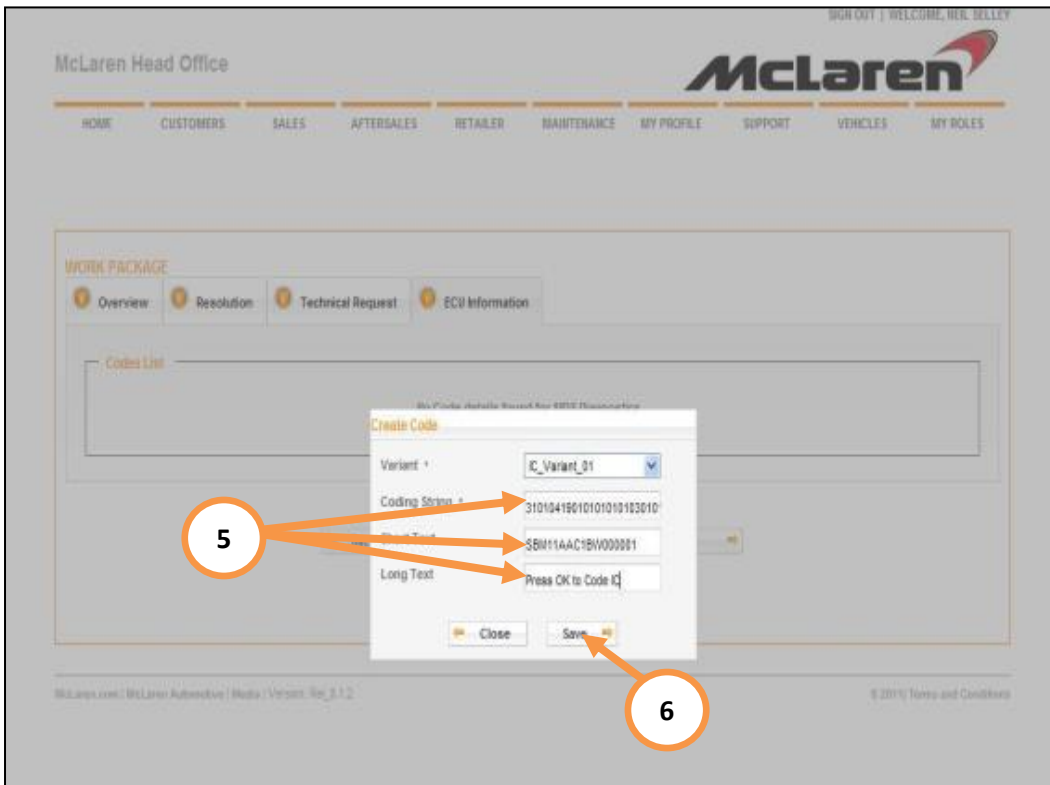|	A	B		C	D	
1	VIN Number	Coding String		Short Text	Long Text	
2	SBM11AAC1BW000001	310104190101010101030101030200000070101020001010001000100000001040100010		SBM11AAC1BW000001	Press OK to Code IC	
3	SBM11AAA3CW000002	310104190101010101030101030200000070101020001010001000100000001040100010		SBM11AAA3CW000002	Press OK to Code IC	
4	SBM11AAC5BW000003	310104190101010101030101030200000070100020001010001000100000101040101010		SBM11AAC5BW000003	Press OK to Code IC	
5	SBM11AAC7BW000004	310104190101010101030101030200000070100020001010001000100000101040101010		SBM11AAC7BW000004	Press OK to Code IC	
6	SBM11AAC9BW000005	310104190101010101030101030200000070100020001010001000100000101040101010		SBM11AAC9BW000005	Press OK to Code IC	

2. Open a work package within the dealer portal and within the ECU information section (2) select add code (3).
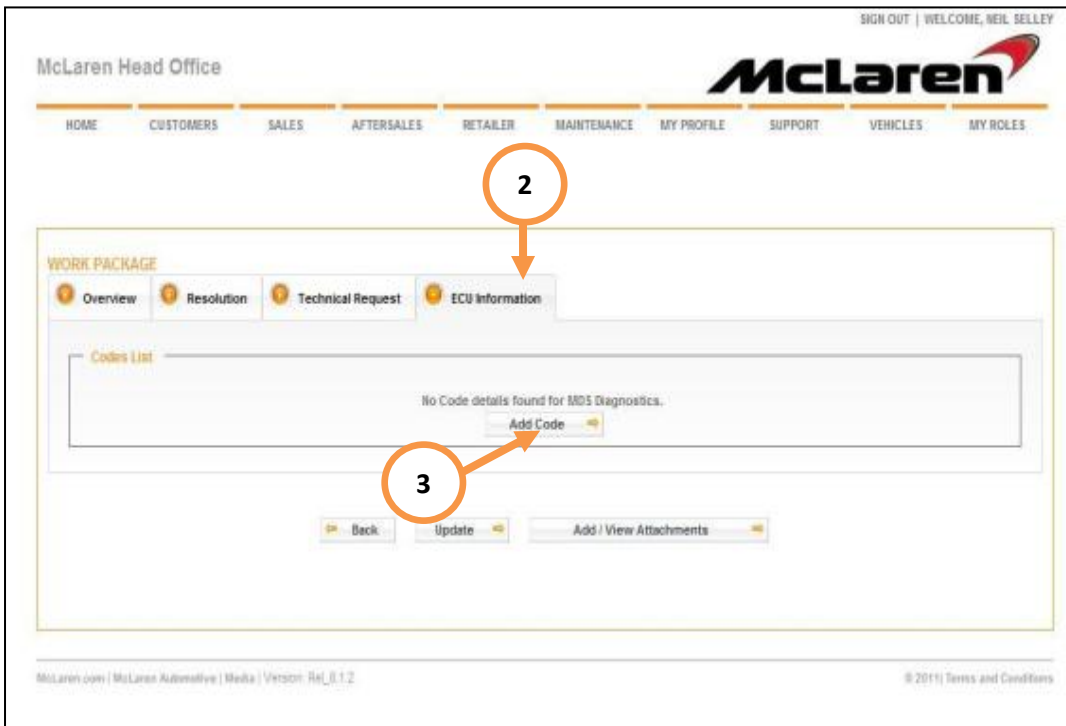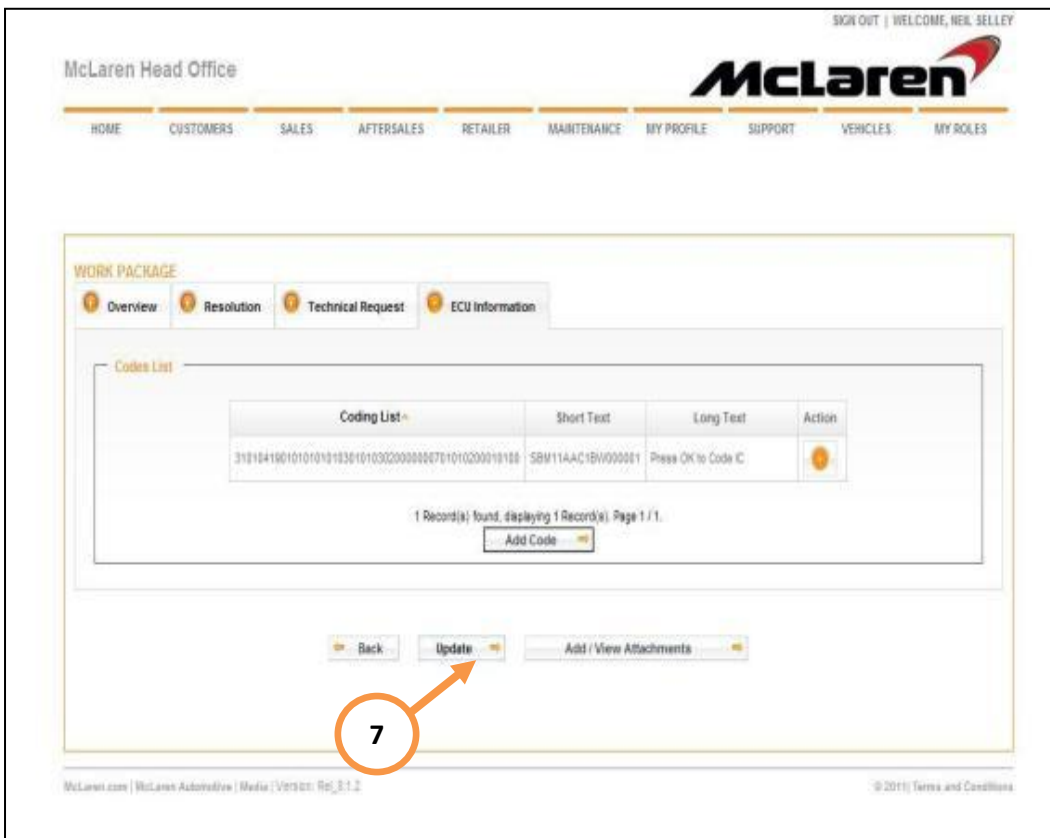
3. Add the coding string IC_VARIANT_02 displayed in the drop down menu (4).
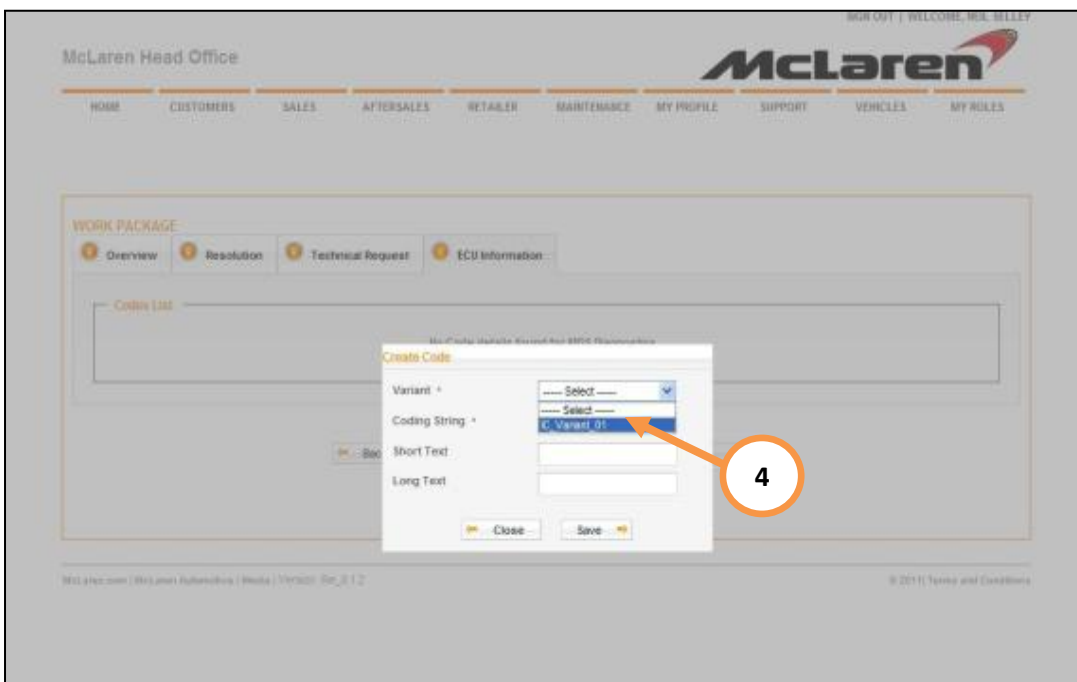
4. Populate the coding string with the data provided and copy and paste the short text and long text fields from the details in the e-mail (5). Click save once completed (6).

5. Once the coding list field has been populated select the update button (7)

6. Attach the McLaren Diagnostic System (MDS). Once a quick test has been performed record all Diagnostic Trouble Codes (DTC)'s within the affected control units on the table below:

STORED DIAGNOSTIC TROUBLE CODES		

OCS SENSOR REPLACEMENT

REMOVAL :

Care point: As outlined in the work instructions it is necessary to put the vehicle into sleep mode (ignition off) and leave in this state for a minimum of 5 minutes before disconnecting the battery ground line. This is to prevent numerous vehicle calibration issues.

7. Please refer to A-RM-06N03-01-009 – Remove/install passenger seat.

8. Disconnect electrical connector (8) and remove securing nut (M10 13Nm) (9).

9. Remove OCS sensor shown (10). Continue to remove the remaining three sensors located in the front and rear of the unit.
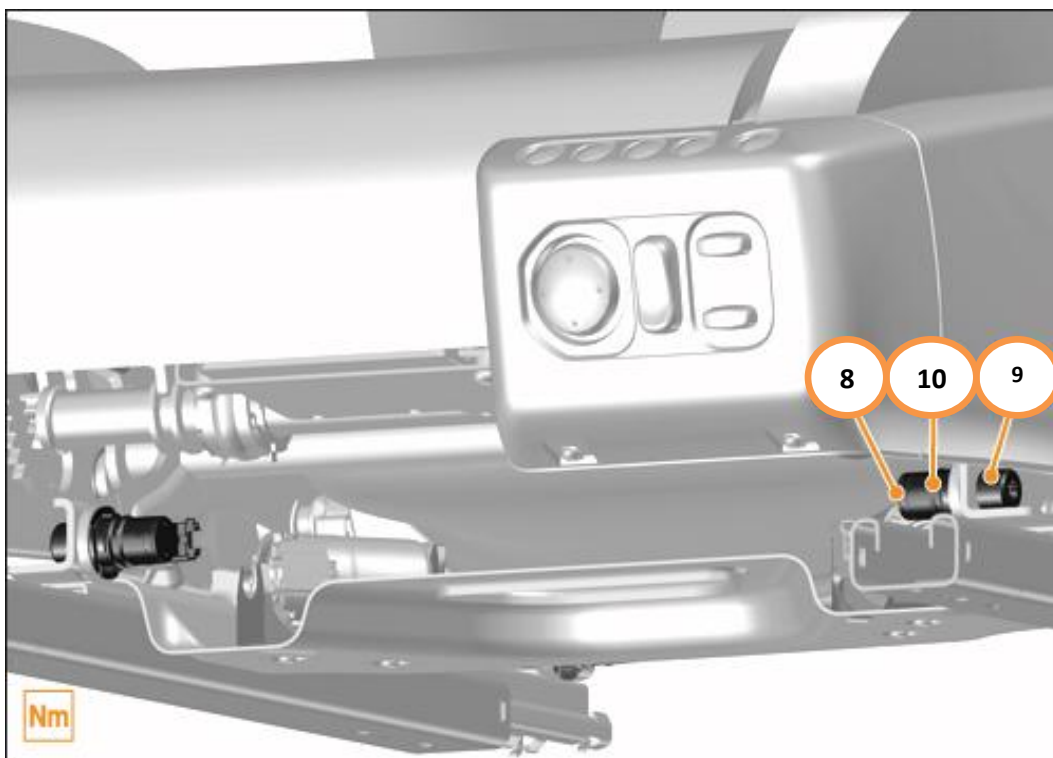
INSTALLATION :

Care point: Use grease when inserting new sensors. McLaren Automotive recommend Fin grease, or equivalent fine spray lubricant, is used. Avoid grease contact with the end face of the sensor.

Care point: Ensure mounting position is located correctly. It is vital that the sensors are fitted completely horizontal and are exactly parallel to each other.

10. Install all four replacement OCS sensors. Leave the seat out of the vehicle until point 47. This will make it easier to access the Body Controller. It will also allow the seat belt buckle and bolt to be replaced efficiently, if it is necessary to replace on the passenger seat. The battery ground line can be left unplugged until point 20.

SEATBELT BUCKLE WIRE CHECK

11. Check the seatbelt wire is in accordance with the image on the left marked correct. If the wire is not as per the left hand image, the seatbelt buckle will have to be replaced. The image on the right, marked incorrect, is an example of a seatbelt buckle that has to be changed. The seatbelt buckle wire should not be taught, a 'correct buckle' has

additional slack at the top of the stalk. There should be a loop spare as the difference between a 'correct' and 'incorrect' seatbelt buckle wire is around 15-20mm.
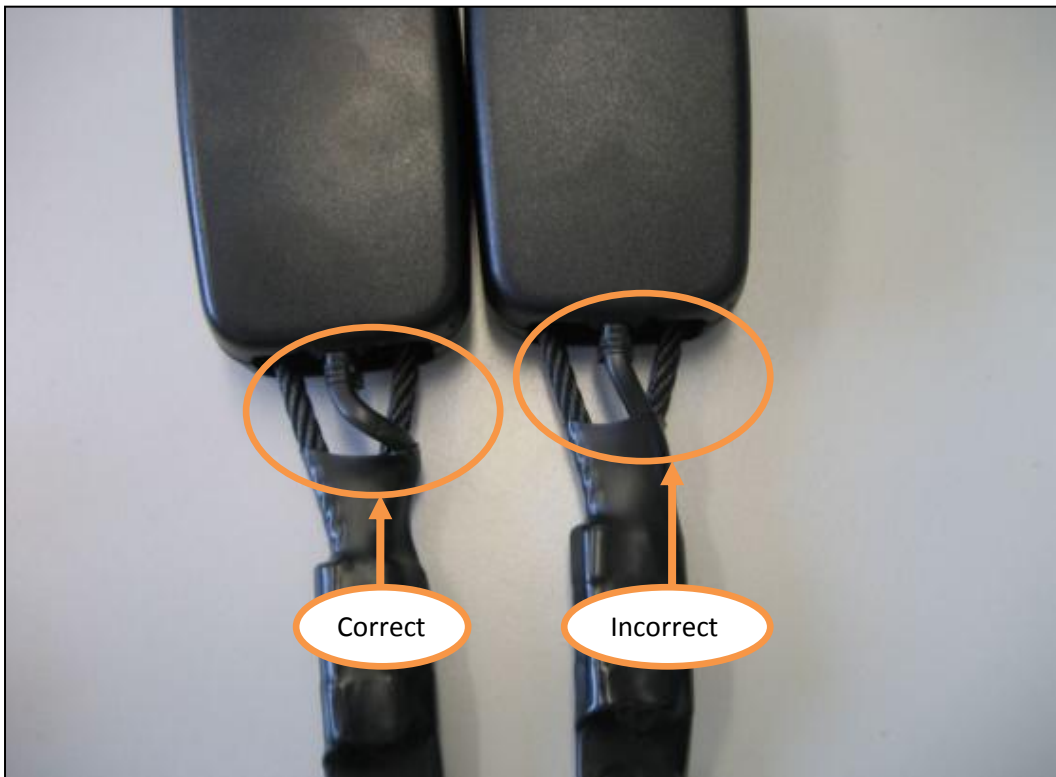
Care point: If only one seatbelt buckle wire is incorrectly routed, only that component will need to be replaced. It is not necessary to replace the buckles as a pair.

12. If the seatbelt buckle wire is routed correctly proceed to point 15. If the seatbelt buckle wire is incorrectly routed the seat belt buckle and bolt will have to replaced by following points 13-14.

13. Please refer to A-RM-06N03-01-009 – Remove/install seat (if the driver seat has to be removed).

14. Please refer to A-RM-06N03-01-012 – Remove/install seat – seatbelt stalk

Warranty Information: If a seatbelt buckle and bolt does require replacement the parts required will be:

11N1942CP - Seatbelt - Buckle and Bolt - 2W (for manual seats)

11N2457CP - Seatbelt - Buckle and Bolt - 4W (for electric seats)

Additional time can be claimed for fitment of the seatbelt buckle and bolt using the additional costs section within your campaign work package. However, please be aware time is already included to remove a passenger seat within this bulletin. Time allowed for removing the driver seat would be included if the VIN is part of the seat rework bulletins 11 N 002 or 11 N 003.

These parts are the only items that will not be supplied free of charge by the McLaren Production Centre. The relevant part should be claimed through the normal warranty procedure.

SEATBELT PROTECTOR CHECK

15. The following image is an example of the seatbelt assembly orientation as it is fitted within a vehicle.


16. Check the seatbelt protector orientation in relation to the metal ring (11). The image below shows how the protector should be located in relation to this component.
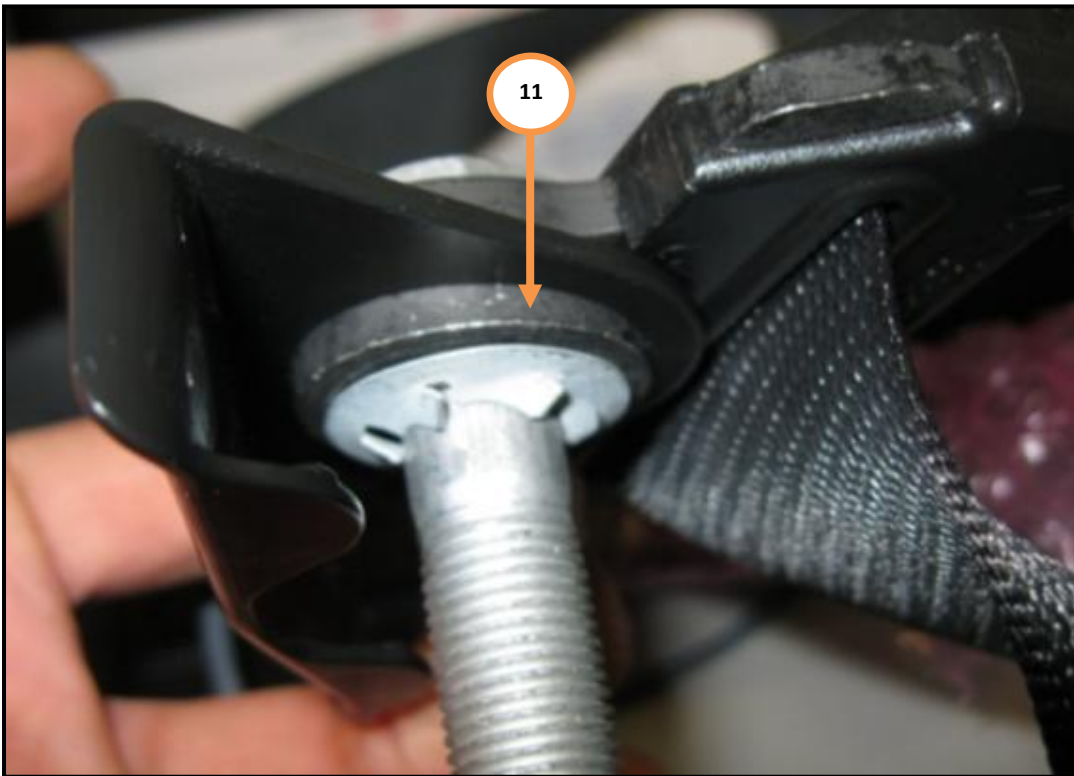
17. An example of the protector being fitted incorrectly is shown in the next image (12). Please note that it has been fitted off-centre the metal ring. If the seatbelt protector has been fitted incorrectly it can become trapped by the bolt.

Care point: Witness marks are also visible on the seatbelt protector if it has been fitted off-centre (13)
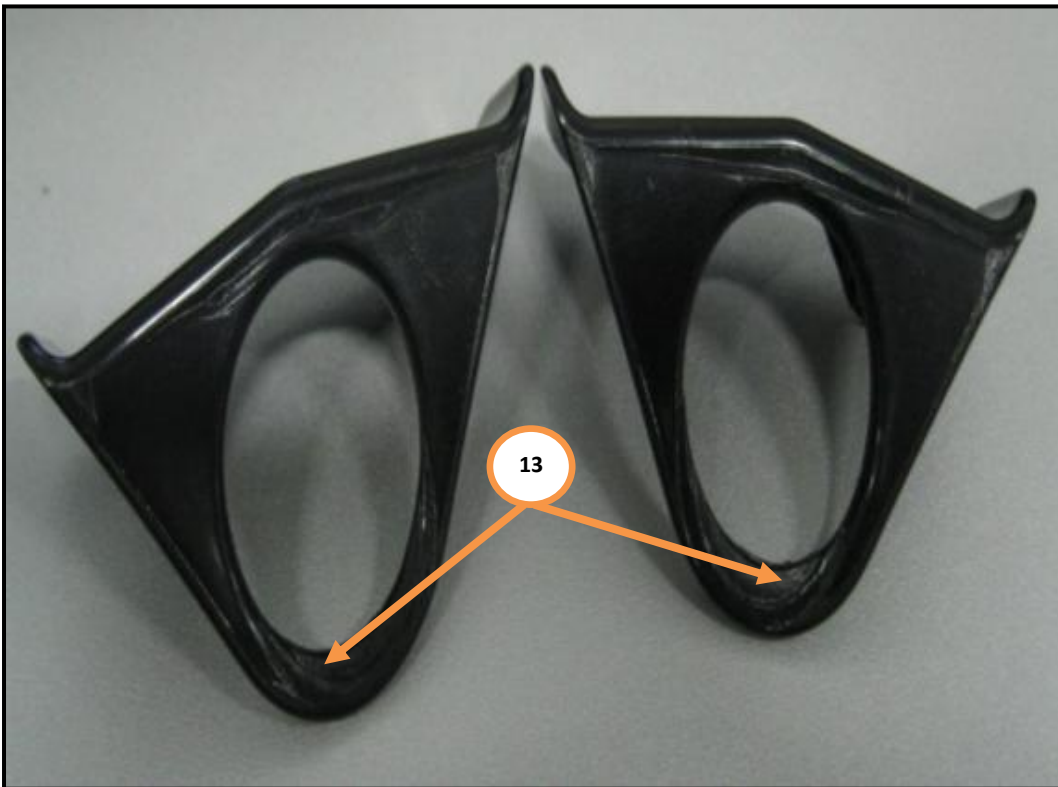
18. If the seatbelt protector is fitted correctly no further action is necessary. Please go to point 20 to continue with the bulletin.

Warranty Information: If a seatbelt protector does require replacement the parts will be supplied free of charge by the McLaren Production Centre.

19. Only replace both seatbelt protectors if both have been incorrectly fitted. To complete this task please refer to A-RM-06N04-01-001 – Remove/install seatbelt. Additional time of 0.5 hours per side can be claimed if necessary.

REPLACEMENT OF BODY CONTROL UNIT AND ADDITION OF SBC INLINE FILTER

20. Re-connect battery ground lead. Please refer to A-RM-05M01-01-001 – disconnect/connect battery ground line. Then put vehicle into ignition state 5.

21. Within MDS proceed to the Diagnostic Toolbox (14) and select SBC (15) then sequences (16). Un-pair immobiliser (17) followed by arrow key (18)
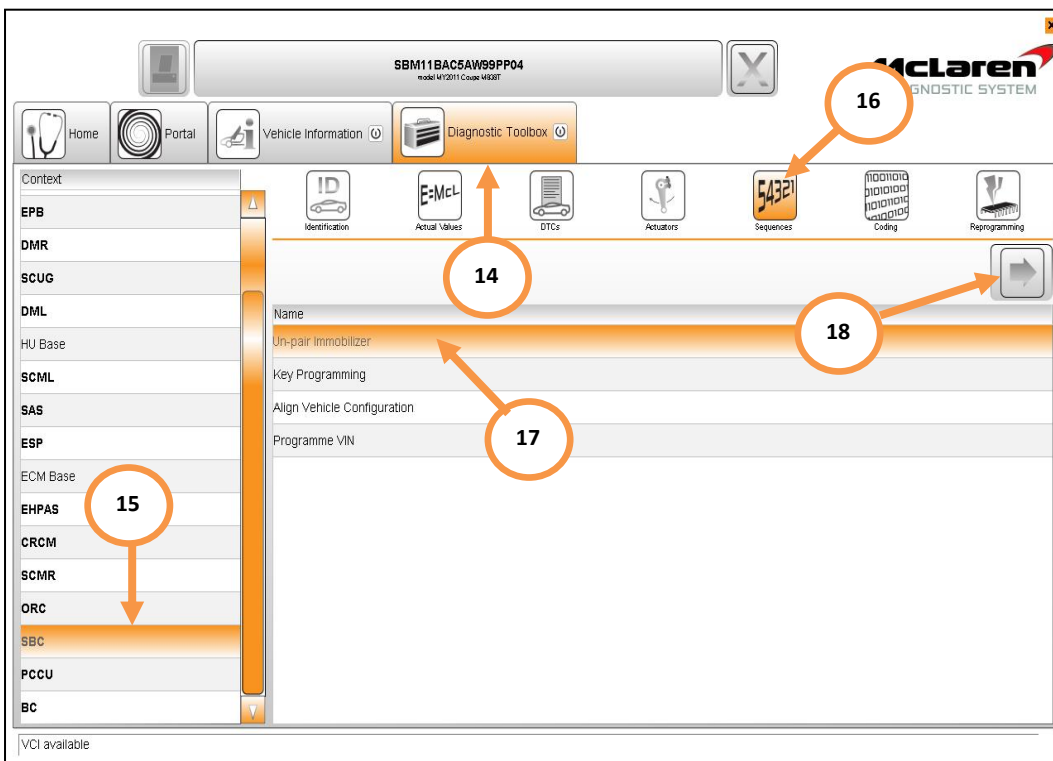
22. Once a positive response is displayed on the screen exit the session and switch off ignition.

Care point: Ensure that the vehicle has had one sleep cycle prior to Body Controller removal.

23. Disconnect battery ground line. Please refer to A-RM-05M01-01-001 – disconnect/connect battery ground line.

REMOVAL :

Care point: Carefully remove both ferrites (19) attached to the Body Control Unit (BC) and stick them back on once the new unit is installed using Permelastic tape (00RL004).
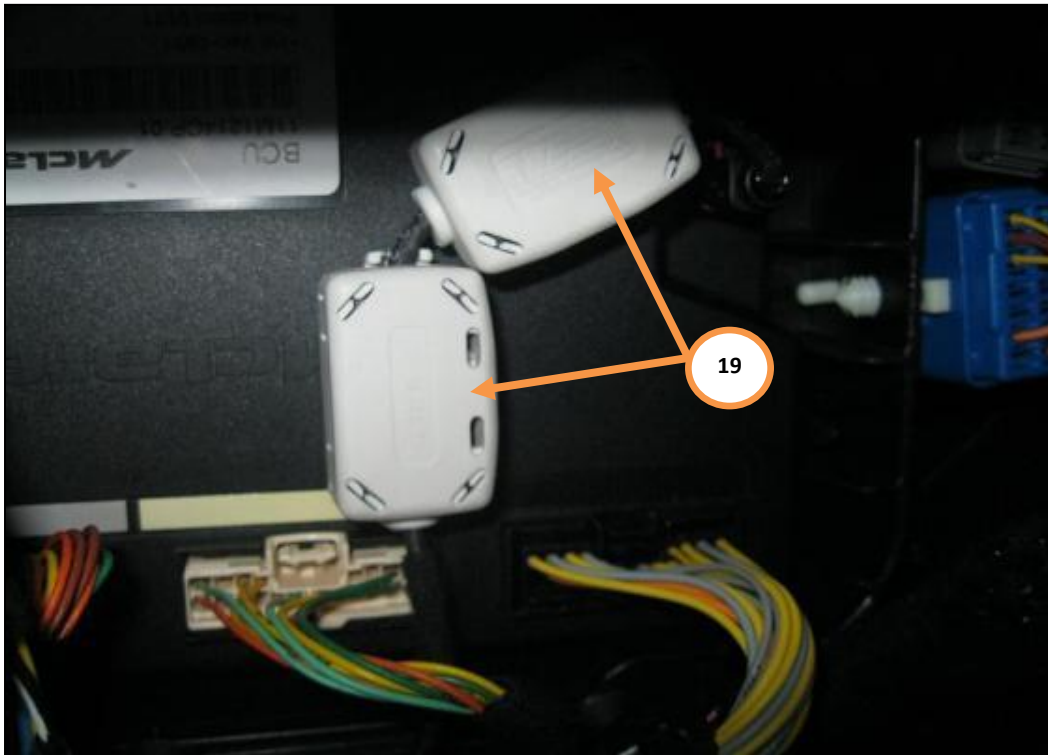
24. Please refer to A-RM-05M03-01-003 Remove/install electronic control unit – Body Controller.

INSTALLATION :

25. Install new Body Controller components in reverse order leaving the body harness connector loose that has the ferrites attached.

Care point: The link harness is not marked in/out. It does not matter which end is plugged into the filter and body controller.

26. Attach the inline filter in the location below (20) using Permelastic tape (00RL004). The loose plug on the body harness connector, originally fitted to the Body Controller, should now be fitted to the filter housing (21). Using the link harness (11M1950CP) plug one end into the remaining filter connector (22) and the other into the BC (23)
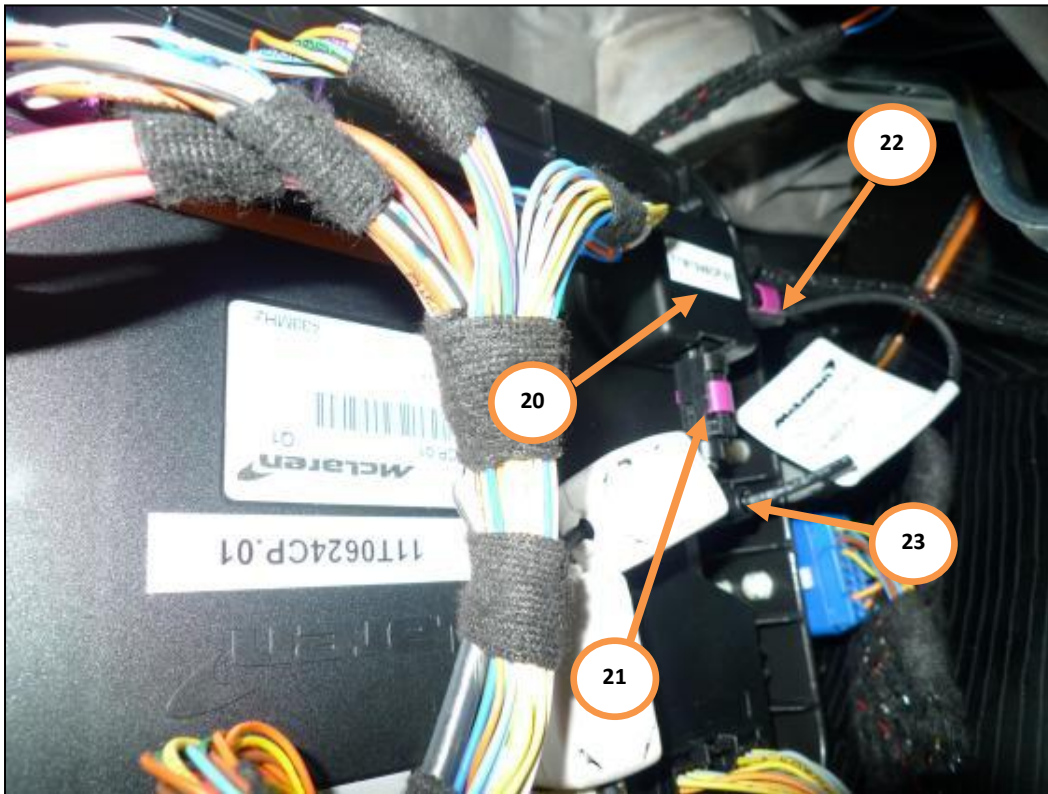
27. Reconnect battery ground line. Please refer to A-RM-05M01-01-001 – disconnect/connect battery ground line.

Care point: Do not switch the vehicle on and off again for any reason until at least point 39. When the ignition is cycled do not press the brake pedal in order to avoid the engine starting.

28. Connect McLaren Diagnosis System (MDS), put vehicle in ignition state 5 and proceed to Diagnostic toolbox within Security Body Controller (SBC).

29. Within MDS proceed to the Diagnostic Toolbox (24) select SBC (25) then Sequences (26) Select Align Vehicle Configuration (27) then the arrow key (28).
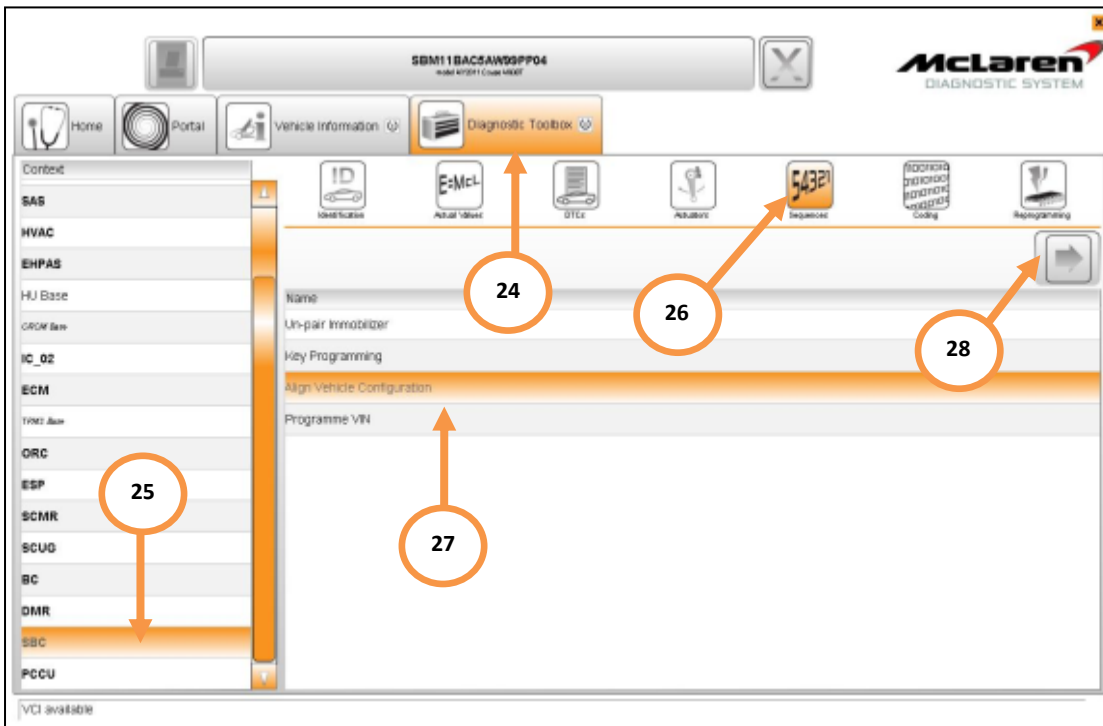
30. The above procedure will force a sleep cycle to occur. Press start/stop button to put vehicle into ignition state 5 before following the next steps.

31. Within Reprogramming (29) select software level 11M1075CP.06 (30) and proceed to the software download by selecting the tick button (31) followed by the arrow button (32).
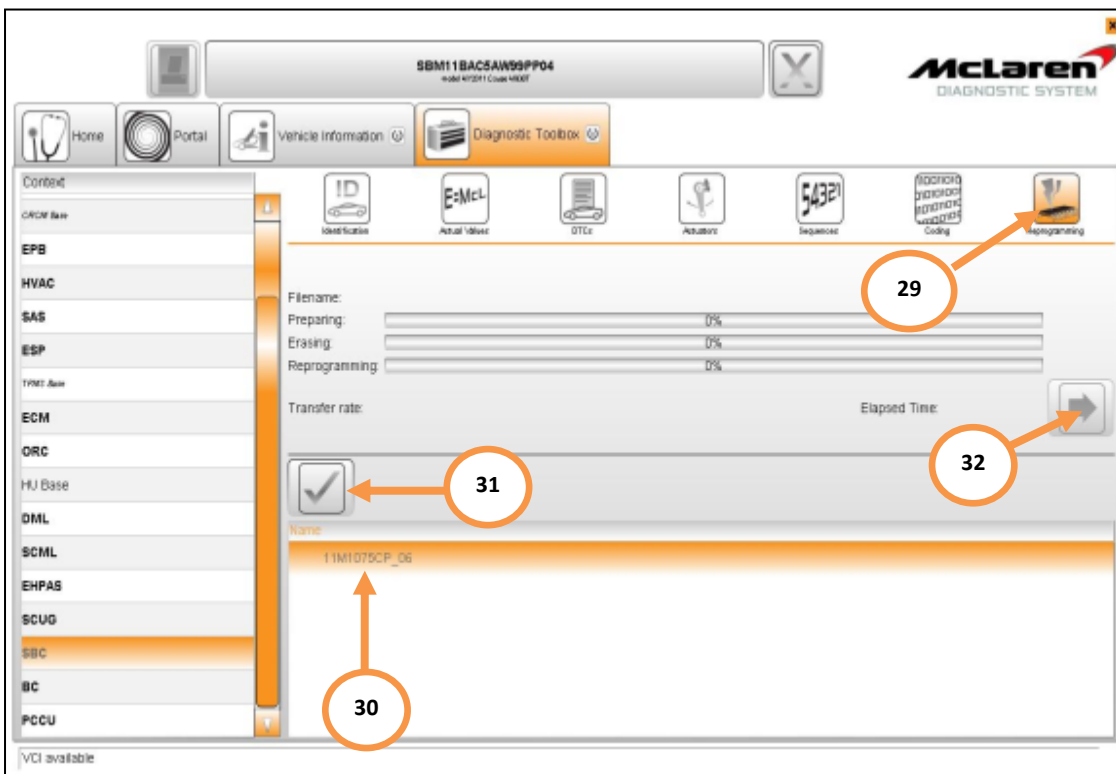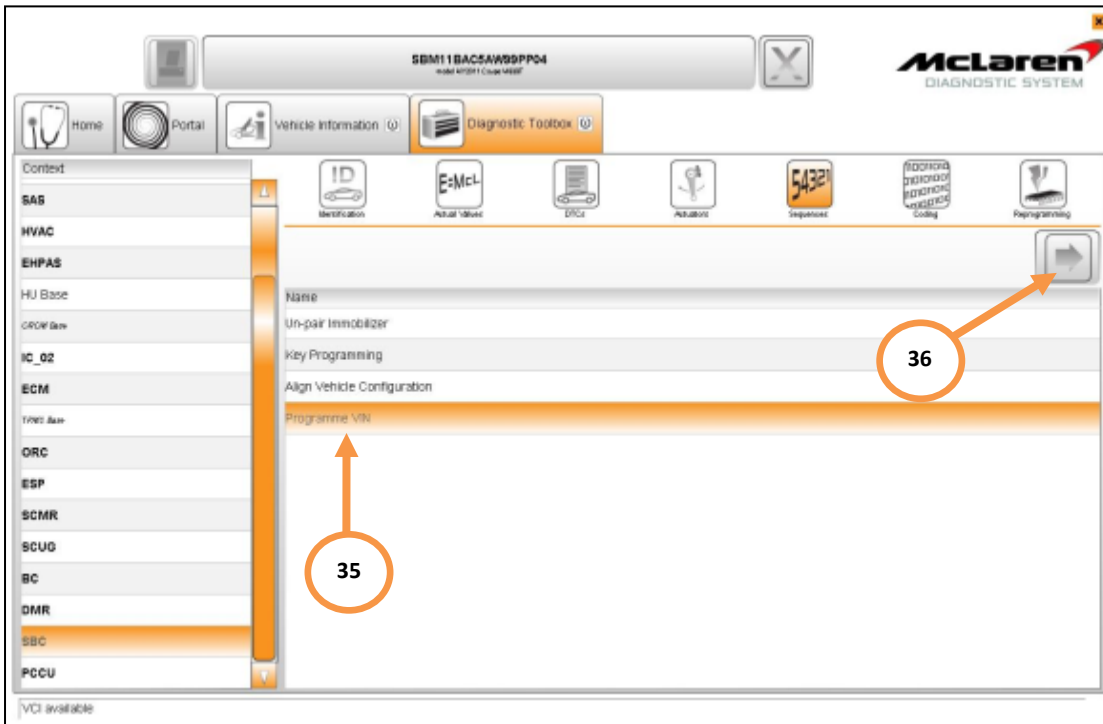
32. When the download is successful cycle the procedure will force a sleep cycle to occur. Press start/stop button to put vehicle into ignition state 5 before following the next steps.

33. Select Key Programming (33) followed by the arrow key (34) and follow procedure described by MDS.
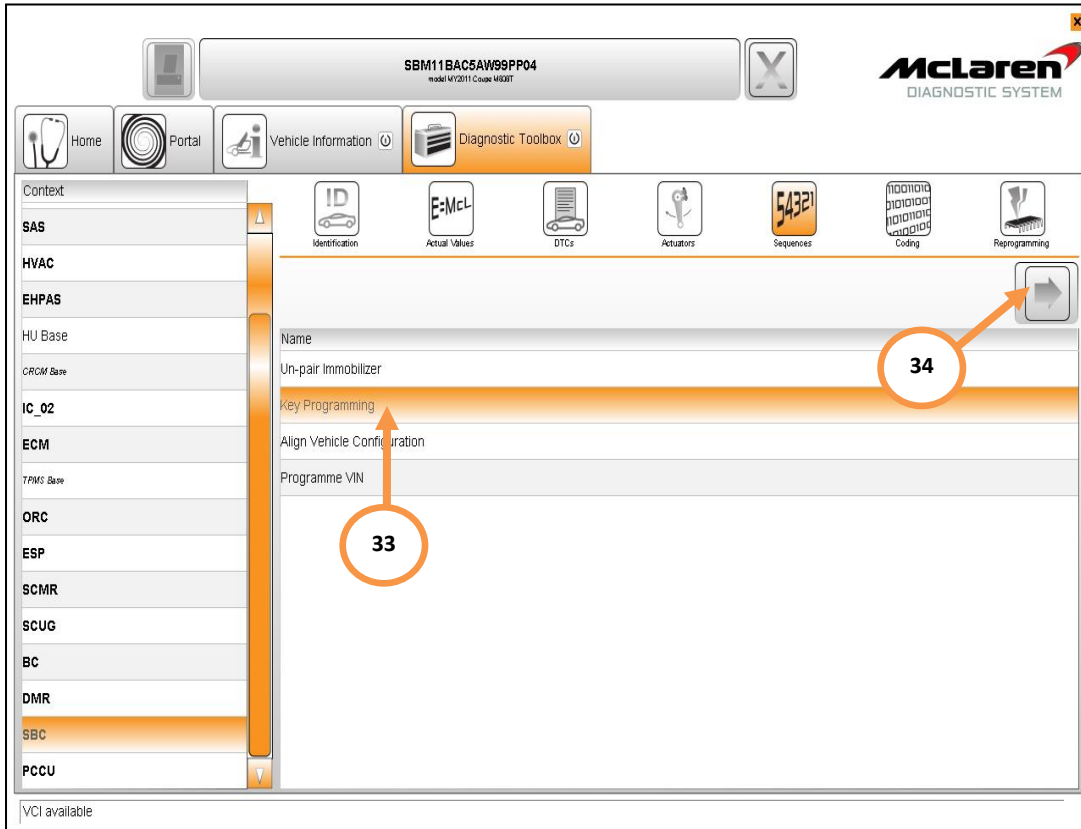
34. Select Programme VIN procedure (35). Select the arrow button to proceed (36).

35. Within MDS proceed to the Diagnostic Toolbox (37). Select BC (38) then (39). Select software level 11M1215CP.05 (40) and proceed to the software download by selecting the tick button (41) followed by the arrow button (42).
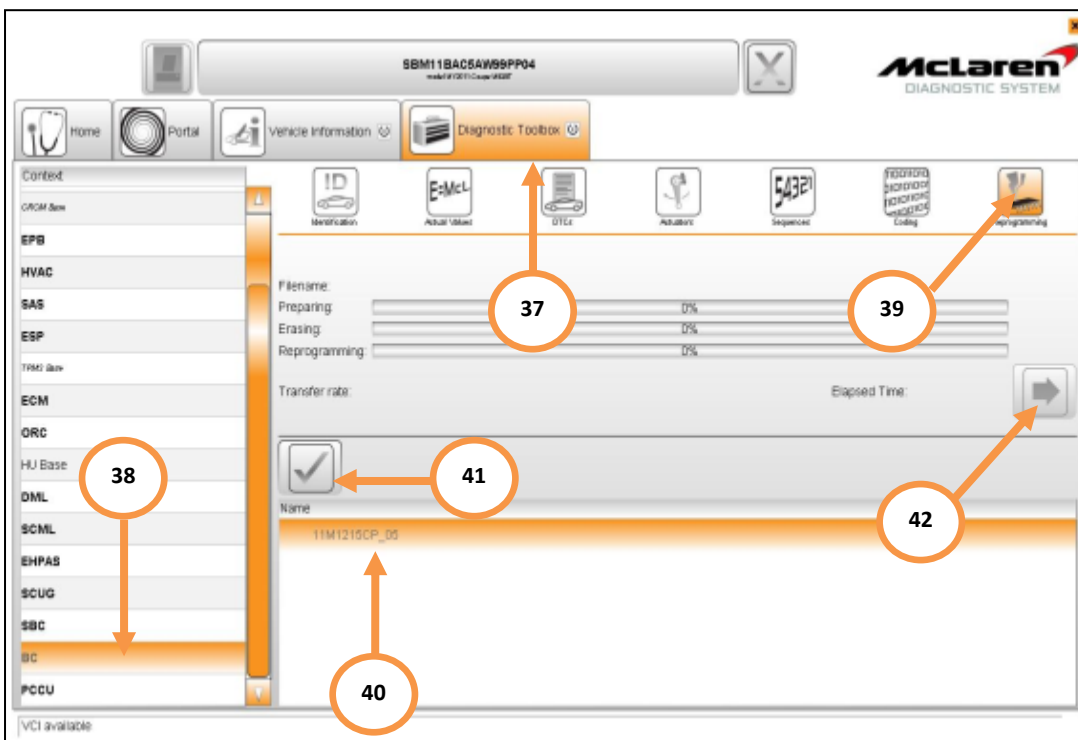
36. Select sequences section (43) then Programme VIN procedure (44). Select the arrow button to proceed (45).
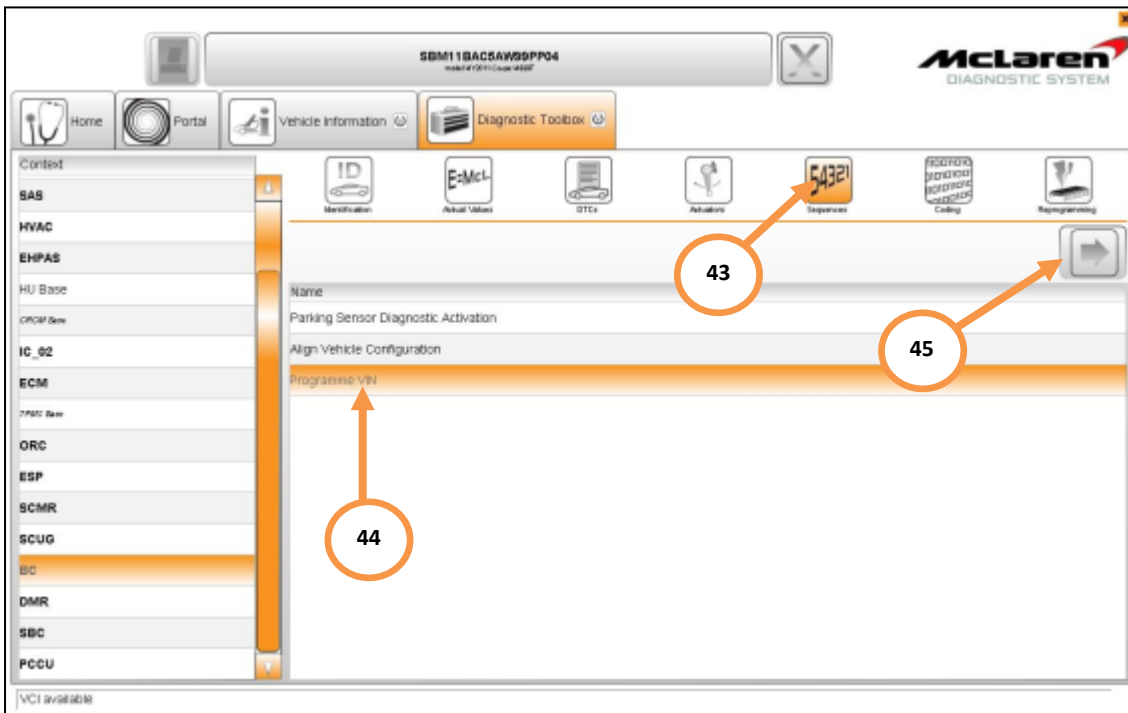
37. Select Align Vehicle Configuration (46) followed by the arrow key (47).
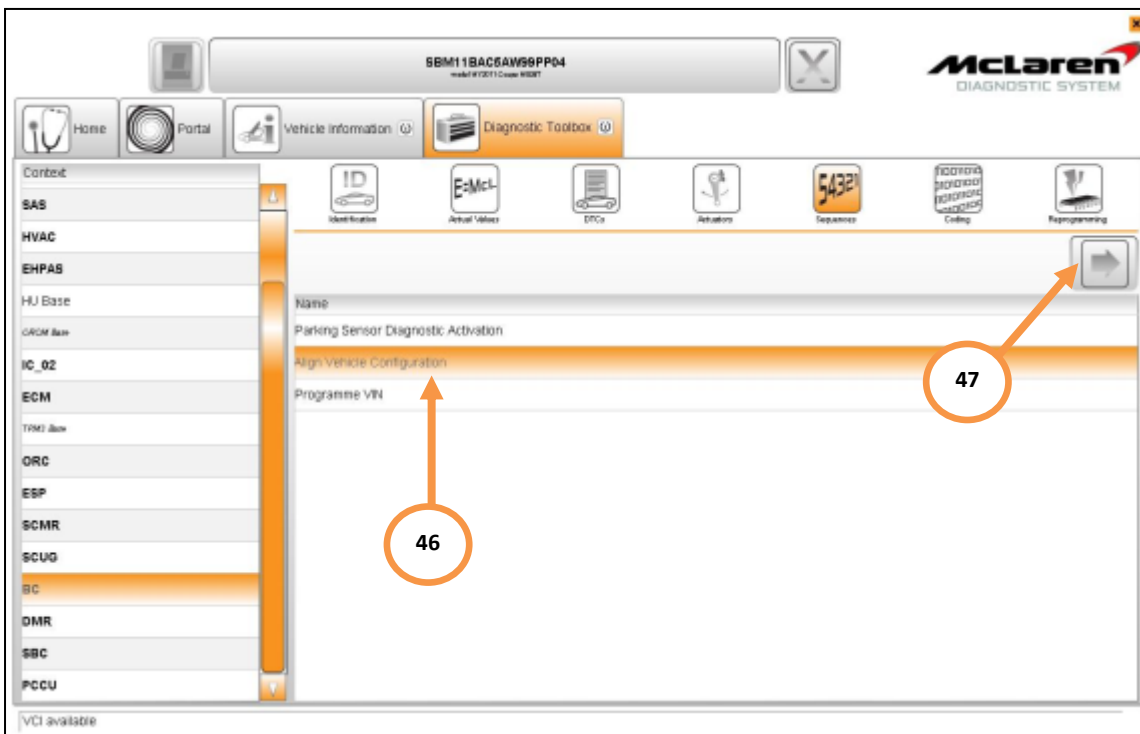

Care point: If bulletin 11 M019 "Software platform release" or 11 M 021 "Software update" has not been performed the context field will display IC rather than IC_02.

38. Still within the Diagnostic Toolbox select IC_02 (48) and enter the Sequences section (49). Select Align Vehicle Configuration (50) and then select the arrow key (51).
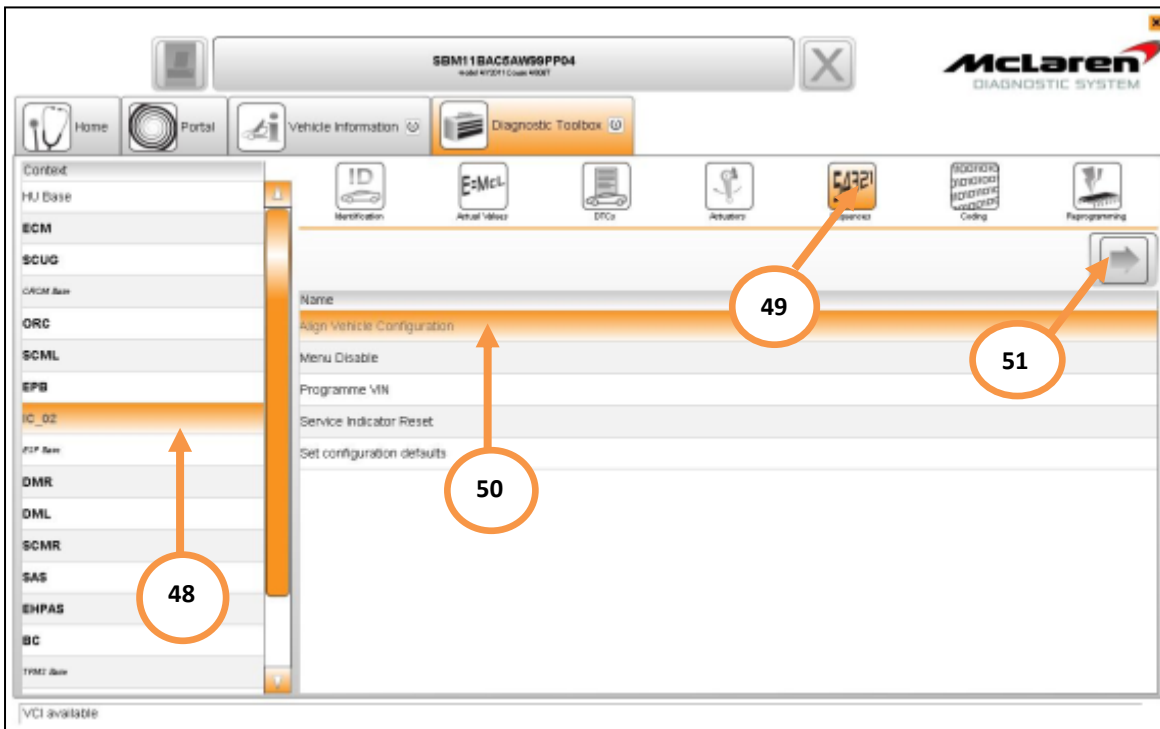
ELECTRONIC PARKING BRAKE CONTROL UNIT

39. Within MDS proceed to the Diagnostic Toolbox (52) select EPB (53) then reprogramming (54). Select software level 11M0935CP.03 (55) and proceed to the software download by selecting the tick button (56) followed by the arrow button (57).
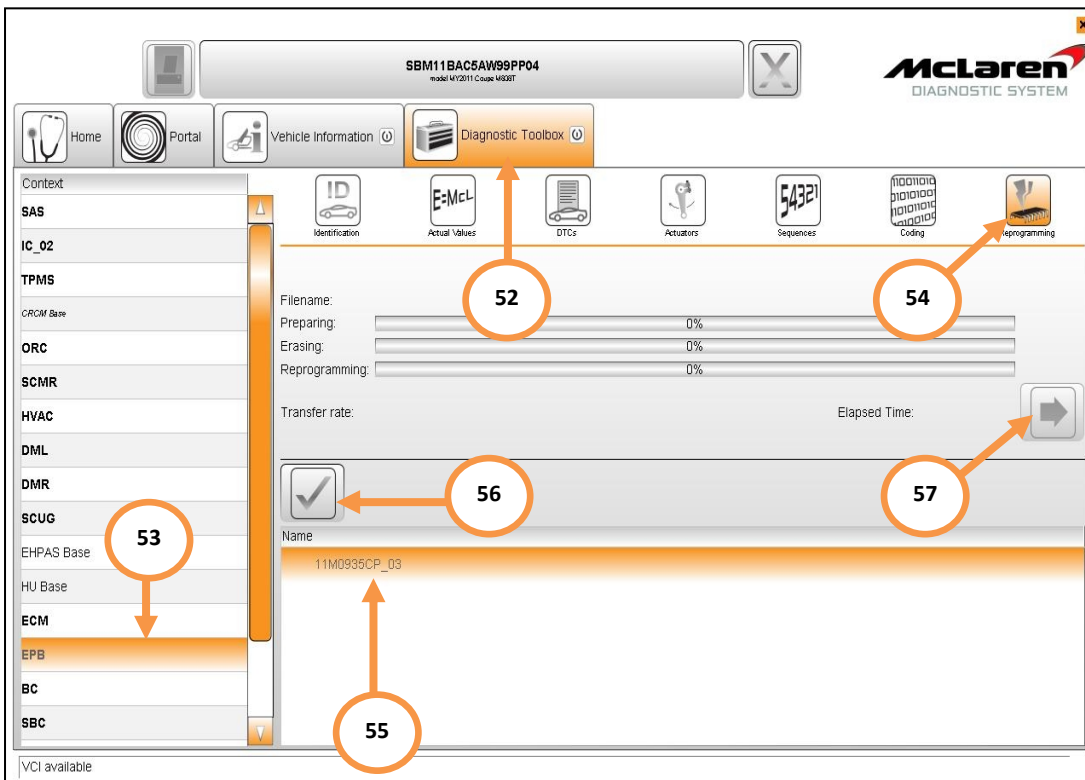
40. Once the download is successful select the chassis button (58) to re-enter the scan now page. It is necessary to re-scan the vehicle.
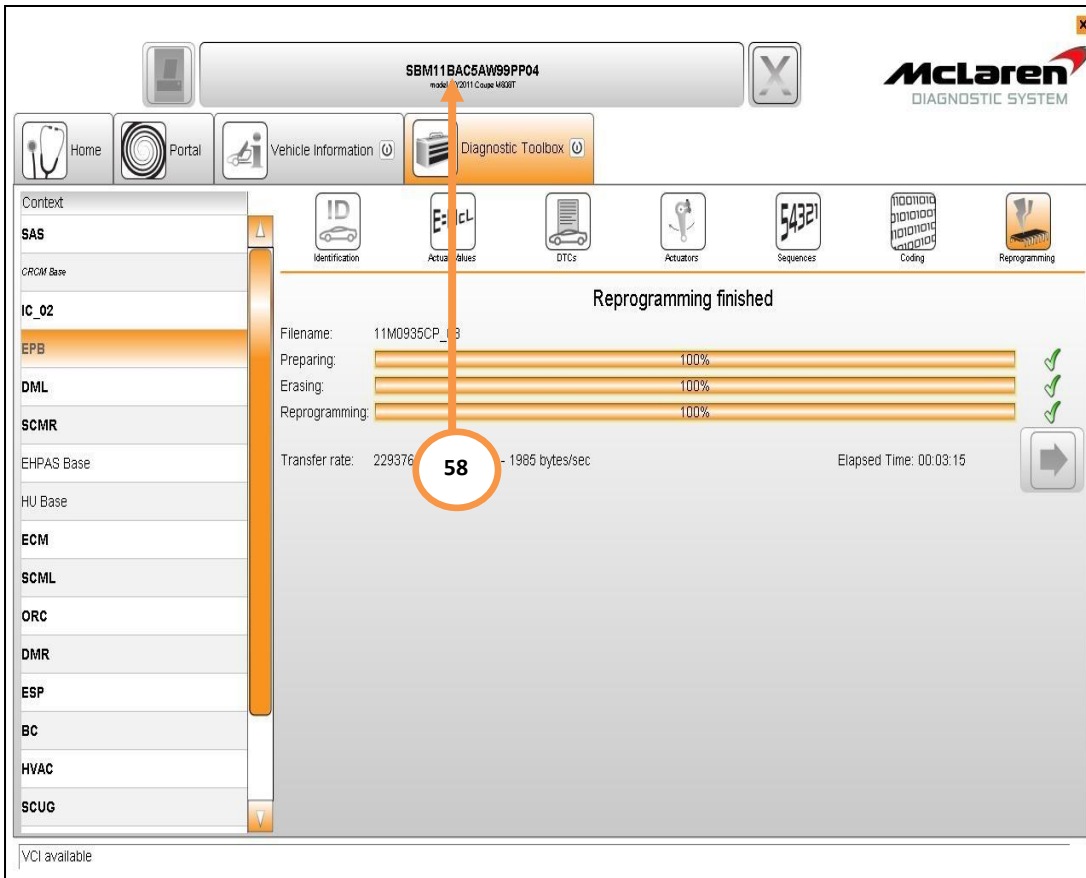
41. Within the McLaren Diagnostic System (MDS) proceed to the Diagnostic Toolbox (59). Select EPB (60) then Sequences (61) select G-Sensor Calibration (62) followed by the arrow button (63) to perform the G-Sensor Calibration routine.
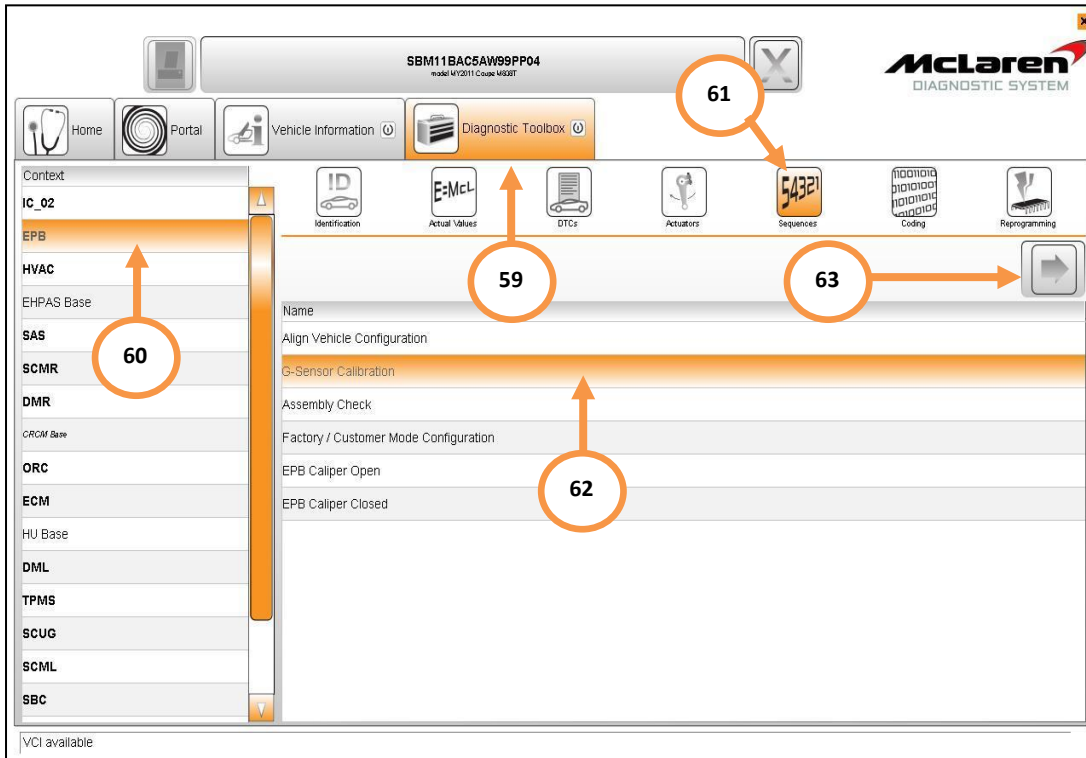

BRAKE LIGHT SWITCH ADJUSTMENT

Care point: Vehicle should be kept in ignition state 5 in so that the vacuum pump operates to provide brake servo assistance.

42. Within the McLaren Diagnostic System (MDS) proceed to the Diagnostic Toolbox (64). Select ESP (65) then Actual values (66). Select Analog Data (67) then Master Cylinder Pressure (68) then press the play button to examine the data (69).
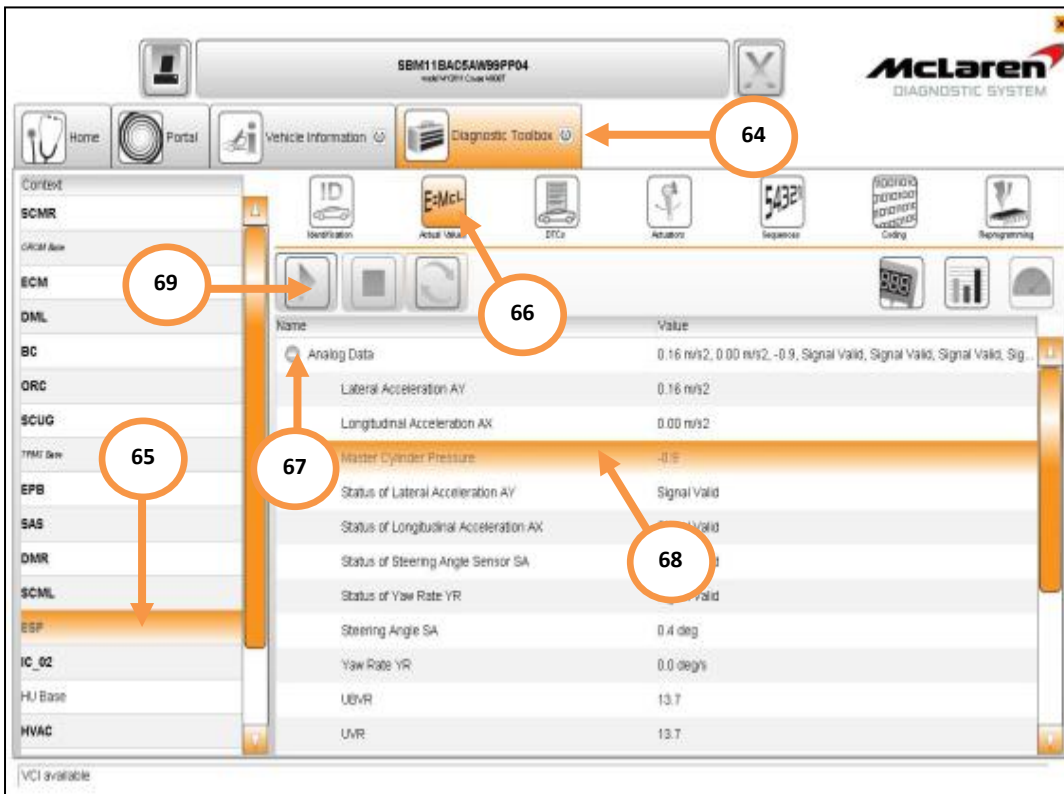
43. Gently apply the brake pedal, by hand, until the brake lights come on. Ensure that the Master Cylinder reading is between 2-6 Bar within MDS (70). If the figure is already within this tolerance go to point 46. If the figure is outside of this range continue on with point 44 and follow the bulletin instructions.
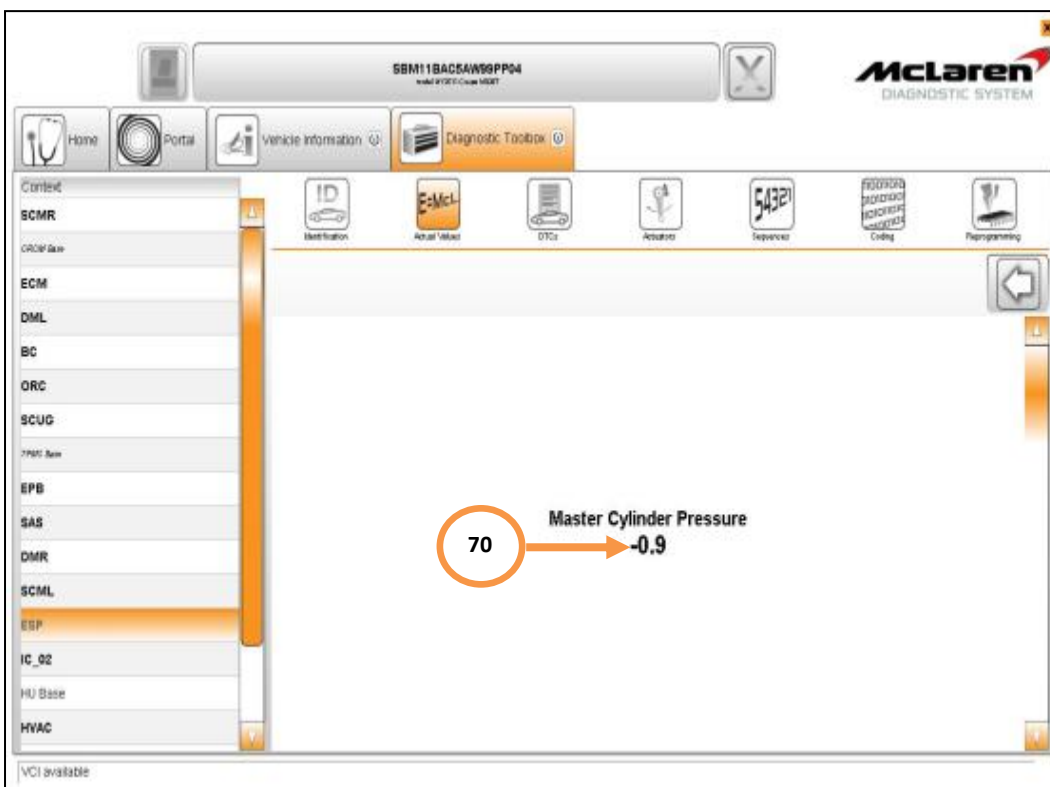
REMOVAL :

44. Remove clips (71) and screws (72). Disconnect electrical connector on lamp footwell and remove driver facia closure panel (73).
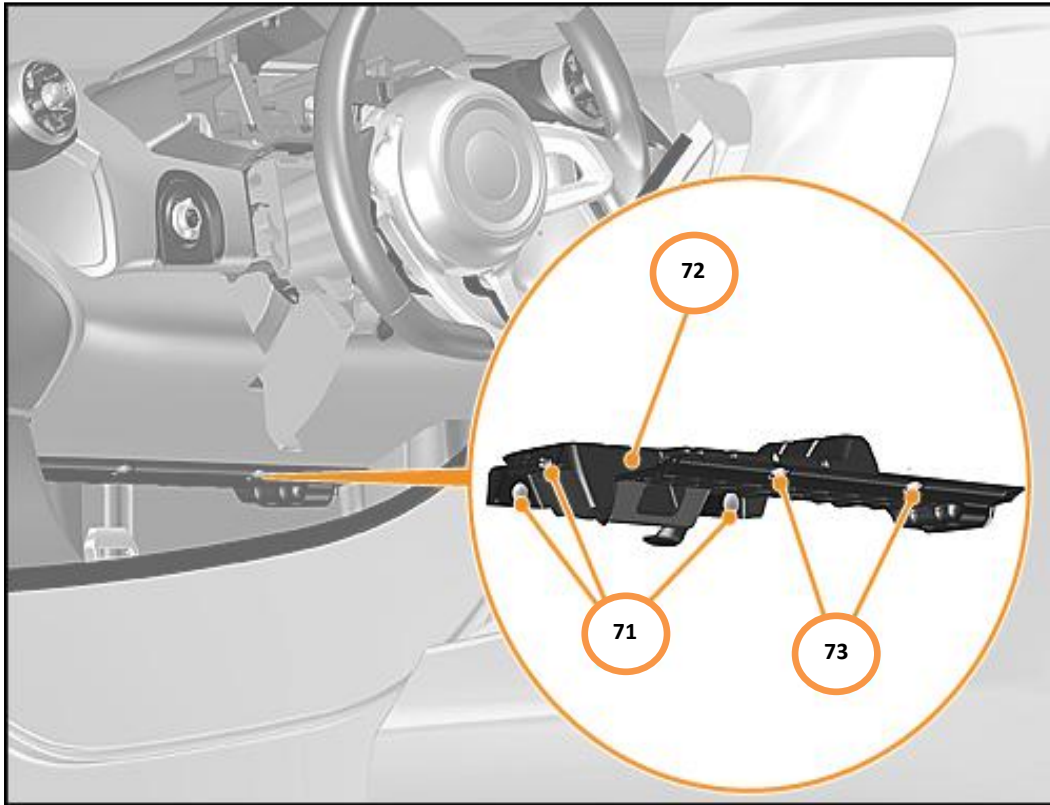
Care point: The following image have been taken with the dashboard out to accurately show the work involved. The top of the brake pedal would not normally be visible.

45. With the brake pedal still pushed down to the point where the brake lights have just come on adjust the brake pedal switch (74) so the Master Cylinder reading is between 2-6 Bar. If you are unable to set the pressure within this tolerance contact your Regional Aftersales Manager for further instructions.
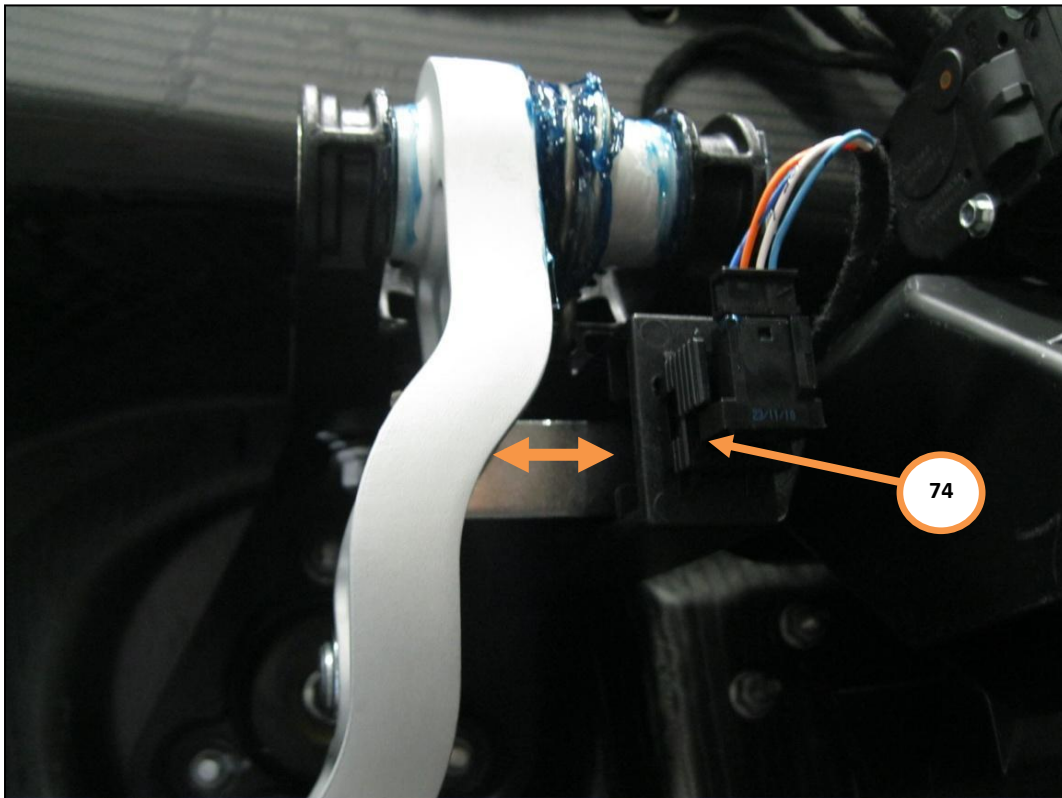
46. Gently push the brake pedal down three times and record the pressures required to illuminate the brake lights and record the pressure reading when the brake lights deactivate by slowly releasing the brake pedal on the chart below:

Master Cylinder Pressure (BAR) to Activate the brake lights	Master Cylinder pressure (BAR) to deactivate the brake lights
1	1
2	2
3	3

SEAT INSTALLATION:

Care point: Do not calibrate seats or configure Occupant Classification System until point 163..

47. Install **all** components that have been removed previously in reverse order.

REPLACEMENT OF INTAKE SOUND GENERATOR (ISG) AND ISG THROTTLE BODY

REMOVAL :

48. Open engine compartment cover

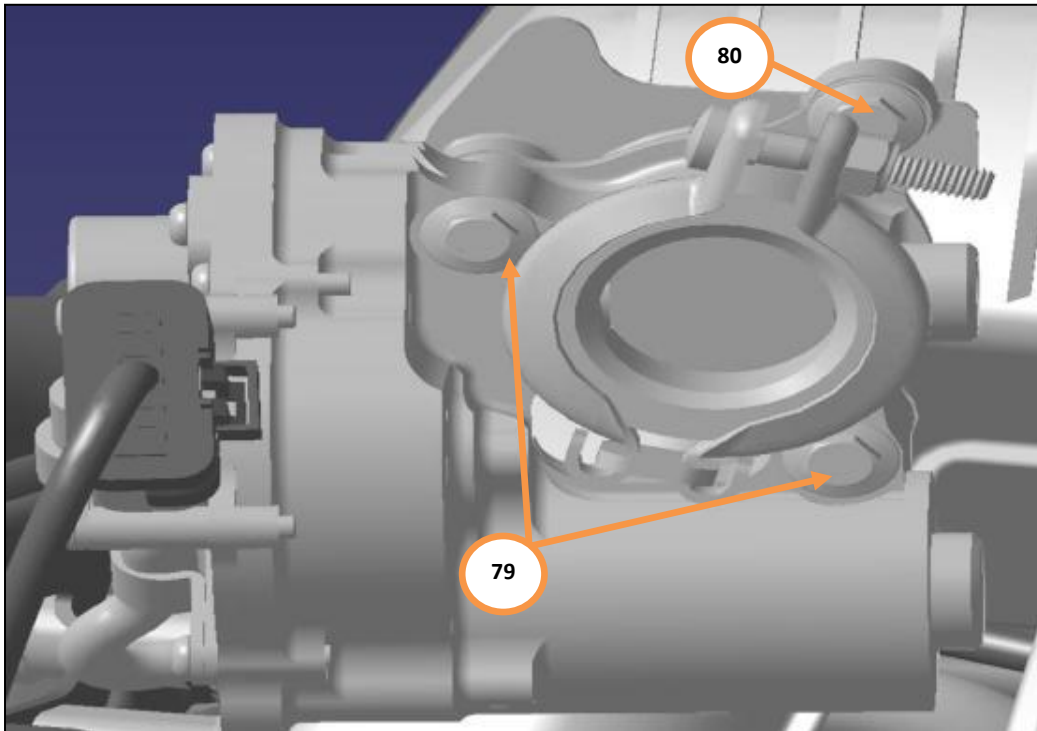49. Remove engine plenum cover (75) by pulling the component in an upwards motion.

50. Detach hose from area shown (76). Remove clamp and brown electrical connector plug (77) and the ISG unit (78).

51. Remove bolts on intake sound generator throttle (M6x60 10Nm) (79) and bolt (M6x16 10Nm) (80).
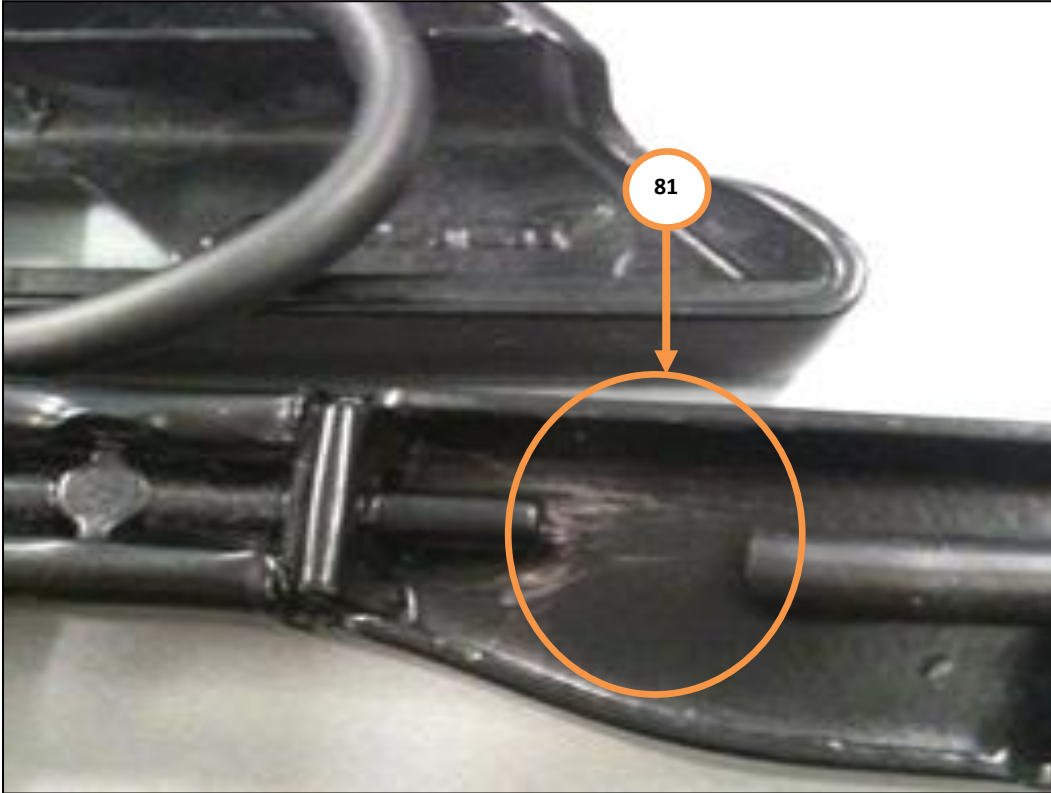

INSTALLATION :

52. Replace ISG and ISG throttle body by Installing all components in reverse order.

53. Check functionality.

WIPER HOSE PROTECTIVE SLEEVE REWORK

54. Raise wiper arm and remove the hose from the wiper arm end (81)

55. Dry off area of any leaked washer fluid. Wipe spigot area with Betaclean.

Care point: Loctite 480 should be kept in a container tightly closed and use only in well ventilated areas. Avoid eye contact, prolonged skin contact, and prolonged breathing of vapour. Immediately flush eyes with water for at least 10 minutes and seek medical advice if contact with eyes is made. If contact with skin is made wash affected area with soap and water. If irritation persists seek medical advice.

Care point: Ensure washer fluid hole is not covered by the adhesive and vehicle is protected.

56. Apply small amount of Loctite 480 adhesive to entire length of washer spigot (82).
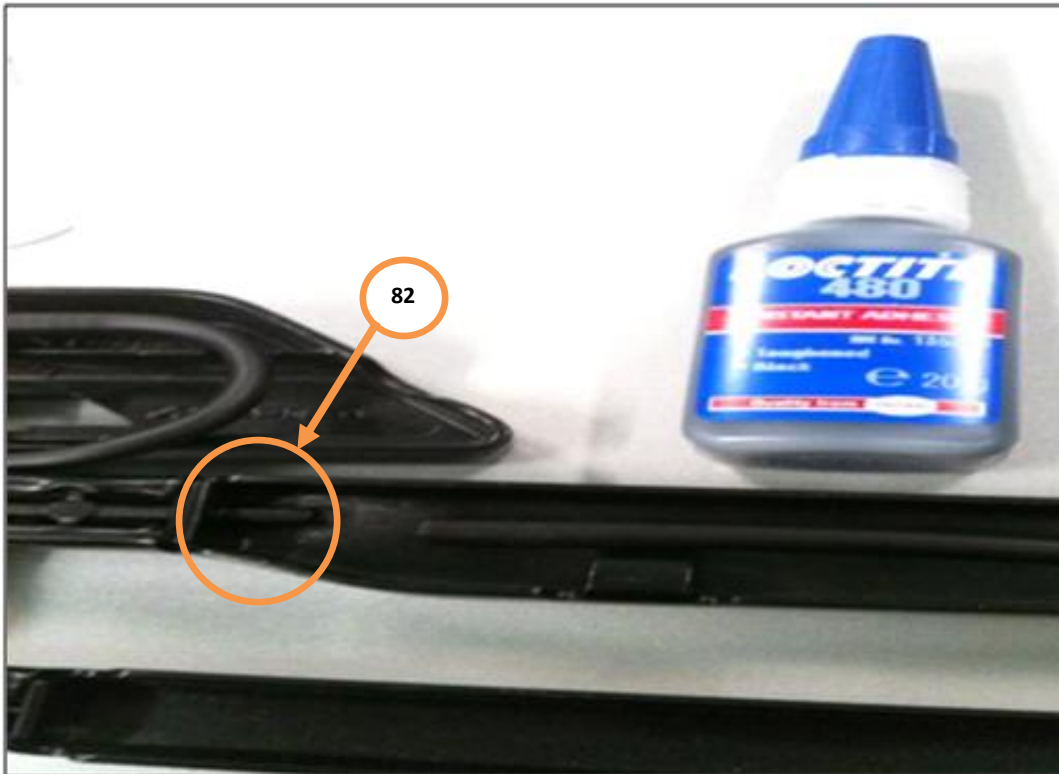
57. Immediately after Loctite 480 is applied reassemble the washer hose to wiper (83), ensuring that it is pushed in all the way home.

58. Allow to dry for thirty minutes before operating the wash/wiper system.

INSULATION OF FIXINGS AND ADDITION OF WARNING LABEL

Care point: Felt tape should be fitted to both leather door release straps.

59. Peel the protective tape off the felt tape (84).
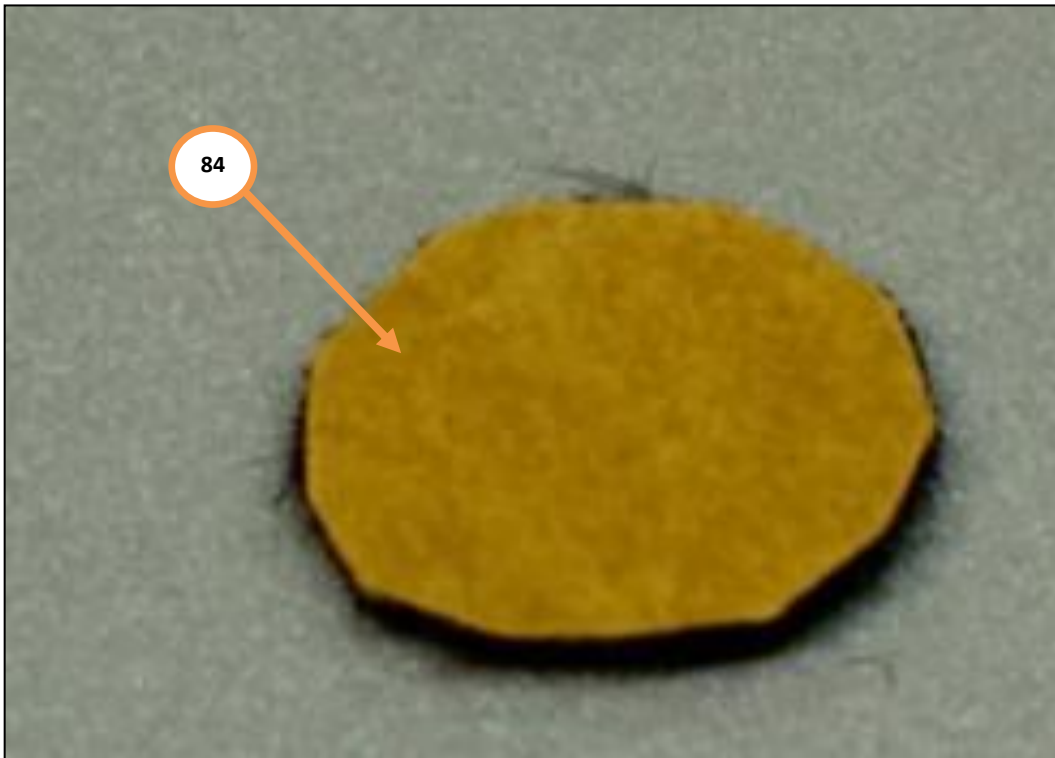
Care point: The felt tape can be installed with the leather door release strap still attached to the vehicle. The strap has been removed in the next two images to accurately demonstrate the procedure.

60. Push the tape into the aperture (85)

61. Apply tension to make sure the felt tape sticks to the B-surface of the popper. An M5 flanged riv-nut can be used (86).

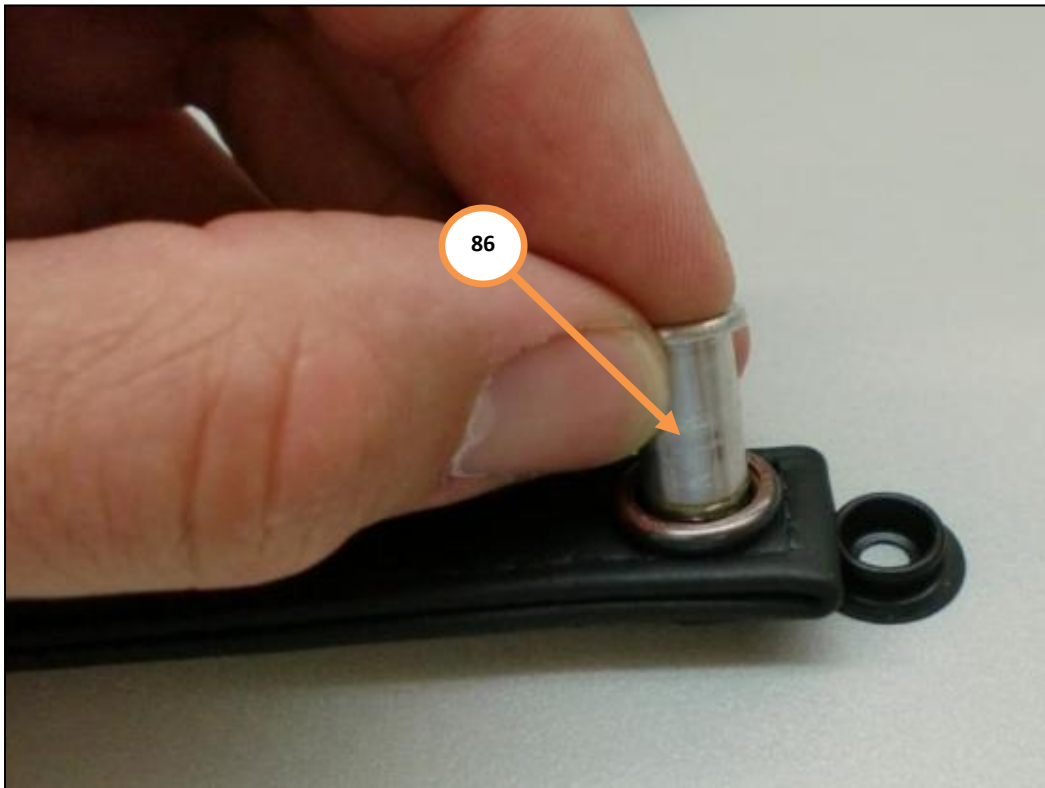62. The two warning labels warn the occupant to engage both fasteners. An example of this label is shown below:

Care point: Ensure the labels are clear from the popper fixings and is attached only to the leather.

Care point: Image is of the right hand side B-Pillar. The same process should be followed on to attach the warning label on the left hand side B-Pillar.

Care Point: The caution text on the label should always be facing the outboard side of the B-Pillar.

63. Peel off protective backing and attach the warning labels symmetrically to the popper fixings as shown (87).
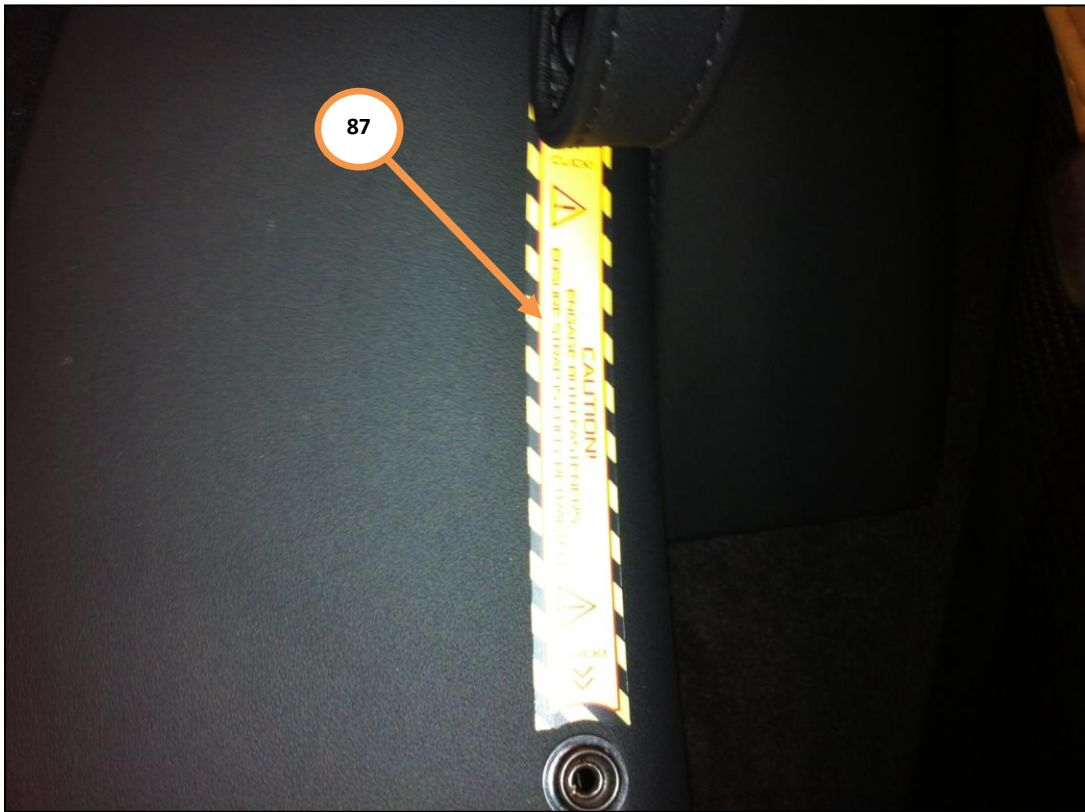
64. If the warning label has been fitted correctly it will not be visible when the leather door release strap is secured in place (88).

Care point: It is necessary to fit felt tape to both seatbelt retaining straps.

65. Unclip seat strap and attach felt tape to the inside of the popper fixing (89).
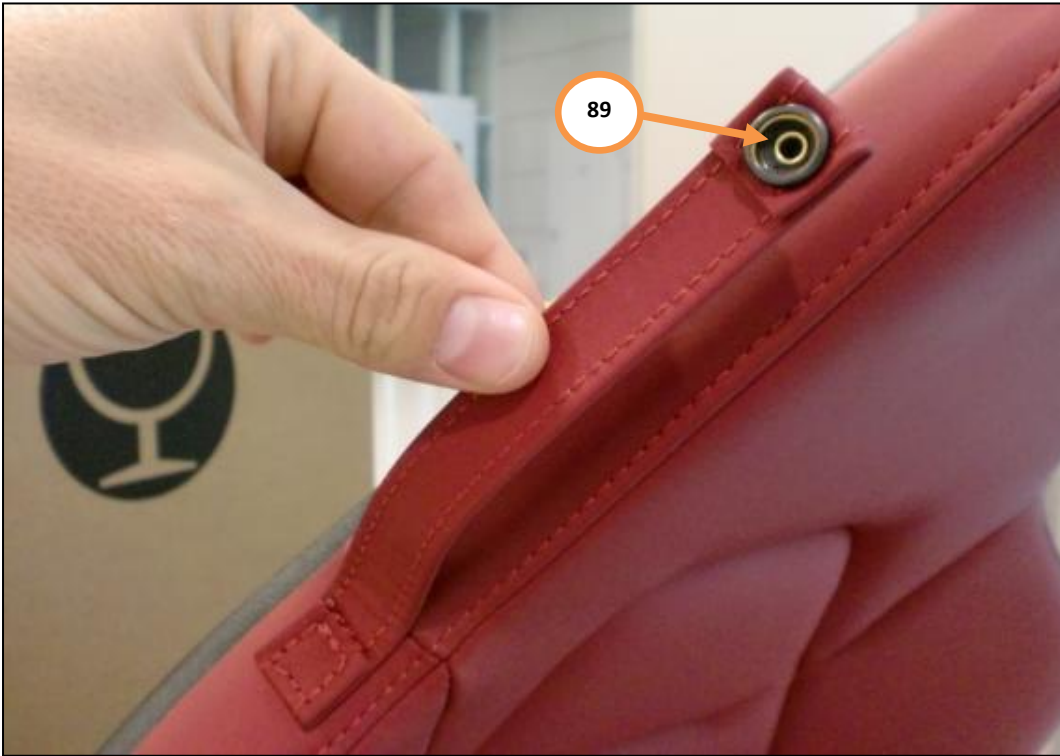
66. An example of the fitted felt tape (90) is shown in the next image. Clip the seat strap in place once complete.

SIDE TICK PANEL SOUND INSULATION

67. It is possible for the front upper section of the tick panel to rattle against the rear bodyside panel of the vehicle in the area shown (91).
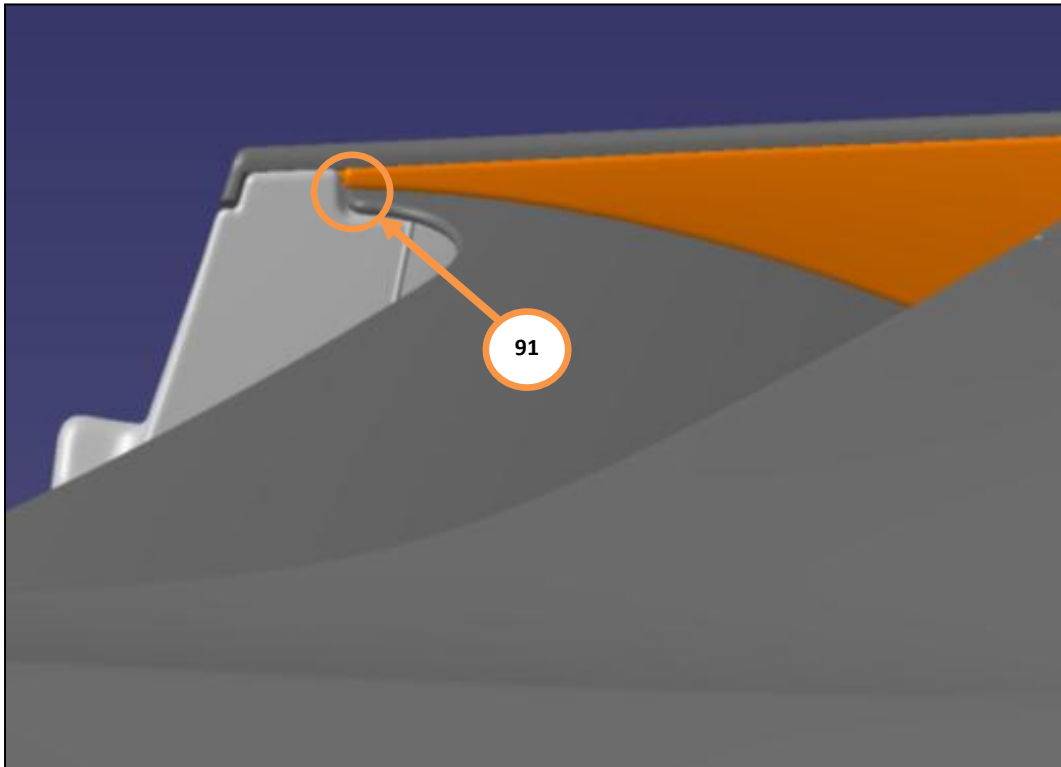
REMOVAL:

Care point: Tape up local bodywork area to ensure the paintwork is not damaged when removing the upper tick closing panel.

68. Remove upper tick closing panel (92)
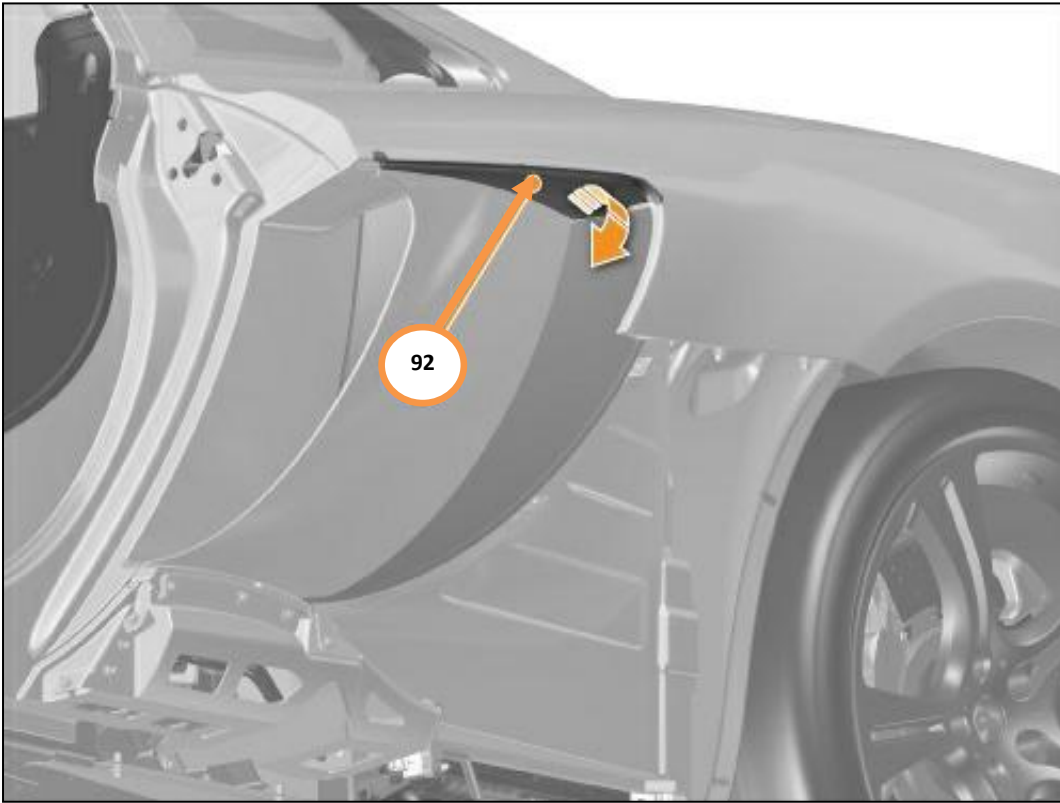
69. Insert two foam pads (93). The arrows point to the orange highlighted areas that represent the adhesive on the side of the pads.
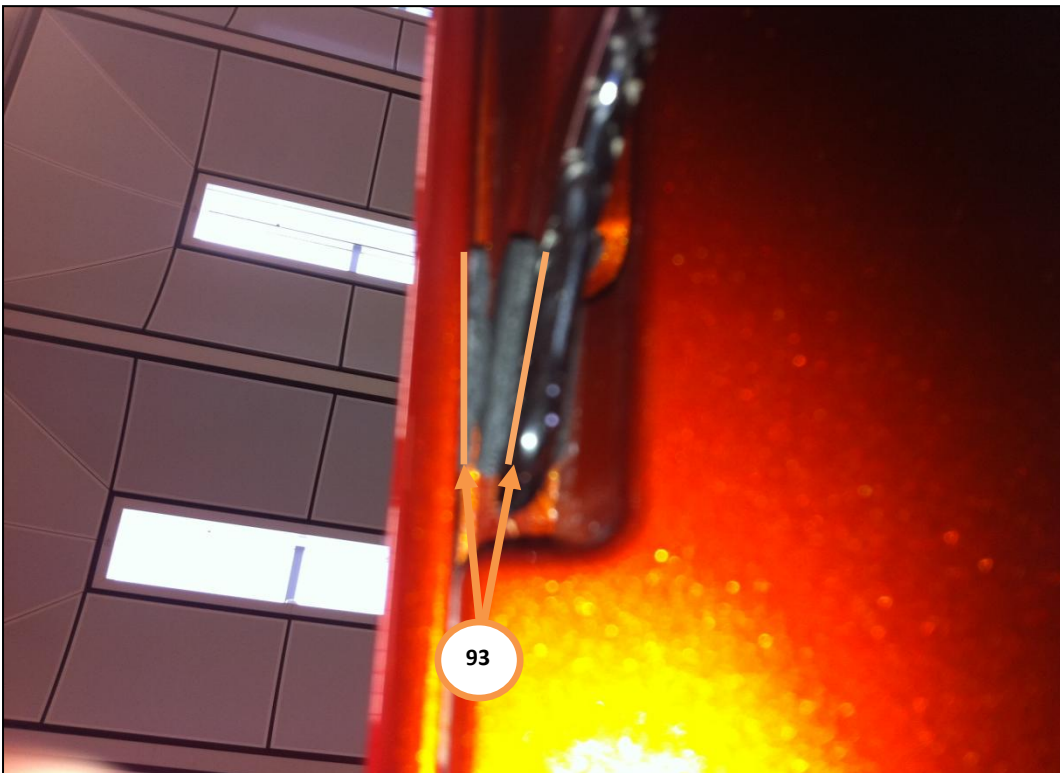
70. Image shown looking up at the side tick and bodyside rear panels from underneath to confirm the area the additional foam pads should be placed (94).
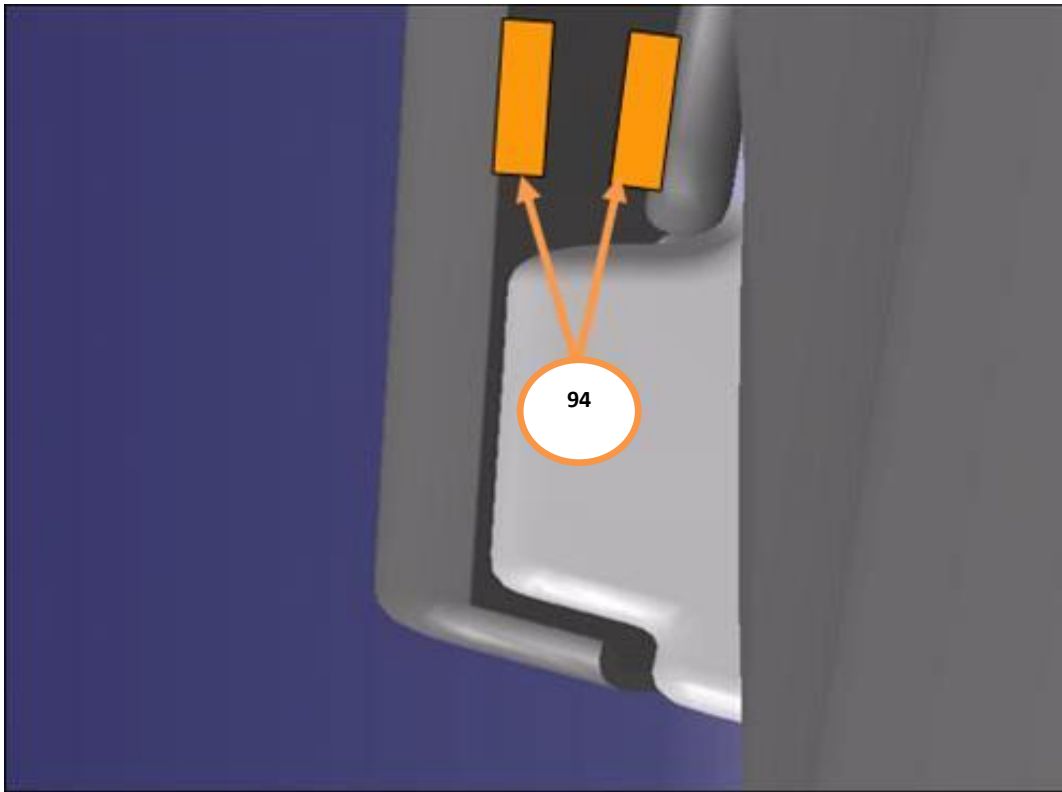
Care point: The following image is a section view.

71. Align additional foam pad with top edge of forward tick panel (95) and bottom edge of the bodyside panel (96).
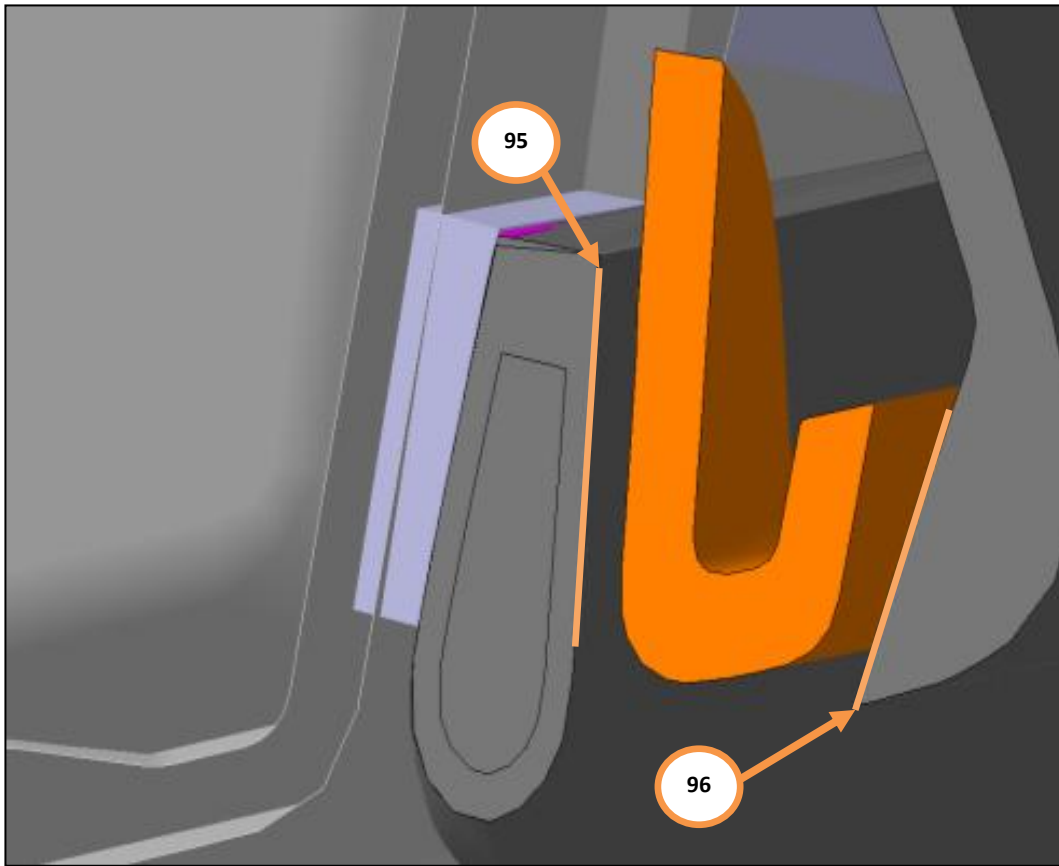
Care point: The following image is of the underneath of the vehicle looking up.

72. Position additional foam pads 5 mm from leading edge of the forward tick panel.

INSTALLATION :

73. Install upper tick closing panel in reverse order.

REPLACEMENT OF ALARM SIREN

REMOVALL :

74. Please refer to A-RM-02A02-03-002 - Remove/install wheel arch liner – front.

75. Please refer to A-RM-02A02-04-002 - Remove/install side marker lamp – front.

76. Please refer to A-RM-02A04-04-004 - Remove/install floor panel – front.

77. Please refer to A-RM-02A02-01-001 – Remove/install bumper –front

78. Please refer to A-RM-05M03-01-015 – Remove/install electronic control unit- Alarm and Siren (ACU)

79. Replace Alarm and siren (ACU). However, in order to avoid duplication of work, do not install components listed in points 74-77 until point 115.

REAR STOP/TAIL LIGHTS AND DIRECTIONAL INDICATOR REPLACEMENT

REMOVAL:

Care point: It is advisable to leave the removed components listed from points 80-85 off until point 115 to avoid duplication of work.

80. Please refer to A-RM-02A04-04-009 – Lift vehicle on lifting platform.

81. Please refer to A-RM-03B03-01-001 – Remove/install rear wheels.

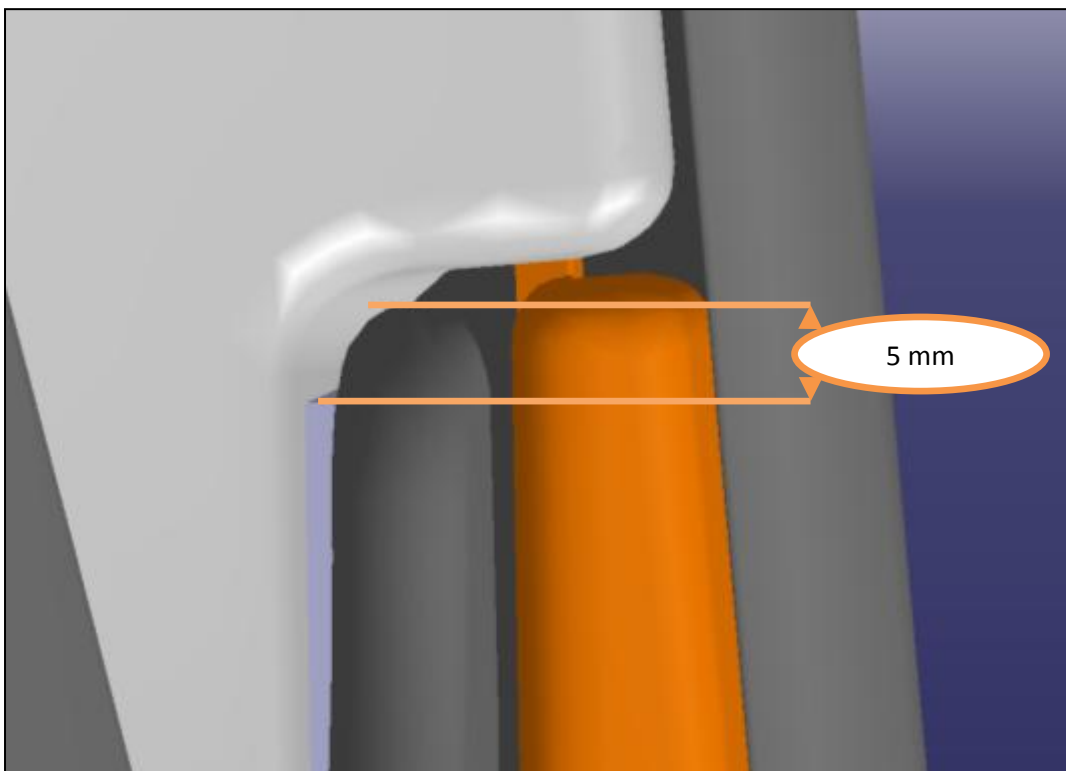82. Please refer to A-RM-02A02-03-001 – Remove/install wheel arch liner(s) – rear.

83. Please refer to A-RM-02A04-04-006 – Remove/install floor panel – rear diffuser.

84. Please refer to A-RM-02A02-01-002 – Remove/install bumper – rear

85. Please refer to A-RM-02A02-02-001 – Remove/install rear grille – upper centre.

Care point: When removing and installing rear light assemblies, ensure the electrical connector is secured using limited force as the pins are easily damaged.

86. Please refer to A-RM-02A02-06-006 – Remove/install rear lamp.

REPLACE SUSPENSION BOLTS

REMOVAL :

87. Please refer to A-RM-03B03-01-001 – Remove/install front wheels

Care point: At this stage check the markings on all wheel hub nuts. If the wheel hub nuts are not torque to the marking point replace wheel hub nut and claim under the additional cost section.

Care point: Remove and install **one suspension bolt at a time**. Additional force is dissipated among the other bolts in the area whilst one bolt is removed. Caution should be used to prevent a bolt snapping. Protective eye protection should be worn whilst performing this procedure.

Care point: The approved torque wrench recommended by McLaren Automotive must be used to torque the suspension bolts. The Torque wrench equipment is sourced from Snap-On and consists of the following items that can be sourced from Unipart if necessary.

11S4149CP   TOOL-TORQUE WRENCH BODY-QCP75
11S4150CP   TOOL-RATCHET HEAD- 1/4QJD8A-72
11S4151CP   TOOL-EXTENSION-6 INCH-TMXK60
11S4152CP   TOOL-SOCKET-10MM-SHALLOW-TMM10
11S4153CP   TOOL-HEAD-BOXEND-10MM-QJXM10A

88. It is necessary to replace 24 suspension bolts M8x25 - 12.9 (00RA189) and 8 suspension bolts M8x30 - 12.9 (00RA191) with 24 suspension bolts M8x25 – 25 10.9 (00RA028) and 8 suspension bolts M8x30 – 10.9 (00RA449). The replacement bolts will be supplied free of charge.

89. The following image is of an upper front wishbone (97).These bolts require replacement (to 00RA449) on both sides (98). Remove old paint markings and add new markings once the new bolts are torqued to **30Nm** and in position.
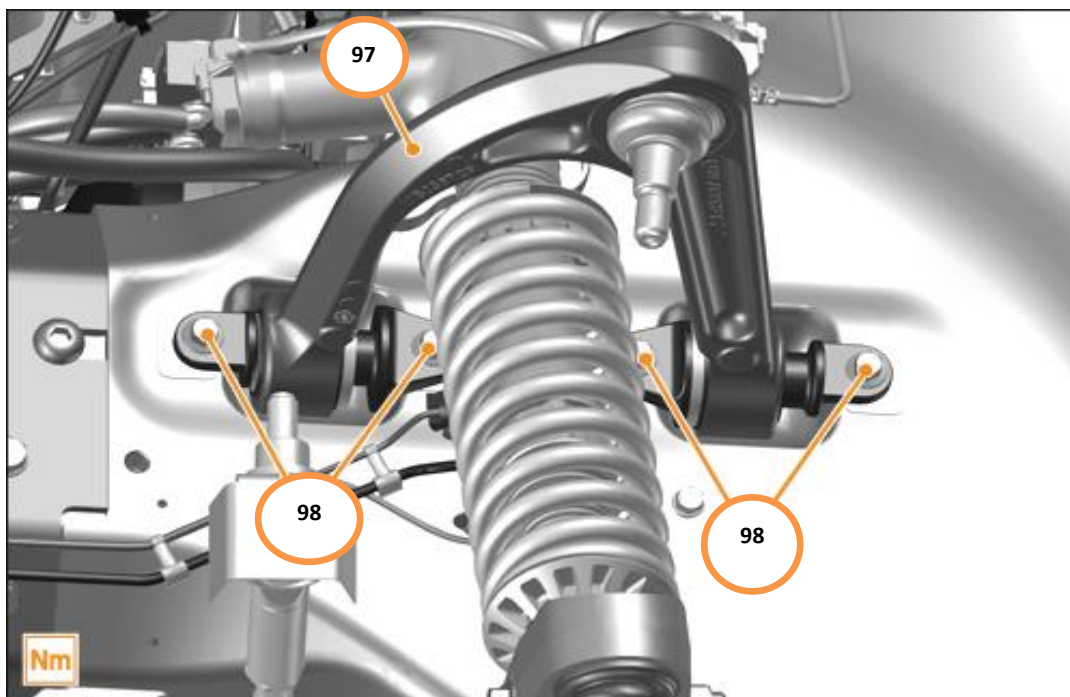
90. The following image is of a lower front wishbone (99). These bolts require replacement (to 00RA028) on both sides (100). Remove old paint markings and add new markings once the new bolts are torqued to 3**0Nm** and in position. The bolts marked (**X**) should not be replaced.
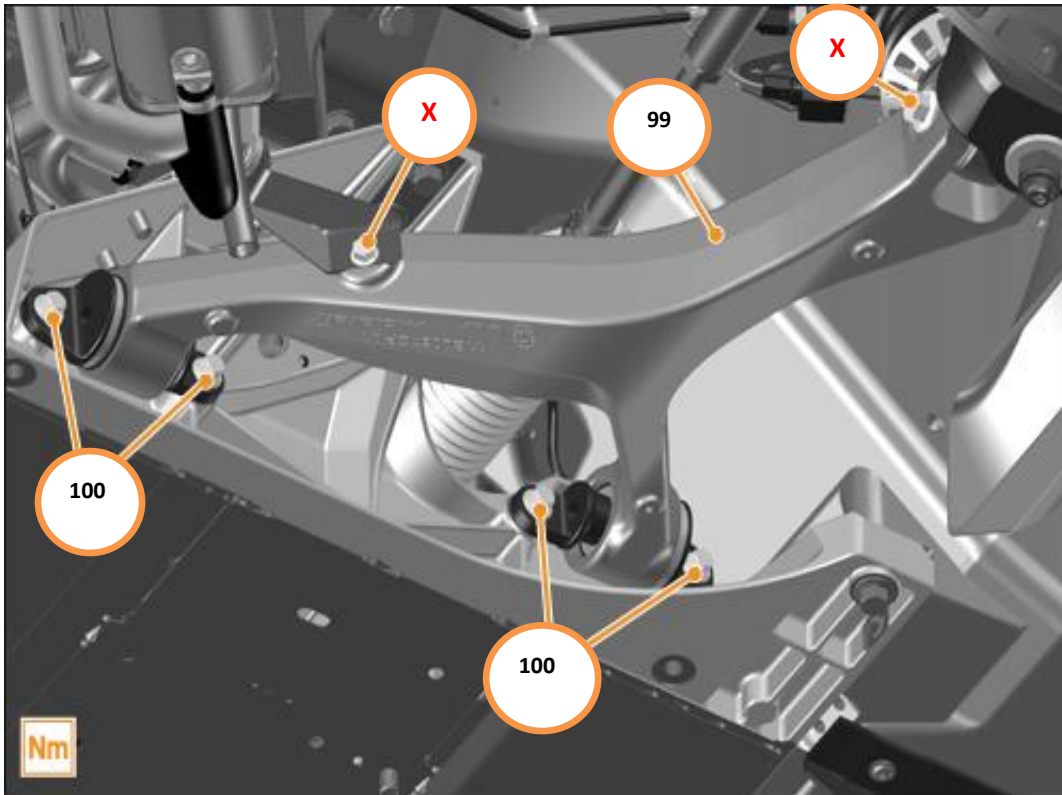
91. Please refer to A-RM-03C02-01-003 – Remove/install calliper – Electronic Park Brake.

92. Please refer to A-RM-03C01-03-001 – Remove/install brake calliper – rear.

93. Please refer to A-RM-02A02-03-008 – Remove/install duct- brake calliper cooling – rear

94. Please refer to A-RM-03C01-03-002 – Remove/install brake disc – rear

Care point: Convex washers on the left hand side only. Plain washers on the right hand side.

95. Remove bolts (101) on both sides of the Z-bar (M14 x60 100Nm).
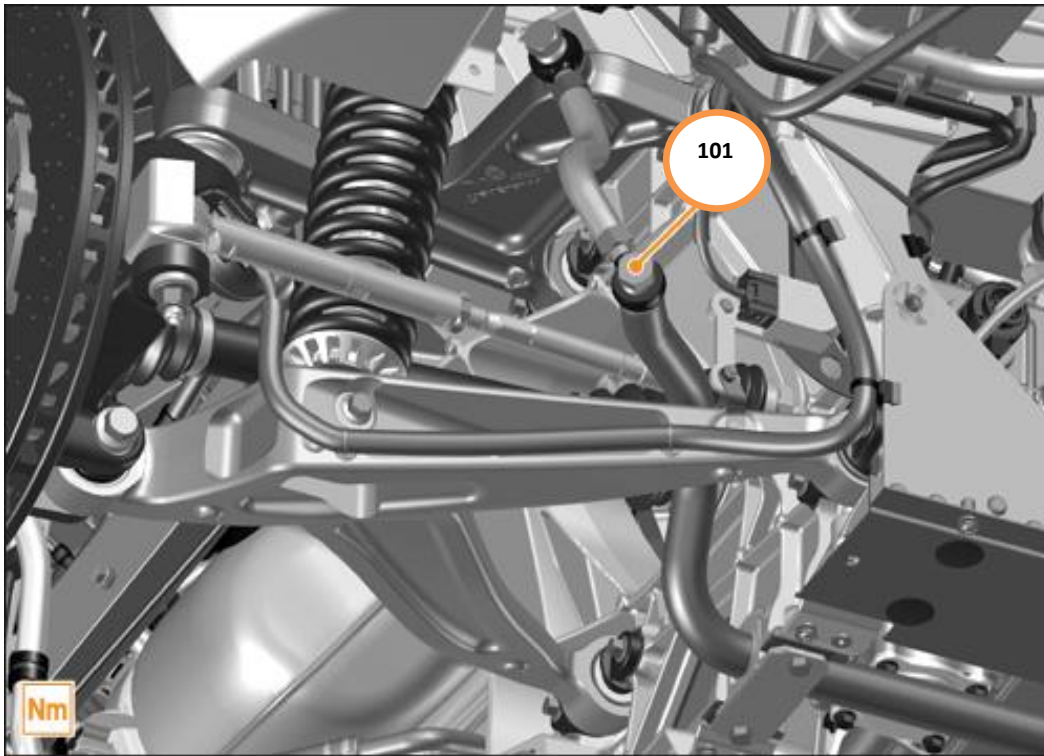
Care point: Observe eccentric stepped washer. The bolts marked (**X**) should not be removed.

96. Remove nut (102). (M14 100Nm).
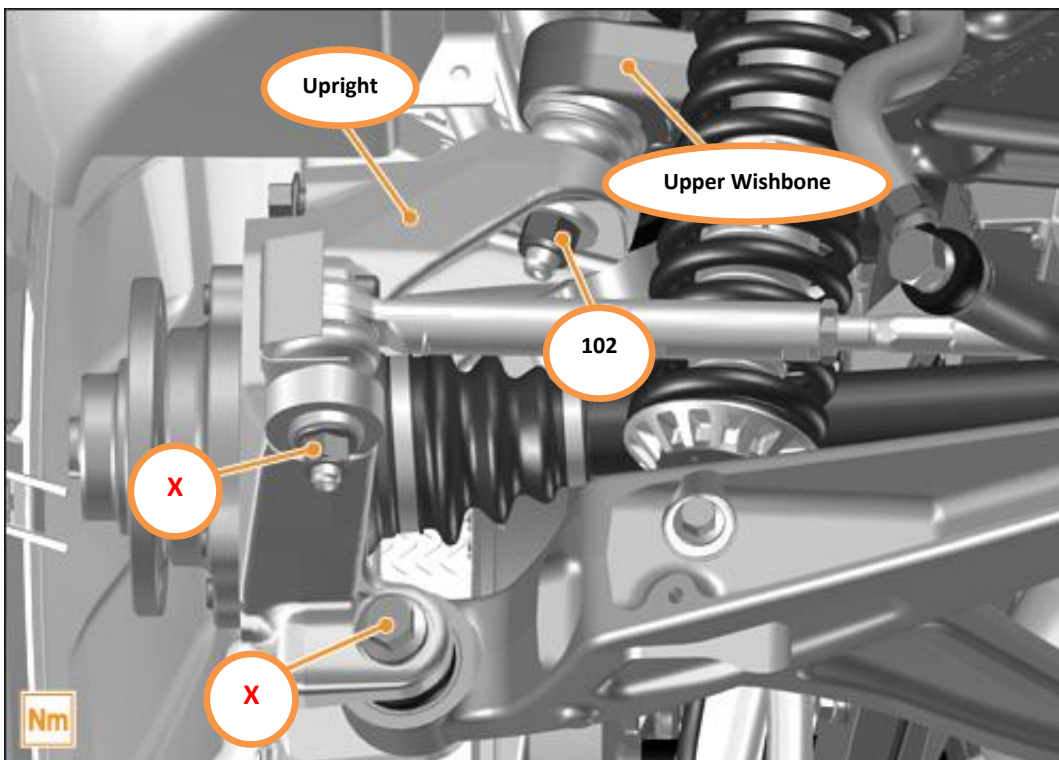
97. It will now be possible to access to the inner two fixings (103) by moving the wishbone upwards by hand.

98. The following image is of an upper rear wishbone (104). These bolts require replacement (to 00RA028) on both sides (105). Remove paint markings and add new markings once the new bolts are torque to **30NM** and in position.
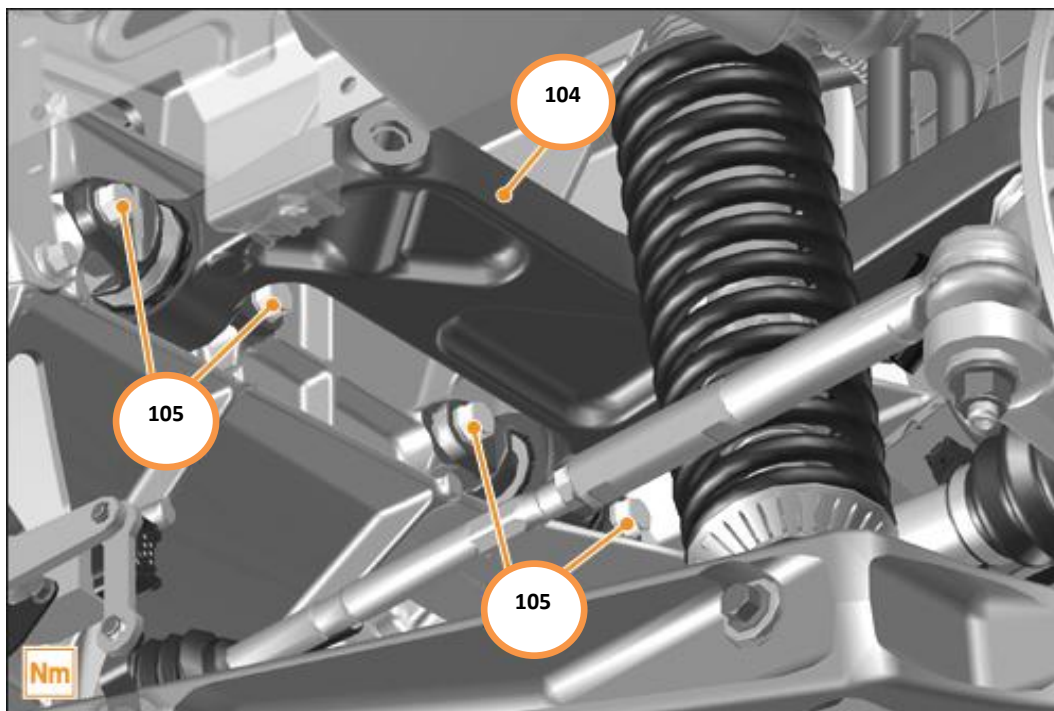
99. The following image is of a lower rear wishbone (106). These bolts require replacement (to 00RA028) on both sides (107). Remove paint markings and add new ones once the new bolts are torqued to **30Nm** and in position.
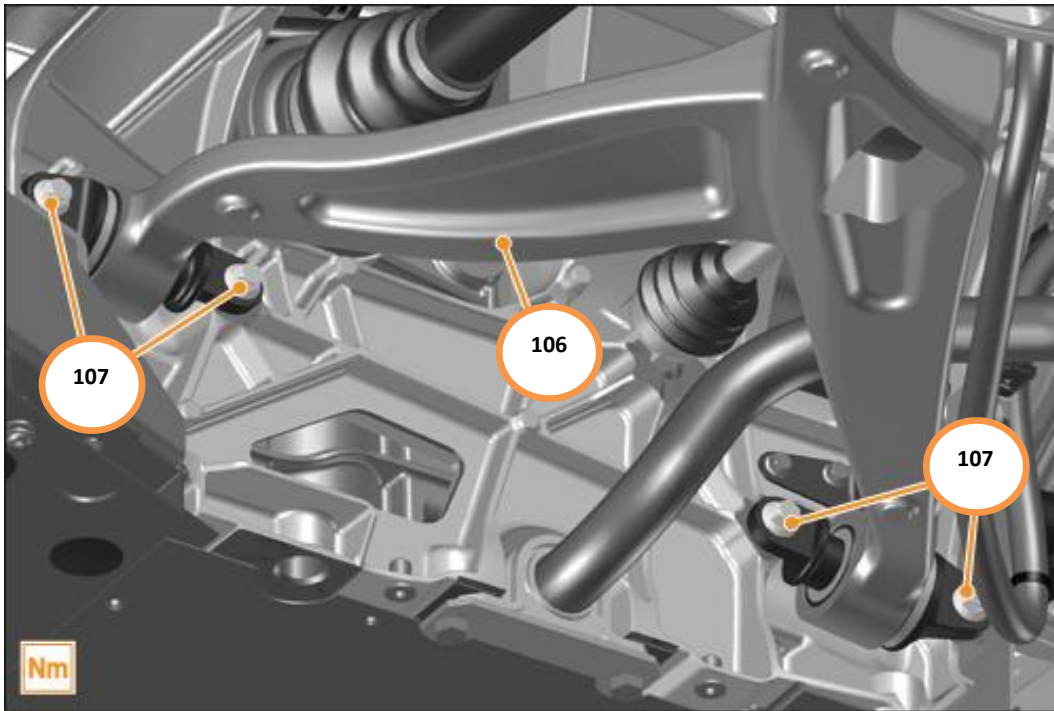
SECURING DISPLACEMENT SENSORS AND BRACKETS

Care point: Perform this process on both front wishbones.

100.   Slave fixing (M6x12) (108) through displacement bracket (109) into the front wishbone.
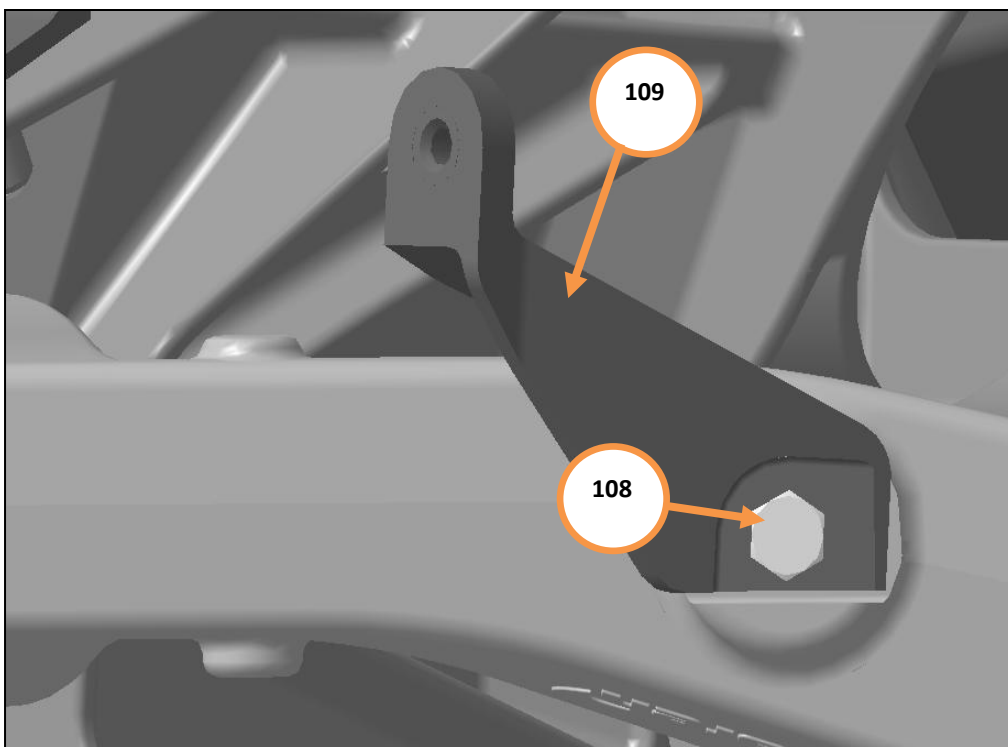
101.   Locate L-shaped spacer tool (110) between the bracket and the machined flange on the wishbone. Torque fixing (M6x12) to 8Nm.
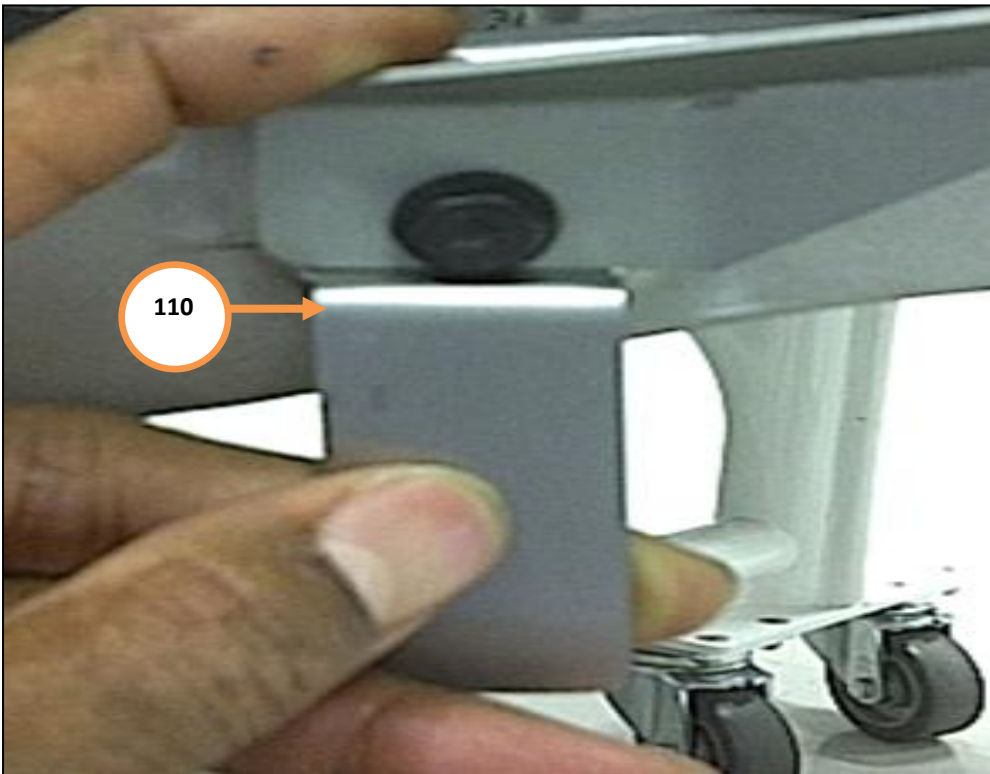
102.   Mark fixing bracket with paint pen (111).
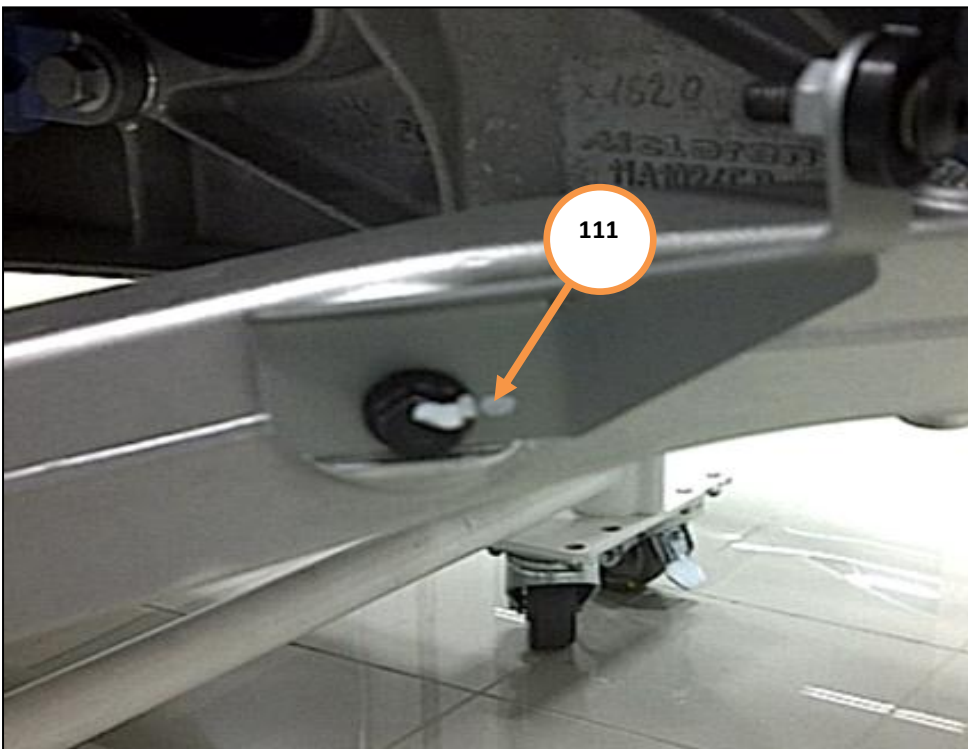
Care point: This process must be performed on both rear wishbones

103.   Locate fixing (M5x10) (112) through displacement sensor bracket (113) into lower wishbone.
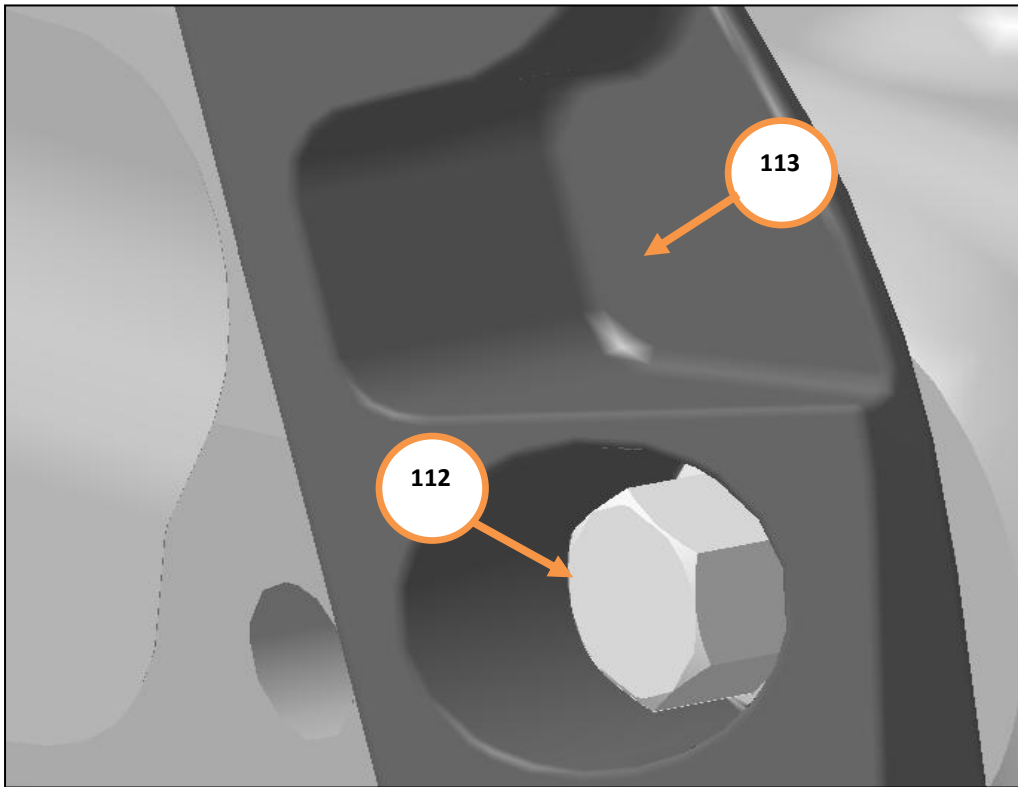
104.   Ensure the displacement sensor bracket tab is located over the boss on the rear wishbone. An example of an incorrect and correct position is displayed in the next image:

Incorrect   **Correct**
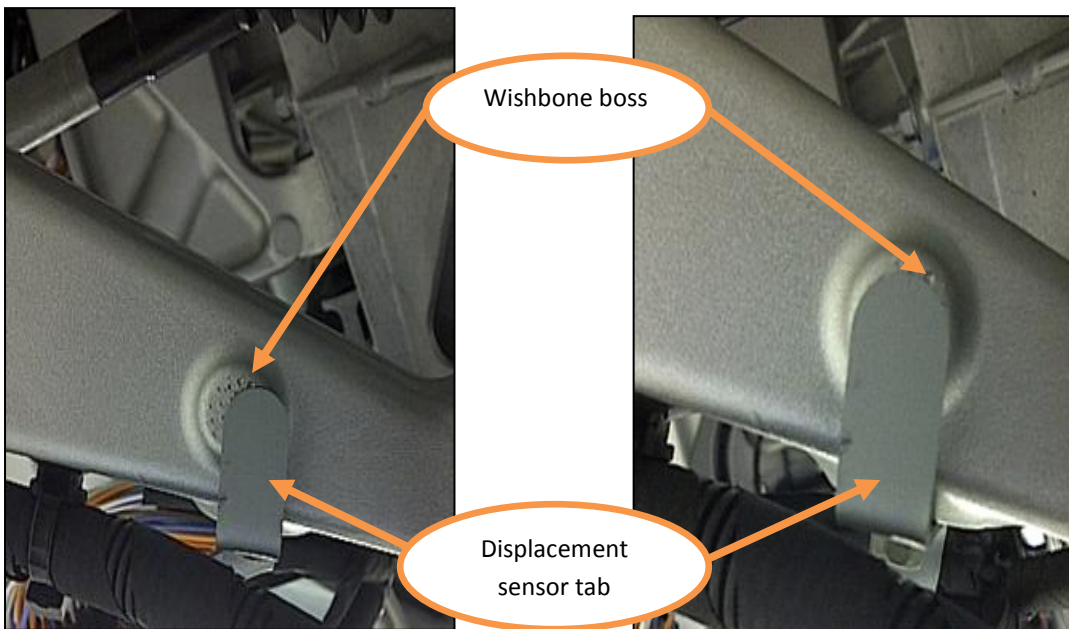
105.   Torque fixing (M5x10) to 5Nm making sure that the bracket is held into position (114) whilst tightening the fixing to the exact torque. Ensure the tab is still located centrally over the boss of the wishbone.
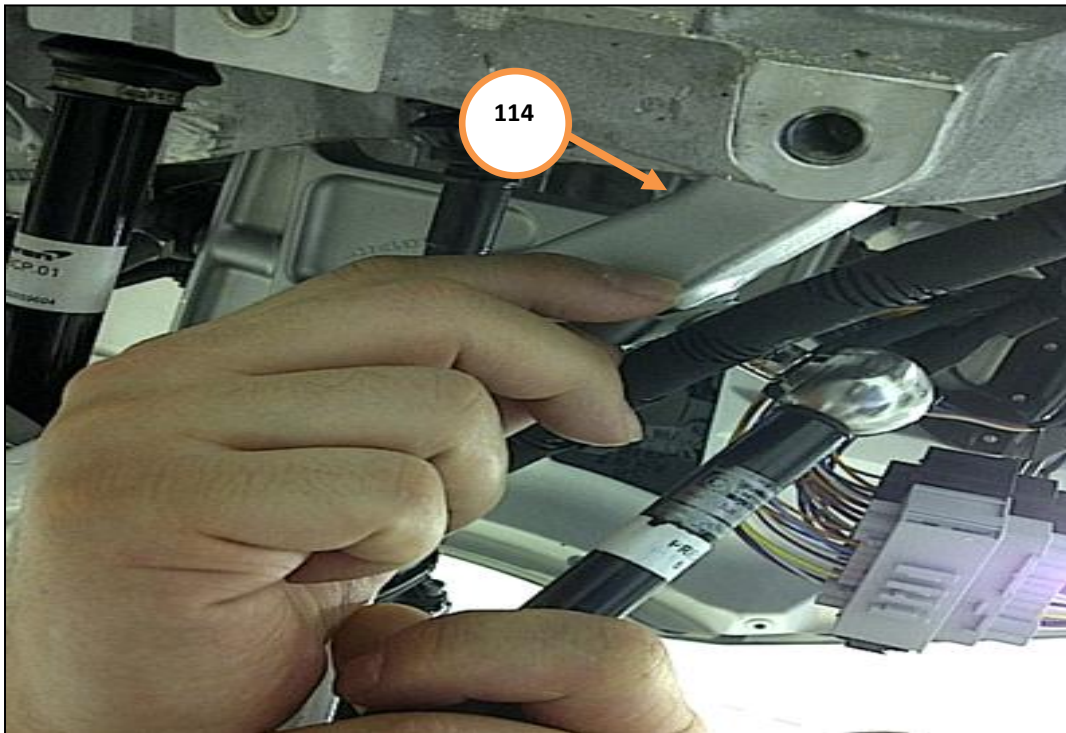
106.   Mark the tab and wishbone with a paint pen (115).

107.   Ensure the position sensor is positioned in its lowest position on the bracket, as indicated by the arrow, before tightening the fixings to 4 Nm (116).
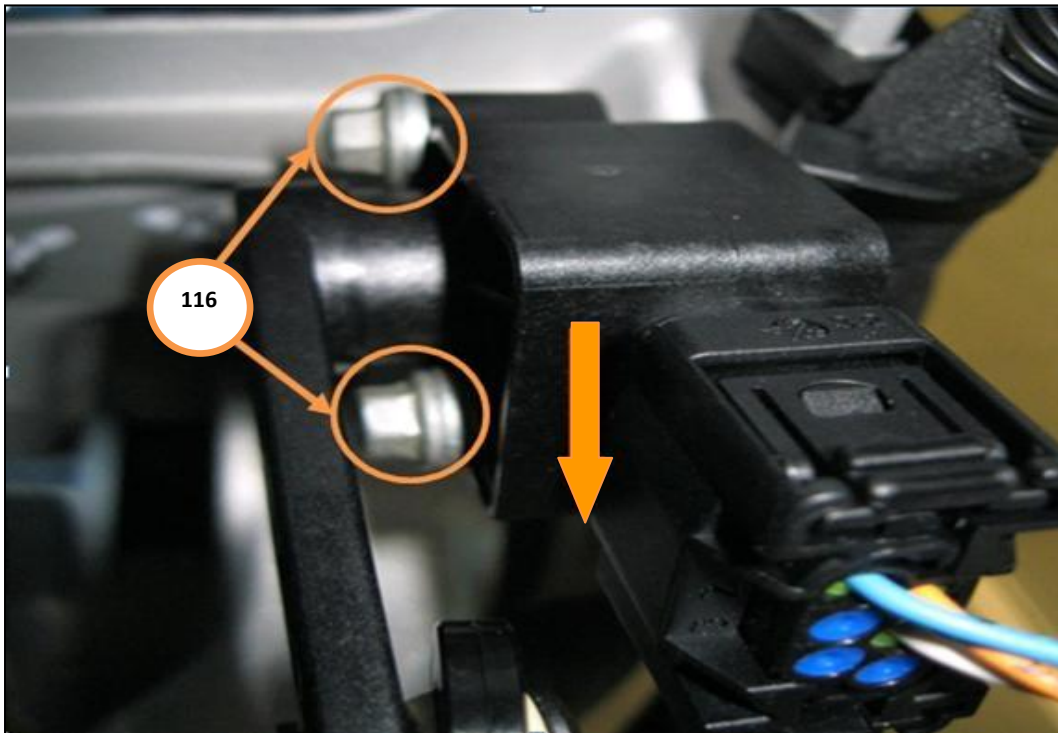
Care point: Please refer to A-RM-03B01-02-005 – Remove/install suspension displacement – front for instructions how to secure the front displacement sensors. The damper sensor calibration will be performed at point 114.

Care point:.Loctite 243 should be kept in a container tightly closed and use only in well ventilated areas. Avoid eye contact, prolonged skin contact, and prolonged breathing of vapour. Immediately flush eyes with water for at least 10 minutes and seek medical advice if contact with eyes is made. If contact with skin is made wash affected area with soap and water. If irritation persists seek medical advice.

Care point: Apply Loctite 243 (blue) after it has been located through the link rods. Ensure there is no excess Loctite 243 on the spherical joint on the front sensor link rods.

108.   Insert both bolts through the drop links and apply Loctite 243 (Blue) within 5mm at the beginning of the thread of the bolts. (117).
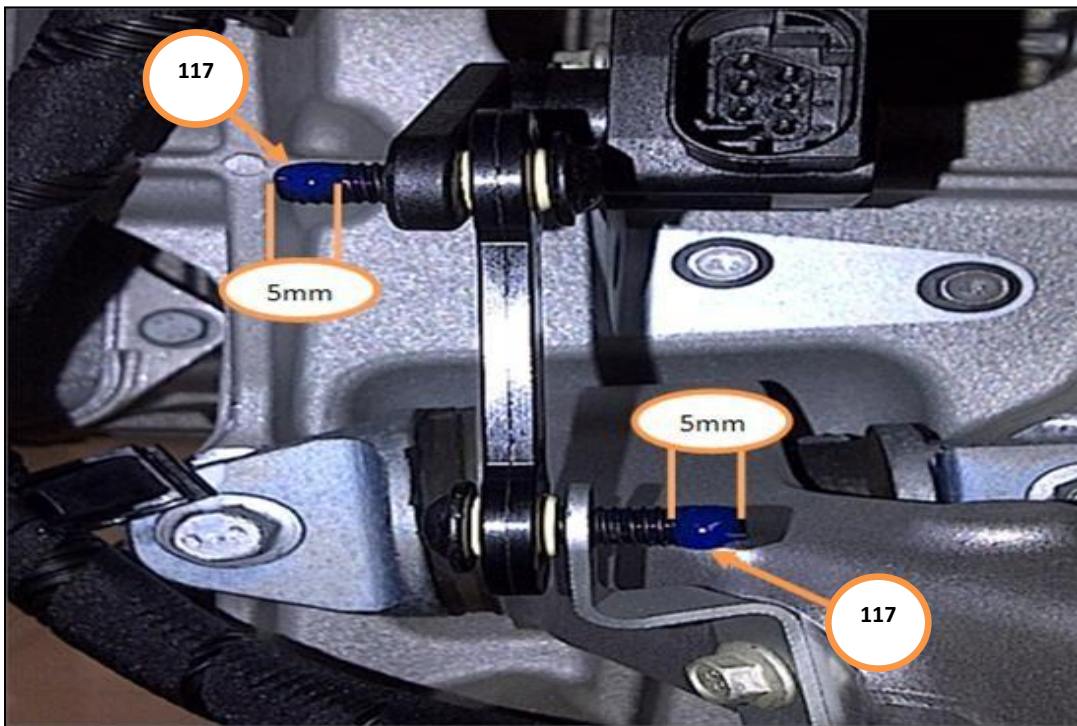
Care point: Ensure there is sufficient movement in the droplink and the gimbals have an element of movement.

109. Secure the left and right hand side lower drop links using bolt (00RA263) and nut (00RA011) using 2 Nm of torque.

CHECKING CAMBER TOP HAT FIXINGS

Care point: The following procedure needs to be performed on left and right front wishbones.

110. Check fixing on front camber top hat (118).
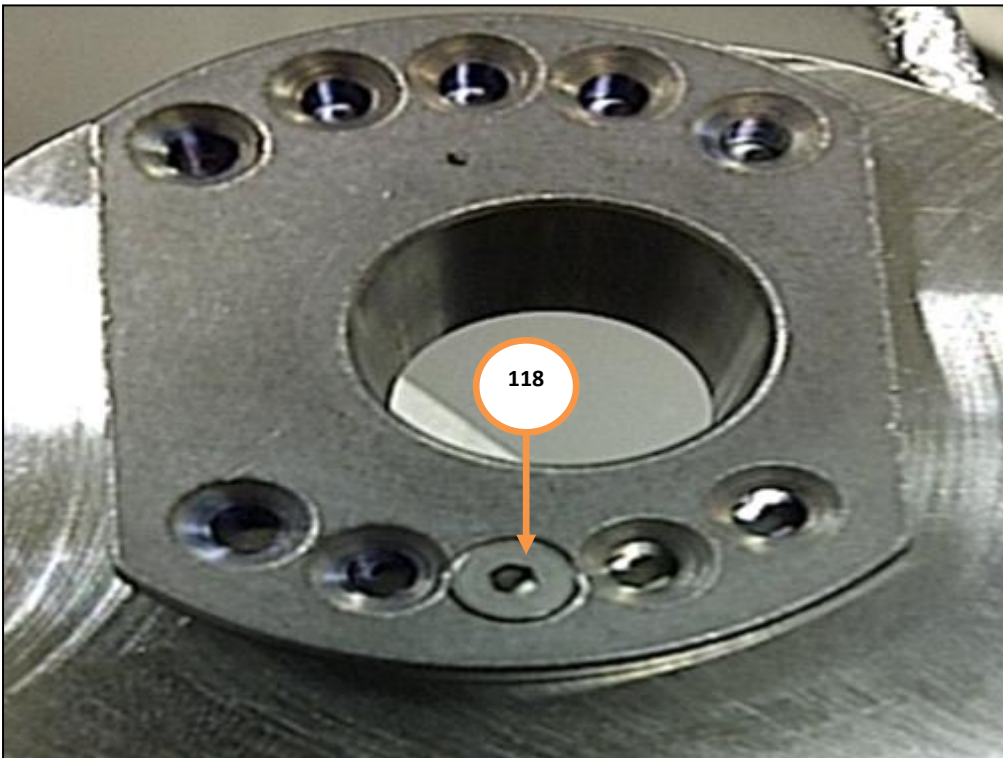
111.   If the fixing is secure proceed to point 112. If the fixing is loose replace the fixing with 00RA250 fixing and ensure it is tight using Loctite 222 (pink).

Care point: The following procedure need to be performed on left and right rear wishbones.

112.   Check fixing on rear camber to hat (119).

113.   If the fixing is secure proceed to point 114. If the fixing is loose replace fixing with 00RA250 and ensure it is tight using Loctite 222 (pink).

114.   Within MDS proceed to the Diagnostic Toolbox (120). Select PCCU (121) then Sequences (122). Select Suspension Displacement Sensor Calibration (123) and proceed to the software download by selecting the tick button (124) followed by the arrow button (125). Follow the MDS on screen instructions to calibrate the displacement sensors.
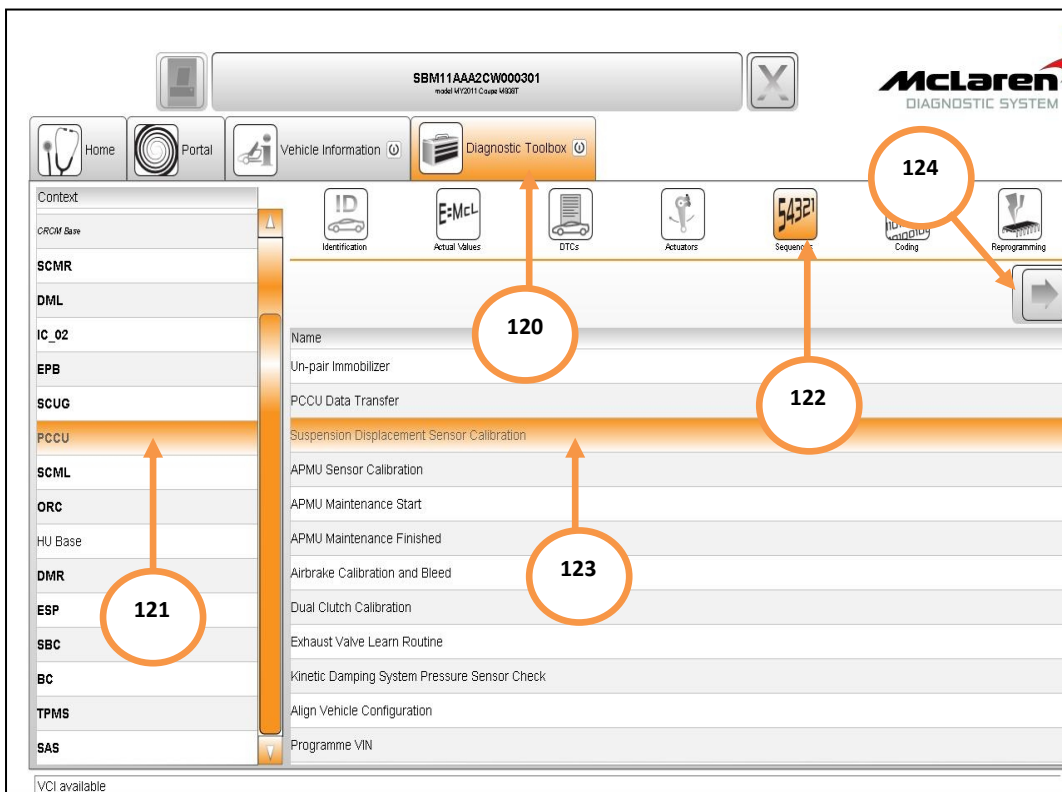
115.   Install **all** removed components in reverse order.

SOFTWARE PLATFORM PRE-WORK

Care point: In order to avoid injury and damage to the vehicle do not connect the positive terminal (+) to the negative terminal (-). Ensure connections are secure. Do not place any metal objects near the battery when charging and do not place the Deutronic battery charger directly onto the battery unit.

116.   Keep battery on charge, using Deutronic battery charger, during the downloading procedure.

Care point: All software downloads require the vehicle to be in ignition state 5.

Care Point: During the software download process it is normal for the instrument cluster lights to extinguish momentarily.

NECESSARY ADAPTIONS FOR VEHICLES FITTED WITH A SPORTS EXHAUST SYSTEM

Care point: This service campaign supersedes campaign bulletin 11 H 001 Exhaust valve fault. It is necessary to check all vehicles, fitted with a sports exhaust system, are configured correctly and reverse the procedure outlined in the previous campaign bulletin. If the vehicle is not fitted with a sports exhaust proceed to point 121.

117.   Within MDS proceed to the Diagnostic Toolbox (125) Select SCUG then Sequences (126) and select the 'SCUG' option (127). The 'Change Car Configuration' option (128) can then be selected followed by the arrow button (129).
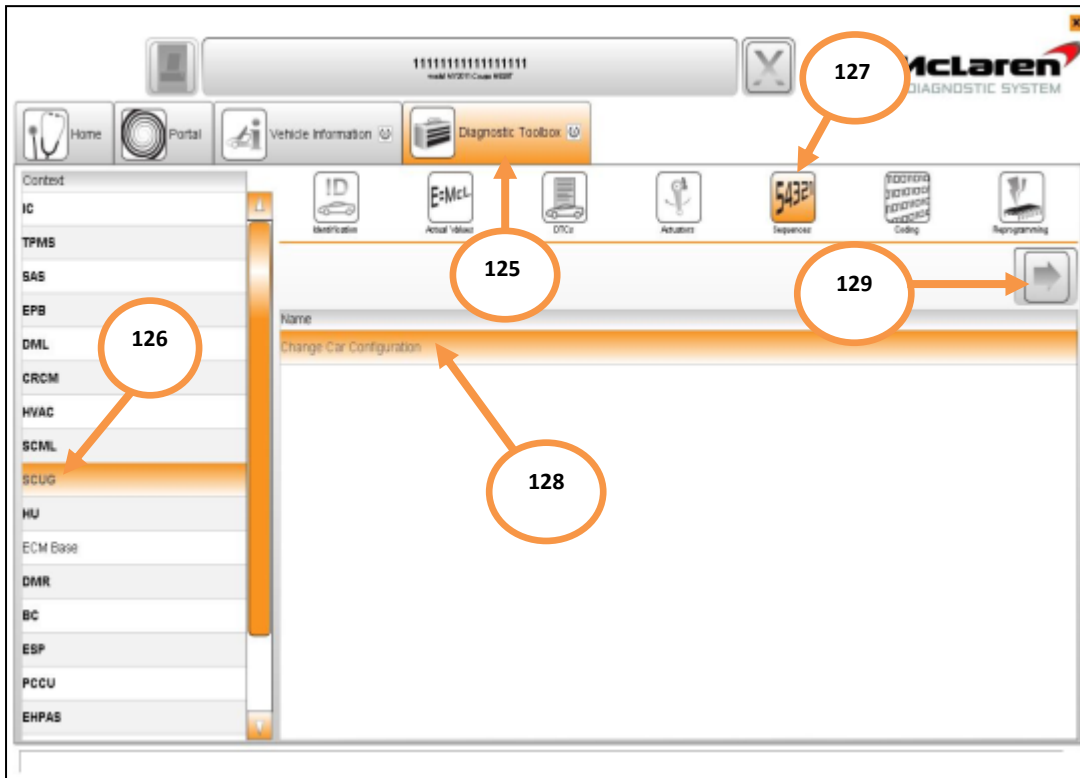
Care point: If the vehicle is already set to Sports, pneumatic valve control with position' exit this section in MDS and proceed to point 121.

118.   Scroll through the choices until exhaust is reached. Alter the setting to 'Sports, pneumatic valve control with position' (130) and select OK (131) to complete the coding sequence.
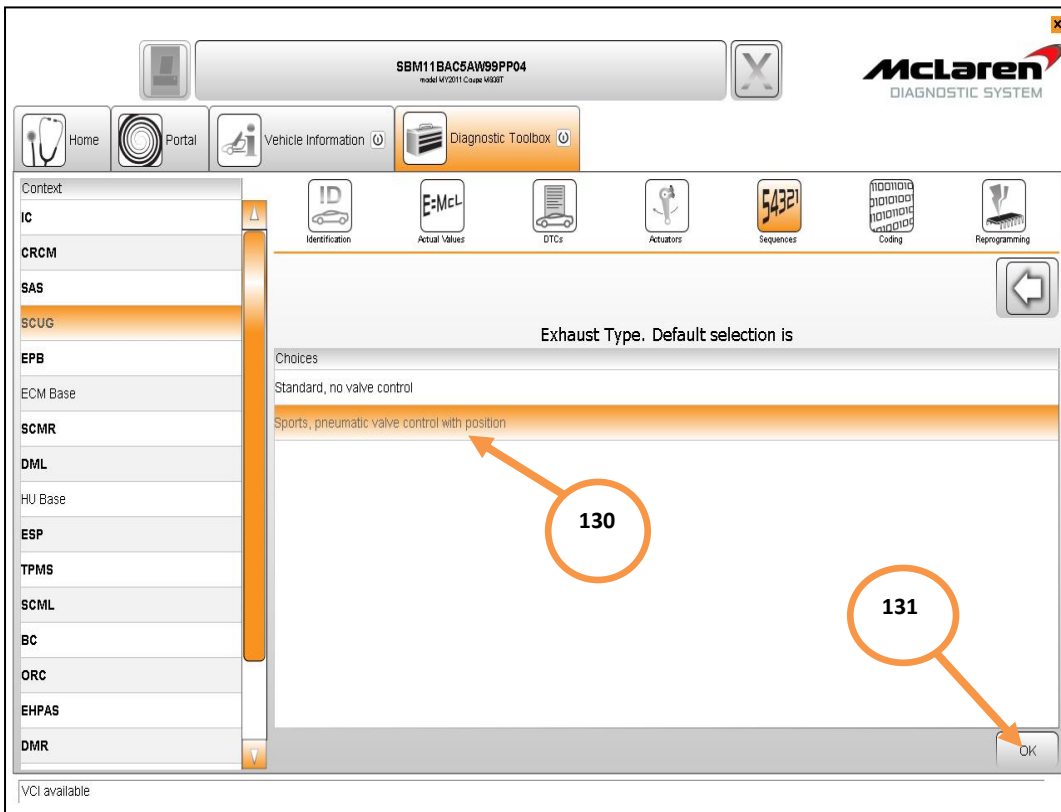
119. Enter the 'PCCU' option (132) and select 'Align Vehicle Configuration' (133). Then select the arrow button (134).
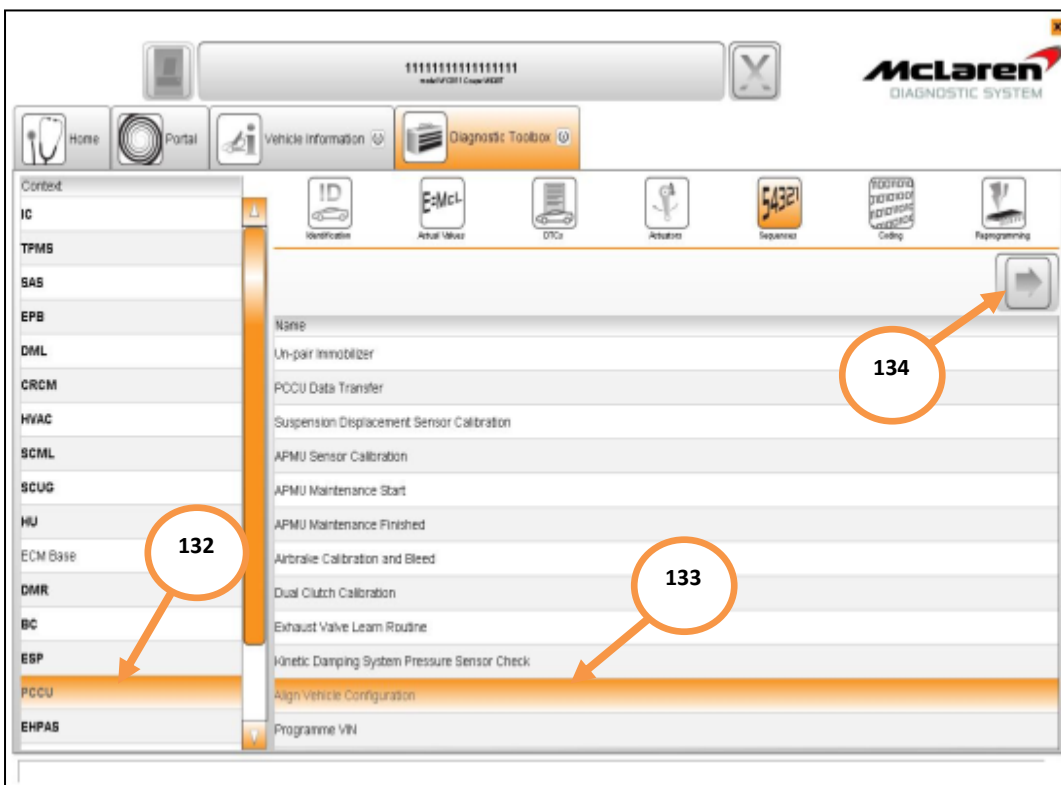
120. Select "Exhaust Valve Learn Routine" (135) then select the arrow key (136) in order to complete this process.
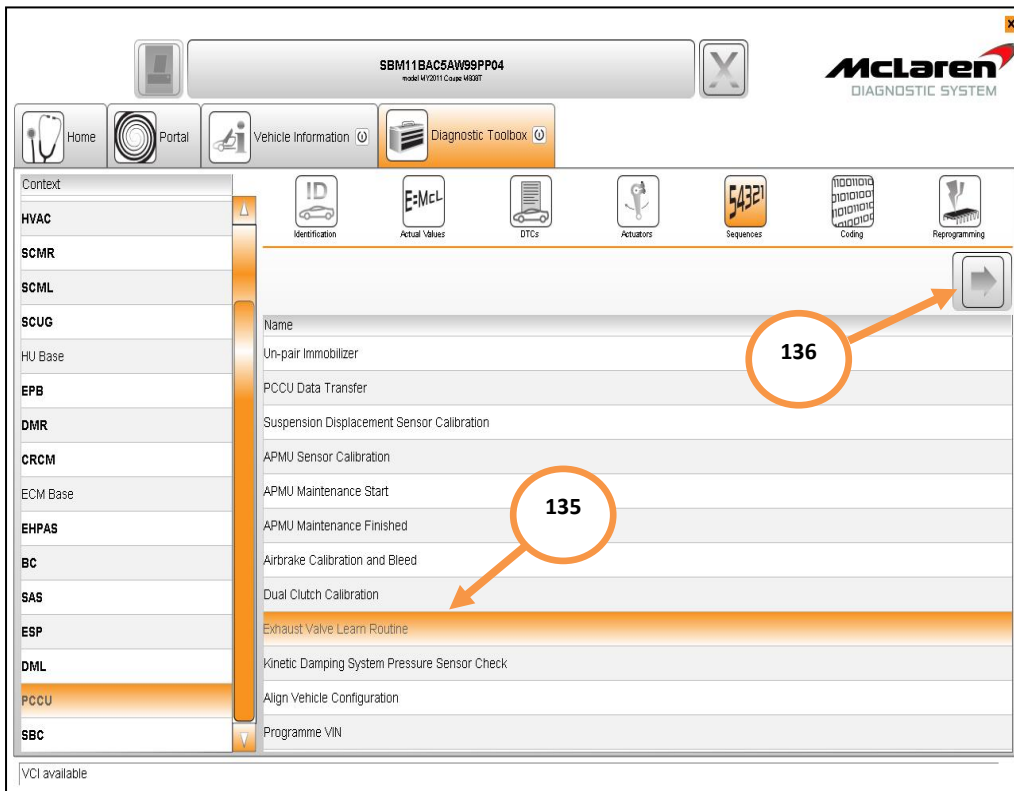
HVAC

Care point: Check for stored DTC's. If fault codes are present they will require clearing prior to proceeding.

121.   For 10 minutes immediately prior to the software download run HVAC system switching between the following settings:

Mono, Lo, AC on, max fan, screen, face, foot vent outlets (open), re-circulation on.

122.   Within MDS proceed to the Diagnostic Toolbox (137). Select HVAC (138) then Actual values (139). Select and Press the play button (140) and examine data.
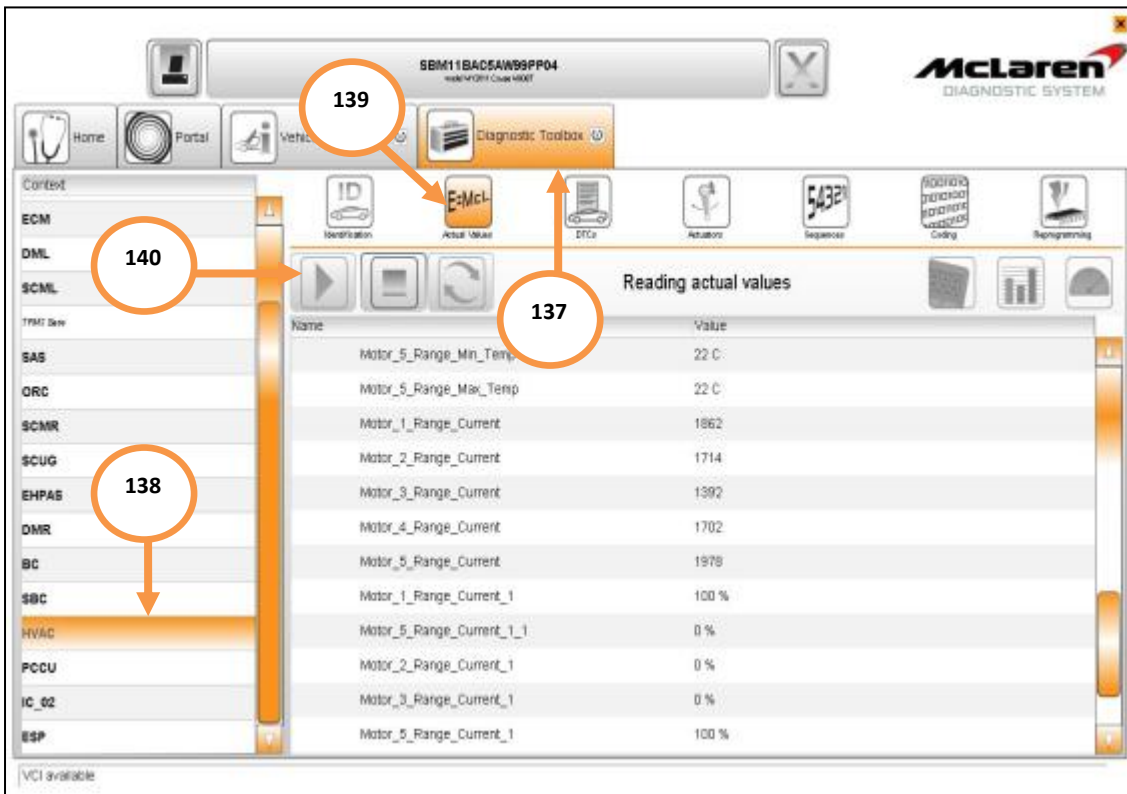
123.   Record the Motor Range data highlighted in orange within HVAC chart 1.

HVAC CHART 1

HVAC SETTINGS	RESULTS
Calibration Attempts	
Motor 1 Range Min	
Motor 1 Range Average	
Motor 1 Range Max	
Motor 1 Range Min Temp	
Motor 1 Range Max Temp	
Motor 2 Range Min	
Motor 2 Range Average	
Motor 2 Range Max	
Motor 2 Range Min Temp	
Motor 2 Range Max Temp	
Motor 3 Range Min	
Motor 3 Range Average	
Motor 3 Range Max	
Motor 3 Range Min Temp	
Motor 3 Range Max Temp	
Motor 4 Range Min	
Motor 4 Range Average	

Motor 4 Range Max	
Motor 4 Range Min Temp	
Motor 4 Range Max Temp	
Motor 5 Range Min	
Motor 5 Range Average	
Motor 5 Range Max	
Motor 5 Range Min Temp	
Motor 5 Range Max Temp	
Motor 1 Range Current	
Motor 2 Range Current	
Motor 3 Range Current	
Motor 4 Range Current	
Motor 5 Range Current	
Motor 1 Range Current _1	
Motor 5 Range Current _1_1	
Motor 2 Range Current_1	
Motor 3 Range Current _1	
Motor 5 Range Current _1	

124.   Compare the Motor Range figures with HVAC chart 2.

HVAC CHART 2

REVIEW VALUES AGAINST THE LISTED UPPER LIMITS	
Motor 1 Range Current	1920
Motor 2 Range Current	1460
Motor 3 Range Current	1460
Motor 4 Range Current	1820
Motor 5 Range Current	2100

125.   If any of the Motor Ranges are above the upper limit values in HVAC Chart 2 complete the full results section on Chart 1.

126.   Within MDS proceed to the Diagnostic Toolbox (141). Select HVAC (142) then reprogramming (143). Select software level 11A4742CP.09 (144) and proceed to the software download by selecting the tick button (145) followed by the arrow button (146).
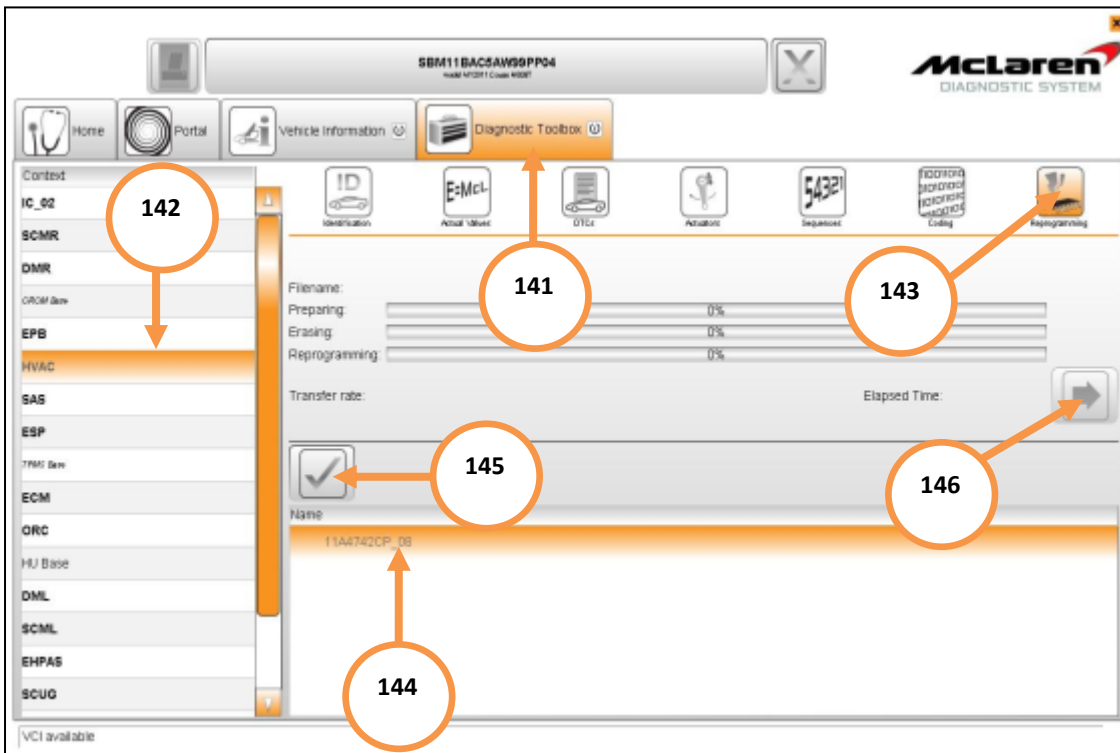
DOOR MODULE – LEFT

127. Within MDS proceed to the Diagnostic Toolbox (147). Select DML (148) then reprogramming (149). Select software level 11M1071CP.05 (150) and proceed to the software download by selecting the tick button (151) followed by the arrow button (152).
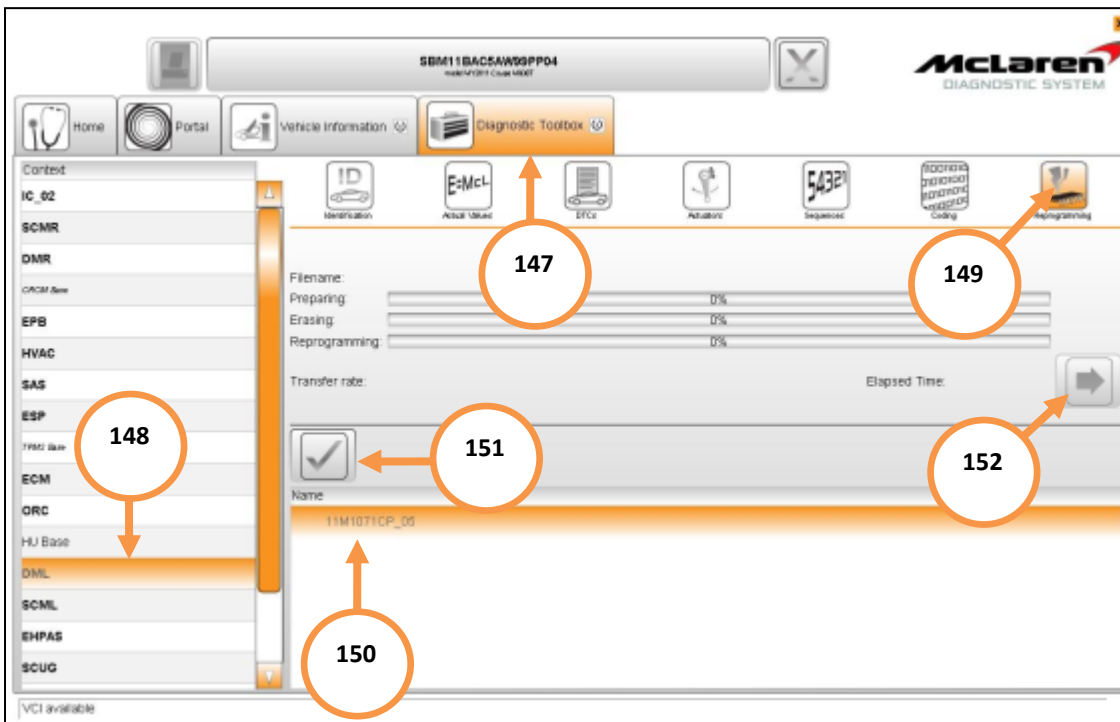
DOOR MODULE – RIGHT

128.   Within MDS proceed to the Diagnostic Toolbox (153). Select DMR (154) then reprogramming (155). Select software level 11M1070CP.05 (156) and proceed to the software download by selecting the tick button (157) followed by the arrow button (158).
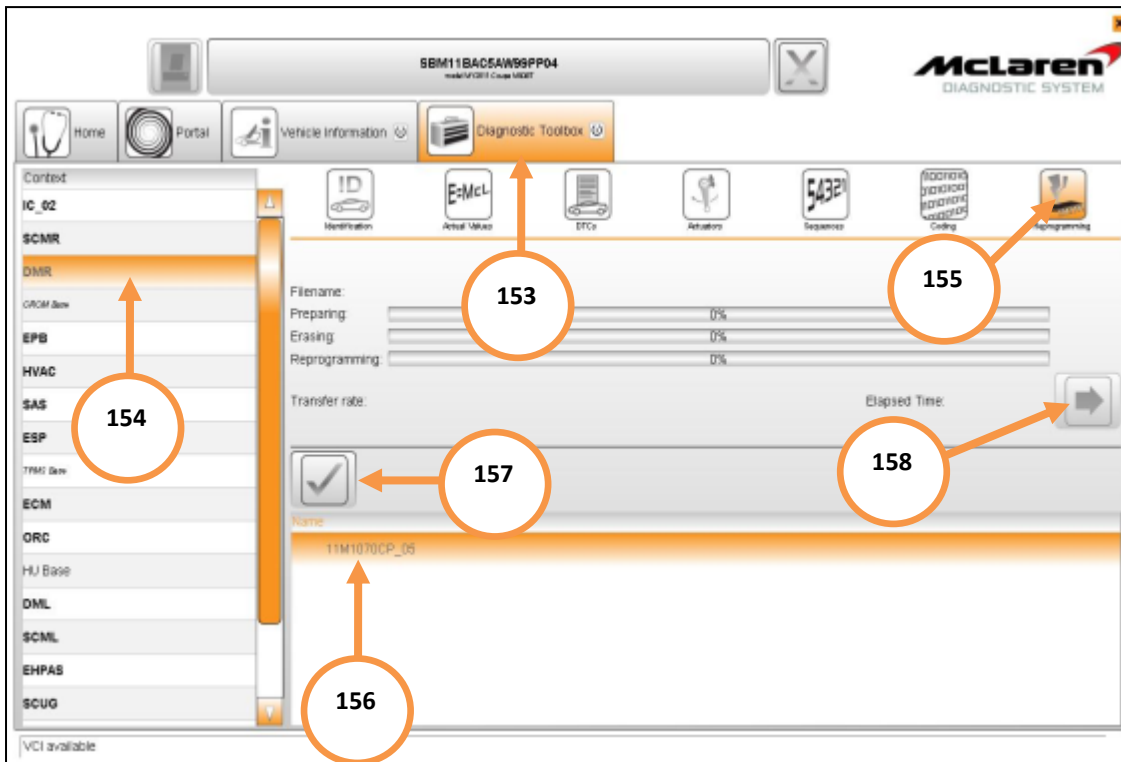
POWERTRAIN CHASSIS CONTROL UNIT SOFTWARE

Care point: During the downloading sequence the system may state preconditions or post conditions failed. These are erroneous messages and can be ignored. The PCCU download will take approximately 10 minutes to download. Only a programming failed message should be noted as a legitimate failure.

129.   Within MDS proceed to the Diagnostic Toolbox (159). Select PCCU (160) then reprogramming (161). Select software level 11M0938CP.12 (162) and proceed to the software download by selecting the tick button (163) followed by the arrow button (164).
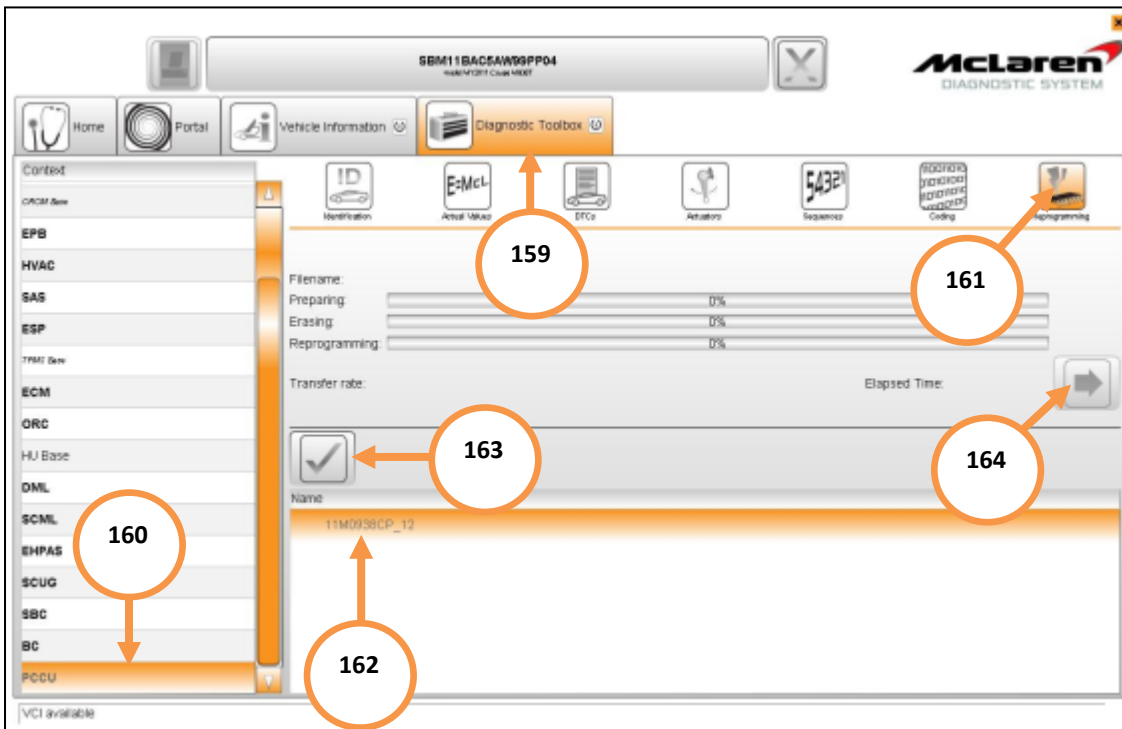
130. Cycle the ignition and wait for 20 seconds. Put the vehicle is a sleep mode then put vehicle back into ignition state 5. Clear DTC's before continuing on with the bulletin.

SEAT CONTROL MODULE – LEFT

131. Within MDS proceed to the Diagnostic Toolbox (165) select SCML (166) then reprogramming (167). Select software level 11N2321CP.02 (168) and proceed to the software download by selecting the tick button (169) followed by the arrow button (170).
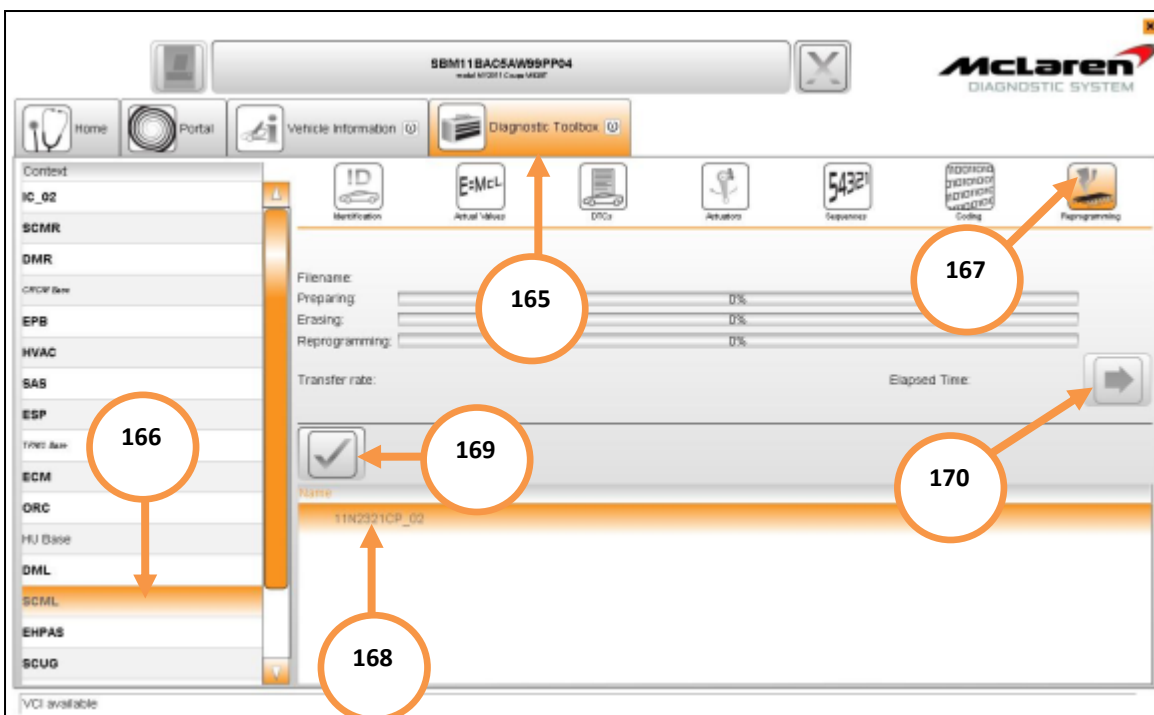
SEAT CONTROL MODULE – RIGHT

132.   Within MDS proceed to the Diagnostic Toolbox (171) select SCMR (172) then reprogramming (173). Select
        software level 11N2320CP.02 (174) and proceed to the software download by selecting the tick button (175)
        followed by the arrow button (176).
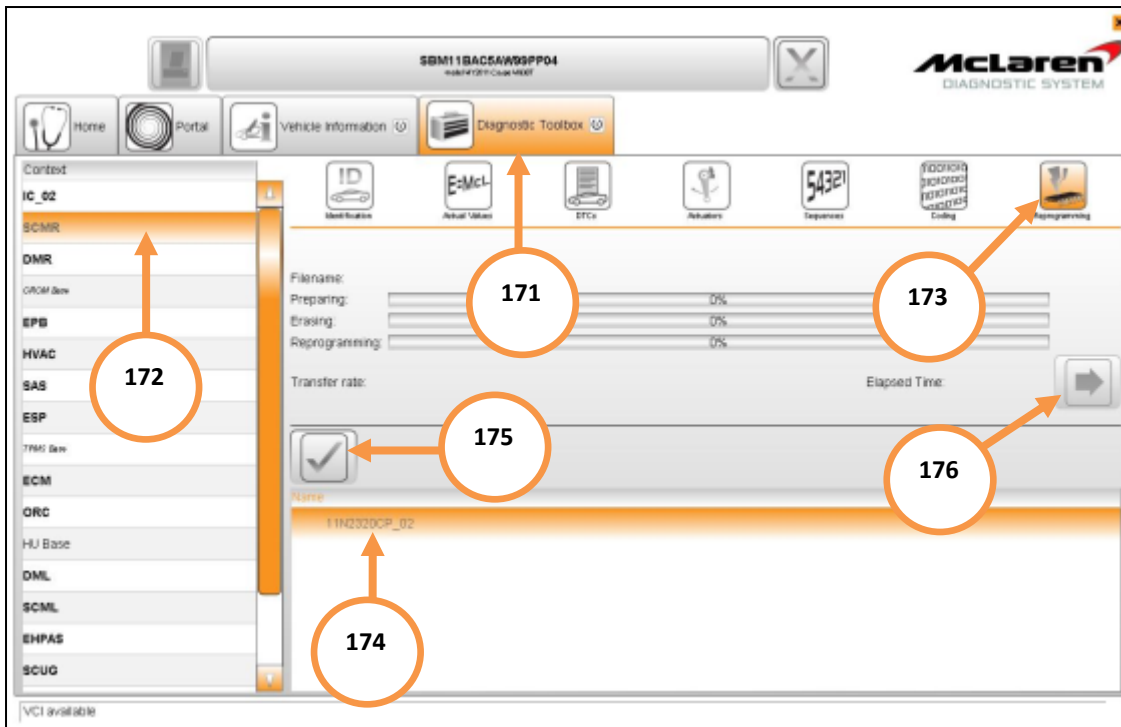
INSTRUMENT CLUSTER

Care Point: When looking for the McLaren Part Number for the Software ignore the 'Jade' section information.

133.   Within MDS proceed to Diagnostic Toolbox (177). Select IC_02 (178) then Identification (179).Open the
        Identification Block Read (180) and check that the McLaren Part Number for the Software. If the McLaren Part
        Number is 11M1180CP.11 proceed to point 139. If the part number is different continue on with the bulletin from
        point 134.
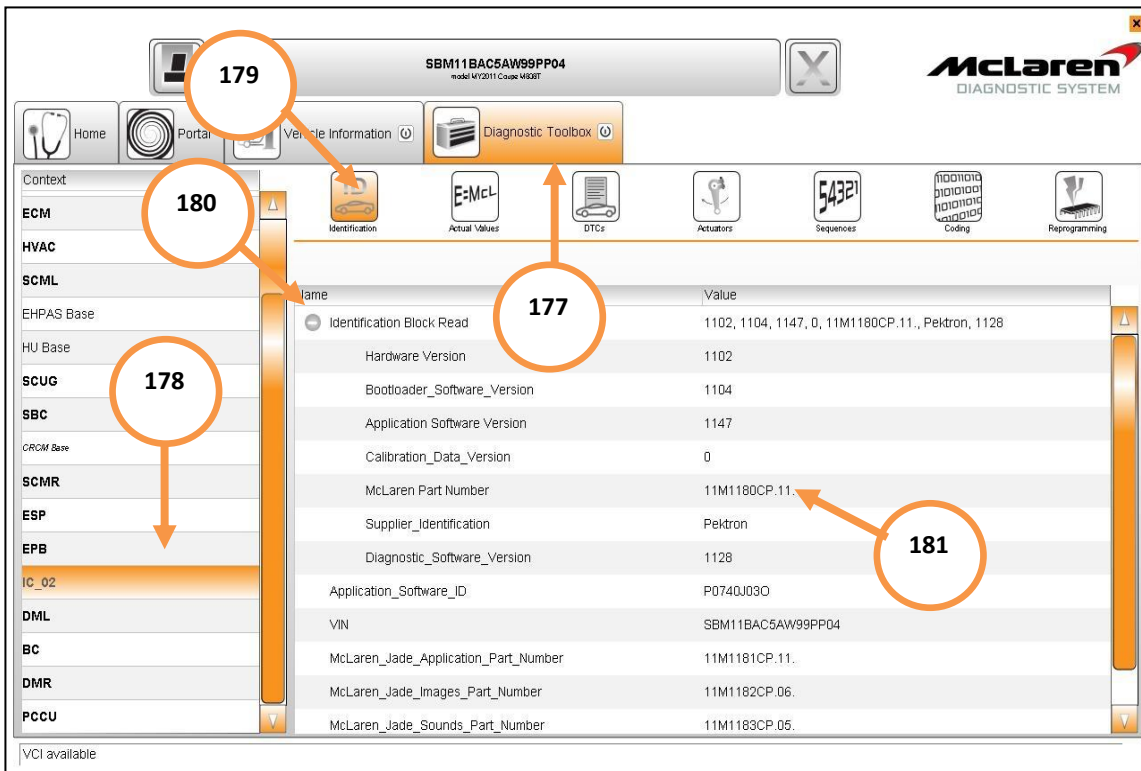
134.   Within MDS proceed to the Diagnostic Toolbox (182). Select IC_02 (183) then reprogramming (184). Select software level 11M1180CP.11 (185) and proceed to the software download by selecting the tick button (186) followed by the arrow button (187).
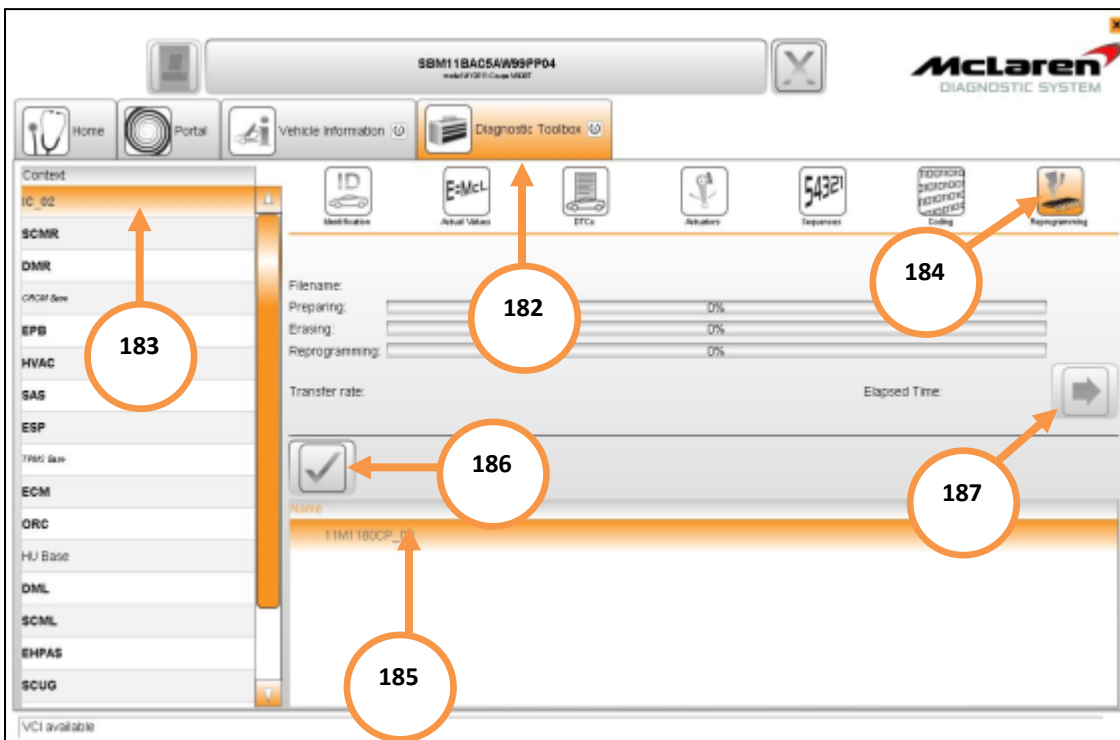

135.   Still within the Diagnostic Toolbox enter the Sequences section (188). Select Align Vehicle Configuration (189) and then select the arrow key (190).
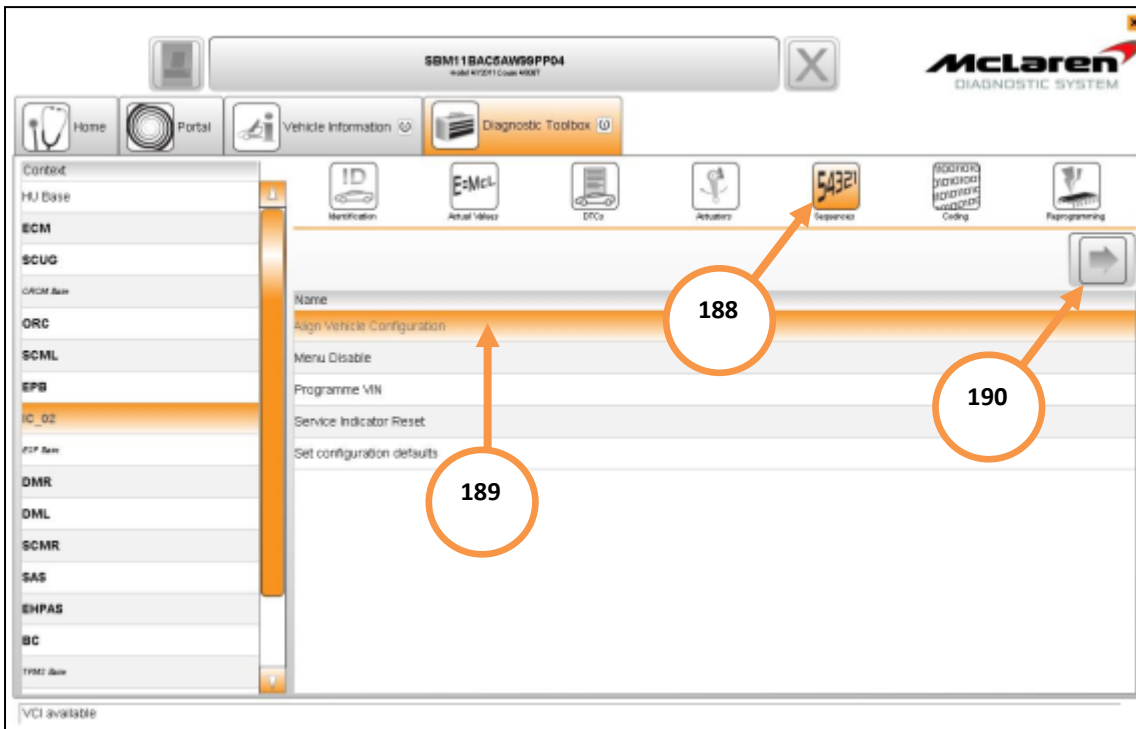
136.　Within the Diagnostic Toolbox enter the coding section (191). Check the VIN number displayed is correct and select (192). Click OK to continue (193).
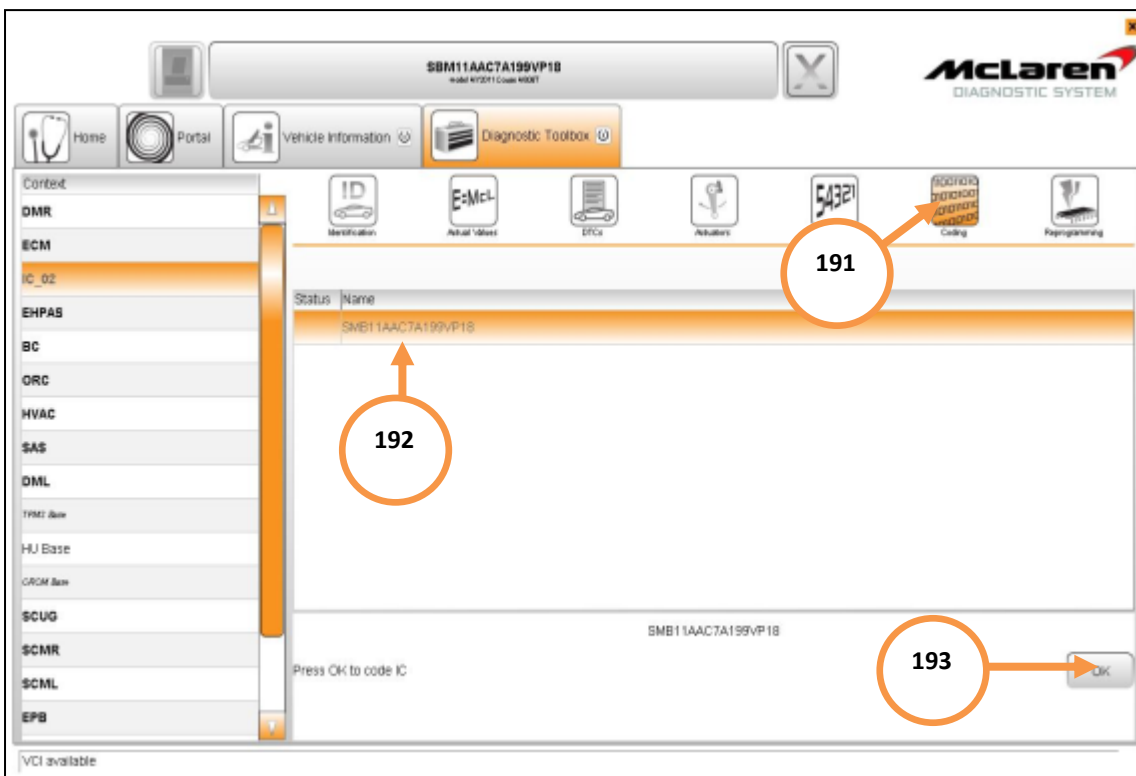
137.　Once the coding is successful enter the Sequences section (194) and proceed to set configuration defaults (195). Click arrow button when complete (196).
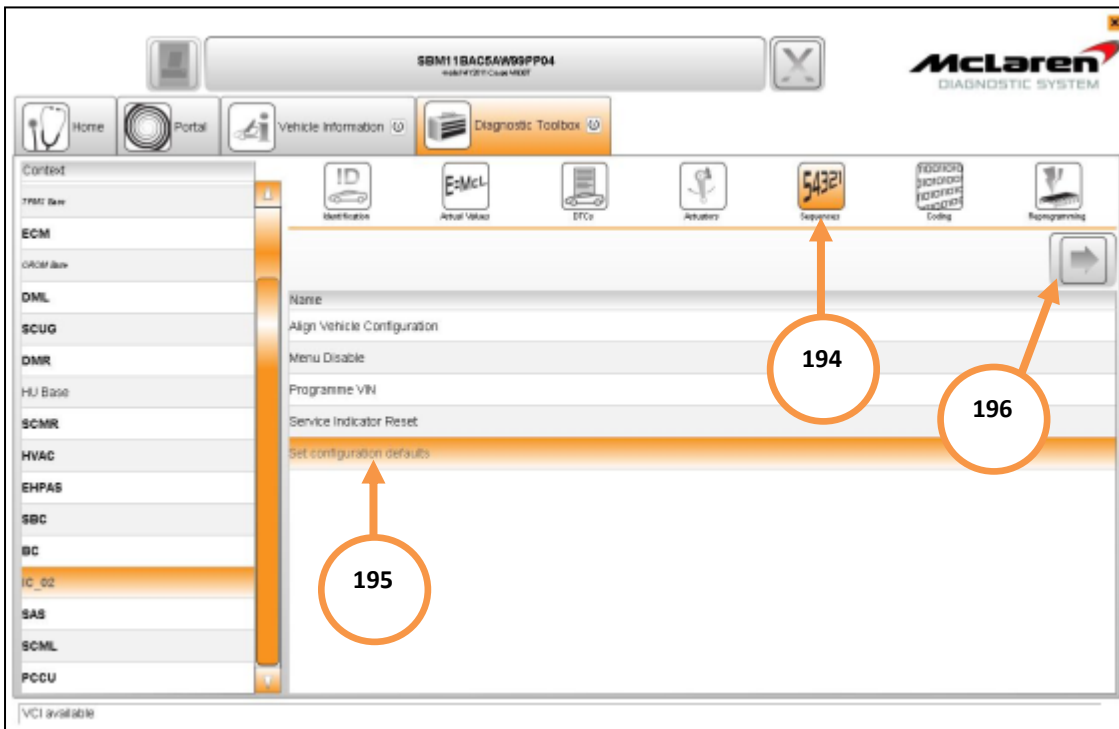
138.   Whilst remaining in the Sequences section select Programme VIN (197) and select the arrow button. (198).
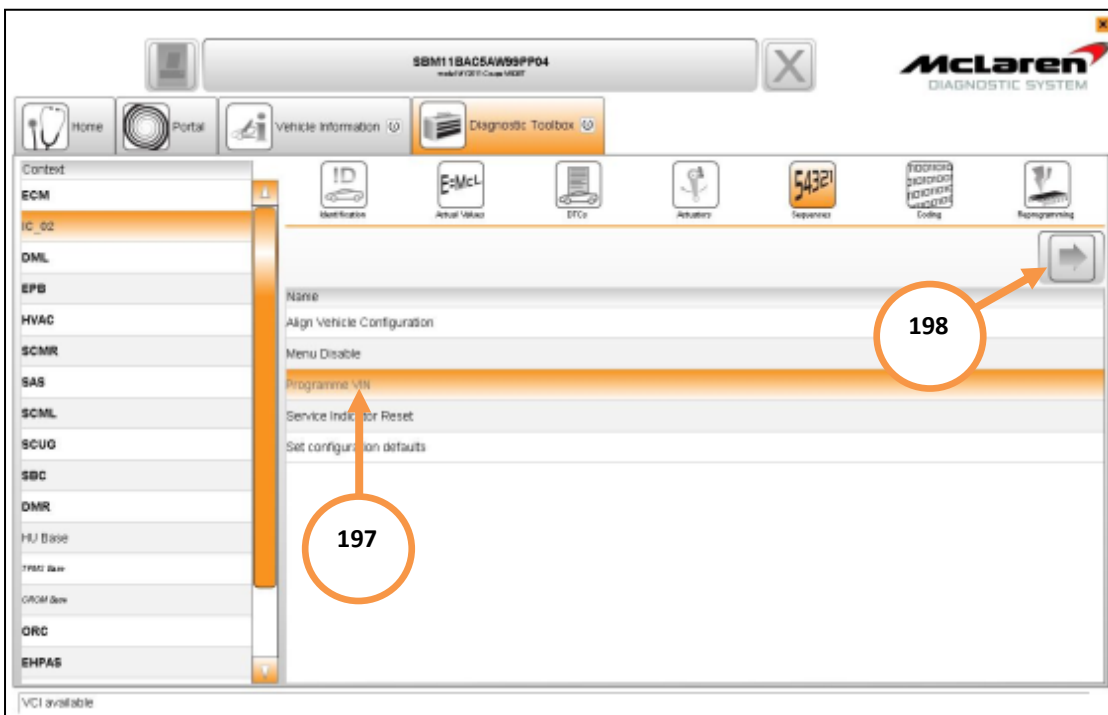
IRIS/ HEAD UNIT

Care point: 11 M 016 "Fuse for IRIS system" bulletin informed the dealer network to remove the In Car Personal Computer (ICPC) fuse until further notice. This bulletin is no longer active and the fuse should be re-installed. The IRIS system will not operate without the fuse. If you are working on a vehicle with the fuse removed re-install this component. Points 142-144 will inform you how to do this.

Care point: 11 M 024 Remove fuse for IRIS system will not be redundant once this download is complete. The completion of this section will illuminate the need to remove the ICPC once MDS is used, or a flash reprogram using a USB device is performed.

139.   Proceed to Diagnostic Toolbox (199) and select HU Base (200). Proceed to the Reprogramming section (201) and follow on screen instructions to reprogram IRIS electronic control unit with 11M2167CP.01.
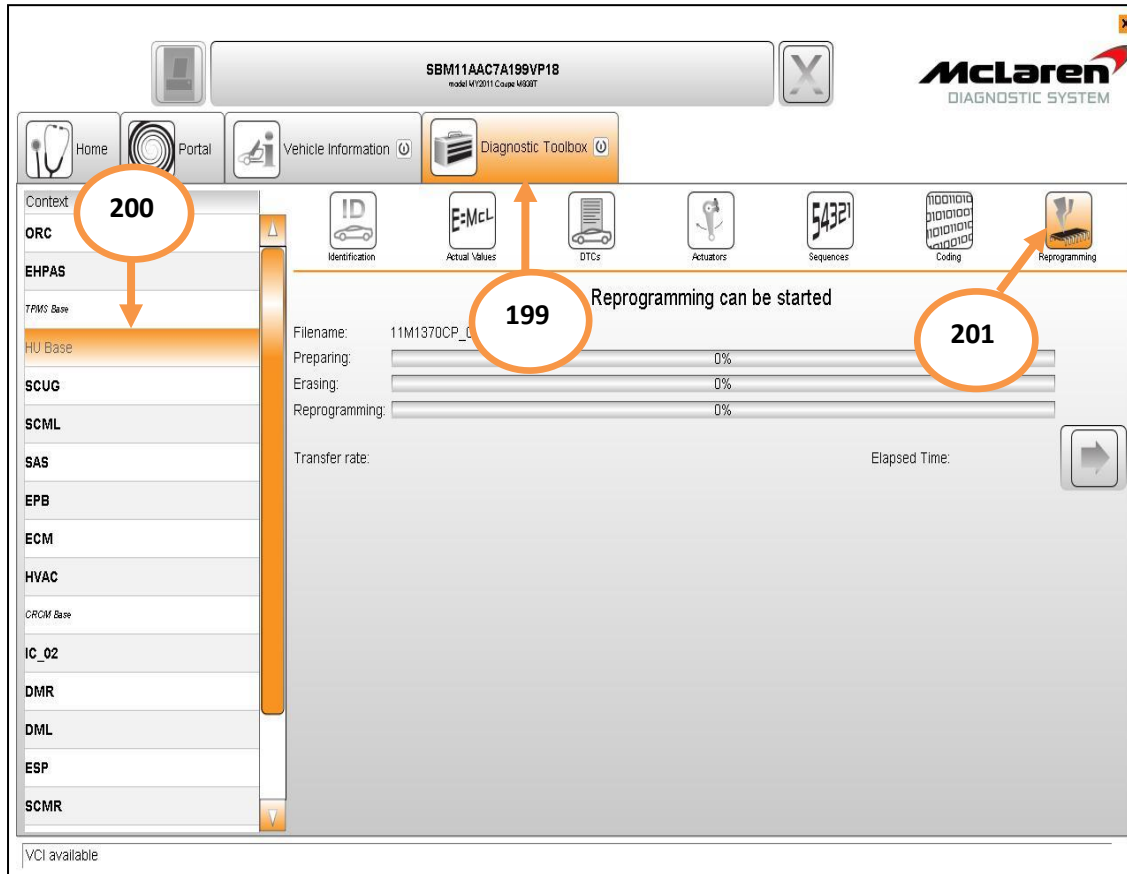
140.   Once this Reprogramming process has been completed the MDS screen should show as successful download (202).
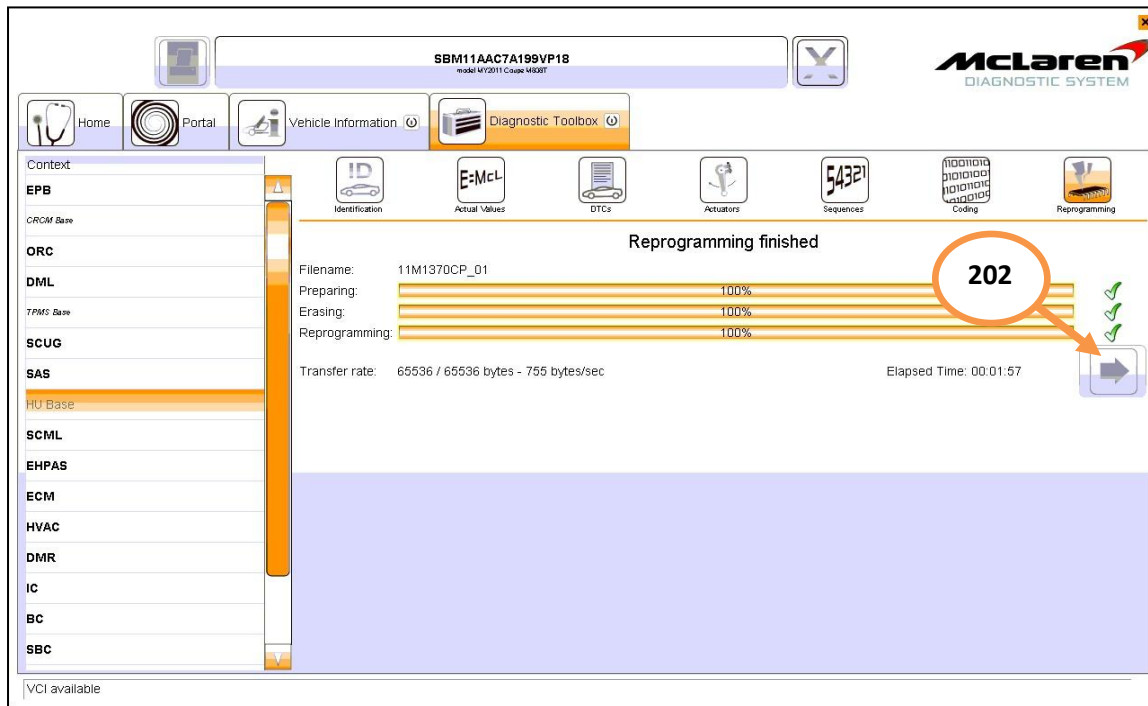
141. If the reprogramming is unsuccessful exit to the 'Scan Now' page. Re-start Vehicle Communication Interface (VCI) and re-cycle the ignition and repeat points 139-140.

142. Switch vehicle back to ignition state 2 and allow vehicle to sleep.

143. Remove the main fuse box access cover.

144. Remove the In Car Personal Computer (ICPC) fuse 26 within the main fuse box, as shown below. Re-insert ICPC fuse after 5 seconds.
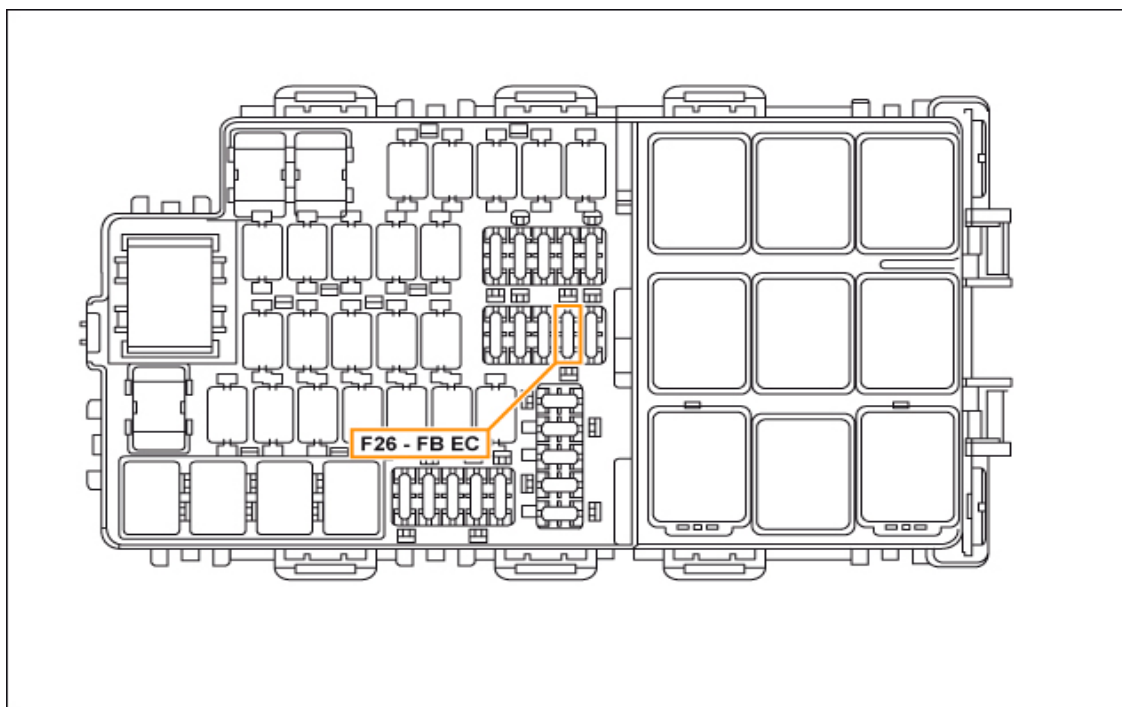
145.   Proceed to the software section on the HU and check the CPU and DU firmware are updated to version 1140.

146.   Perform an ignition cycle and ensure vehicle returns to ignition state 5.

147.   Select radio on the IRIS system and turn radio on. Ensure the TP is switched off. Select available stations and scroll down to the bottom. If there is a flashing radio icon wait as the system will still be finding stations. Scroll back again to the top once complete.

148.   Select the back button then the fast forward button. Hold down button 1 to store a radio station. Repeat the process until all six options are populated.

149.   Close the doors with the radio operational. Lock the vehicle and check the IRIS unit goes to sleep within two minutes. Wait for the lock button to start flashing and unlock the vehicle.

Care point: USB drive must be inputted with gold tabs facing downwards.

Care point: A previous USB drive was given to the dealer network for an update on bulletin 11 M 019 "Software platform update". This USB stick is no longer relevant and should no longer be used.

150.   Insert the USB flash drive in the USB socket (203)
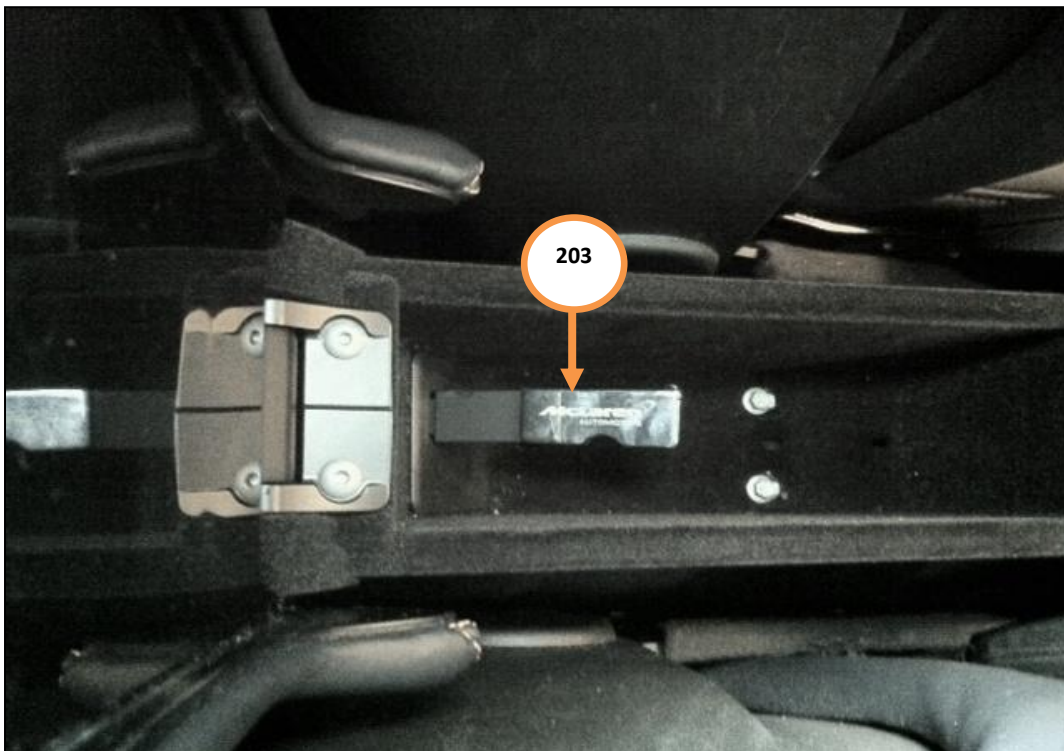
151.   Check Head Unit screen. Press update when instructed (204) and remove pen drive when finished.
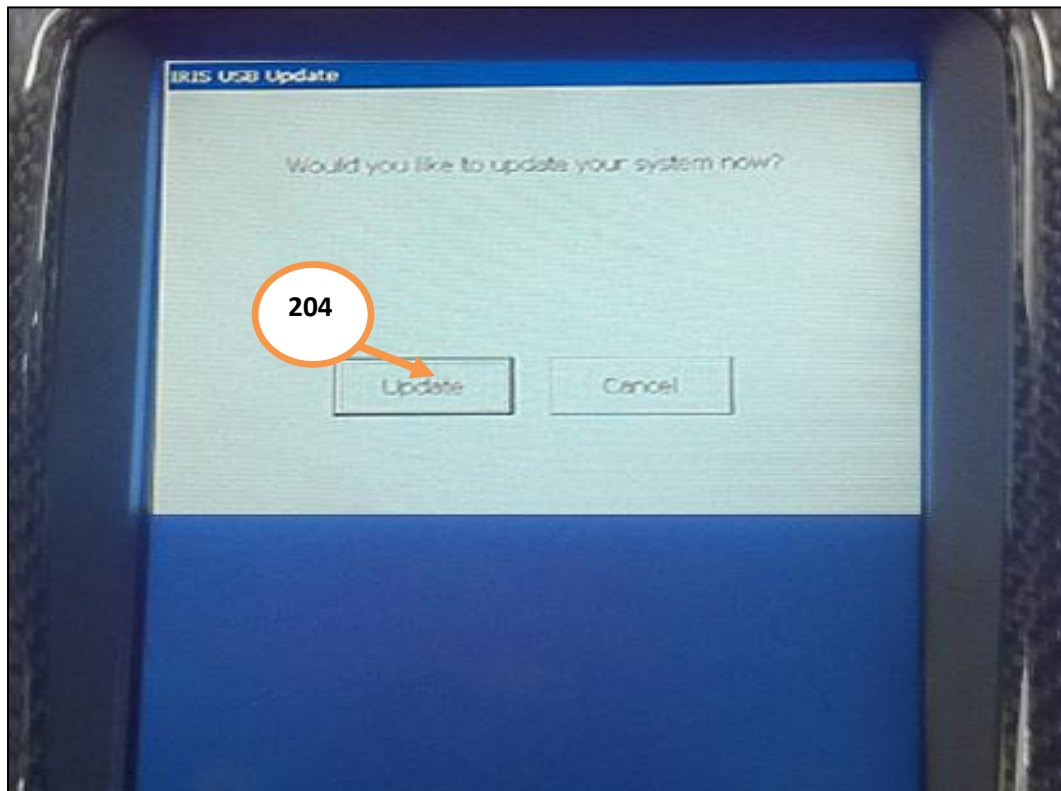
152. Reboot IRIS system.

153. Perform an ignition cycle and ensure vehicle returns to ignition state 5.

Care point: iPod/ iPhone will be required to fully complete the IRIS/Head Unit checks.

154. Perform a function check by following the IRIS/Head Unit chart.

Follow the instructions outlined in the following table.	Test Description	Execution Steps	Expected Result
1	Switch on unit	Vehicle IGN state 5 (via "start" button)	McLaren image followed by standby screen (time in top right corner) or home screen (with icons) depending on last mode.
2	Switch on unit, if unit is in stand by screen	Press the Home button on the Head unit	Home screen (with icons) displayed
3	Check if latest IRIS/ Head Unit SW versions are loaded	Press the Setting Button on the Home screen Select About and then Software	- Compare all versions which are displayed with screen image or list given. - If not, flash firmware via production tester, application software via given USB flash drive - Repeat this step to verify all versions are ok
4	USB and iPod connectivity	- Press the Home button on the Head unit - Connect iPod / device with music to USB port to connector unit in storage	- Indexing symbol displayed in status line after inserting the iPod / device - Wait until device Name is

		compartment - Press the Media Button on the Home screen	displayed in Media screen then select the device name - If iPod was playing last time, music will continue to play on the speakers
5	To verify the touch screen response	- Select the device on the source selection screen (if iPod was not in play mode before) - If iPod was in play mode select Browse icon in the now playing screen - Select Songs Button from the list - Flick song list up and down on the touch screen	Song list is displayed and moving with the flicking up and down
6	To verify upper Hard Keys	- Press left upper Hard Key - Press right upper Hard Key	Song list is moving up and down
7	To verify audio play back	Select any song from the song list	Now playing screen displayed and track time is progressing
8	To verify whether Volume Changes	Change Volume Up and Down - Turn the ring Encoder in both the directions and set it to 65	- Volume changes should be observed on the speakers without any distortion. - Music should Play on the speakers without any distortion.
9	To verify lower right Hard key/Mute.	- Press the Lower Right Hard Key (showing Mute Symbol) - Press the same key to un-mute again	- Verify the Audio gets Mute - Verify the Audio gets un-mute.
10	To verify lower left Hard key/Mute.	- Press the Lower left Hard Key (arrow symbol pointing upwards) - Press Radio in MCC	- Verify the MCC window pops up. - Verify the source switched to Radio from Media and Radio
11	To verify radio antenna connection	Press search to go to a known station with reception	Verify audio from this station observed on the speakers
12	To verify the Centre Hard key	- Press the Home button on the Head unit. - Press the Media Button on the Home screen	- Verify the Head unit is back to Home screen. - Verify the Now Playing screen is displayed
13	Remove iPod/device and cable from USB port/car	Unplug cable from USB port	Verify display show source selection screen shows No Source Available
14	Set the unit to default state	Press the Home button on the Head unit	Home screen (with icons) displayed

![McLaren Automotive logo]

Software Numbers Ref Point 3 in IRIS Table:

1:04 PM

« BACK

Software

CPU Firmware
1.4.4–11M1370CP.01

Display Unit Firmware
1.4.4–11M1367CP.01

Operating System
WIN CE 7.0.0.11019–11M1376CP.01

Application Software
1.0.1.11093018–11M1369CP.01
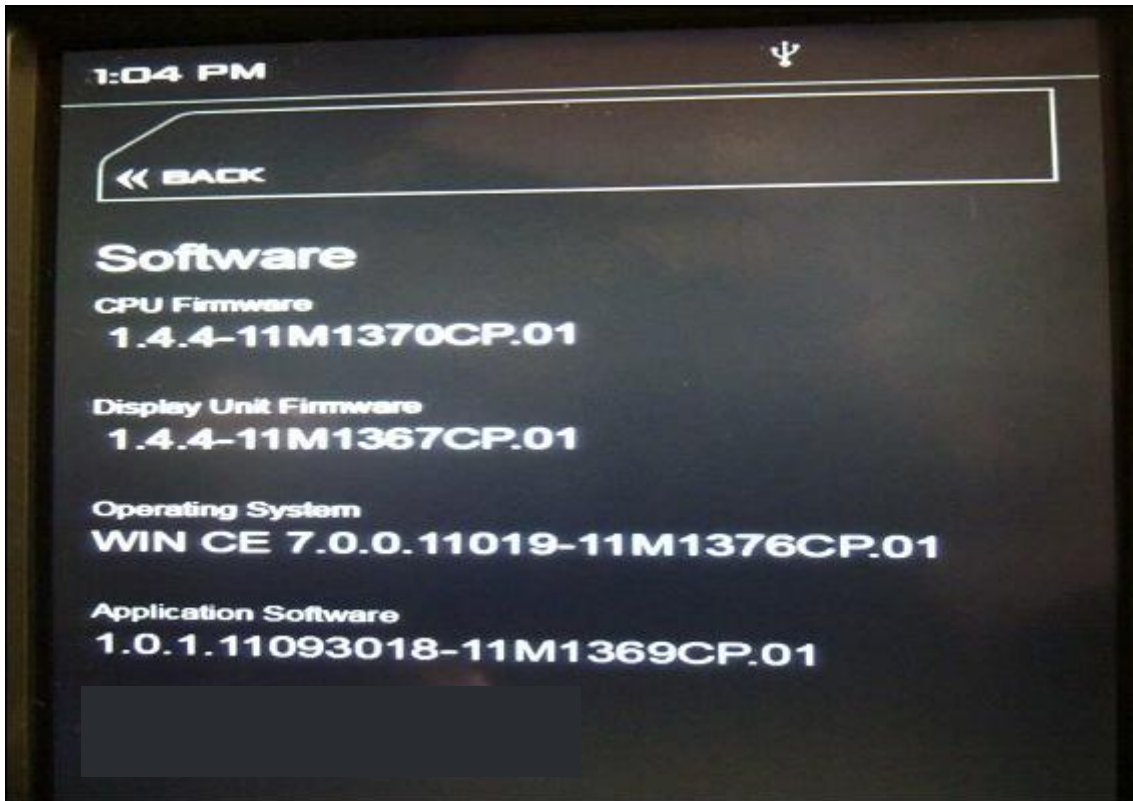
155.   Check fade front to rear and balance left to right is operating correctly.

ENGINE CONTROL MODULE SOFTWARE

156.   Within MDS proceed to the Diagnostic Toolbox (205). Select ECM (206) then reprogramming (207). Select software level 11M1399CP.04 (208) and proceed to the download by selecting the tick (209) followed by the arrow button (210).
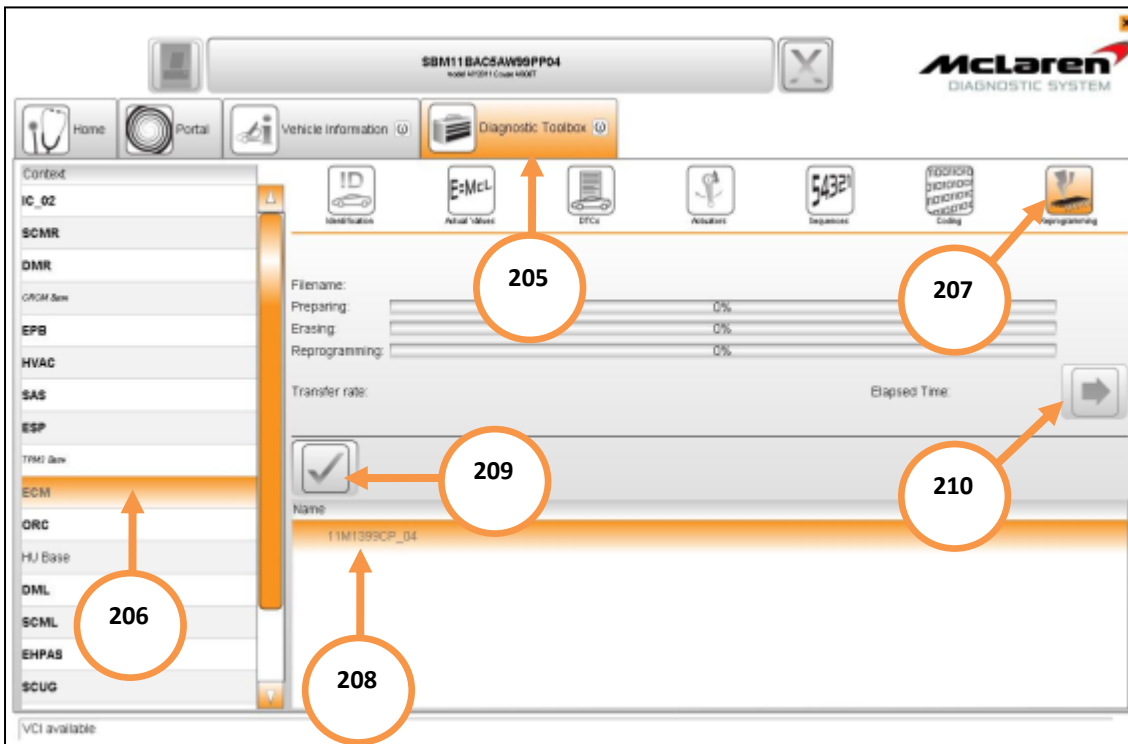
Care point: Engine ECM DTCs ideally should only be cleared in ignition state 5. If DTCs have to be cleared with engine running then the engine must be stopped and restarted again directly afterwards. Failure to do this can result in the camshaft controller target positions remaining at 'parked' for the remainder of the drive cycle, this can mean that camshaft diagnostics will not correctly function.

157.   Perform an ignition cycle by switching the vehicle off. Detach MDS equipment then put the vehicle into sleep mode. Return the vehicle to ignition state 5, ensuring that you do not depress the brake pedal, and reconnect the MDS equipment.

158.   Select and highlight all items within the context fields (211) and perform a global clear of all DTC's (212).
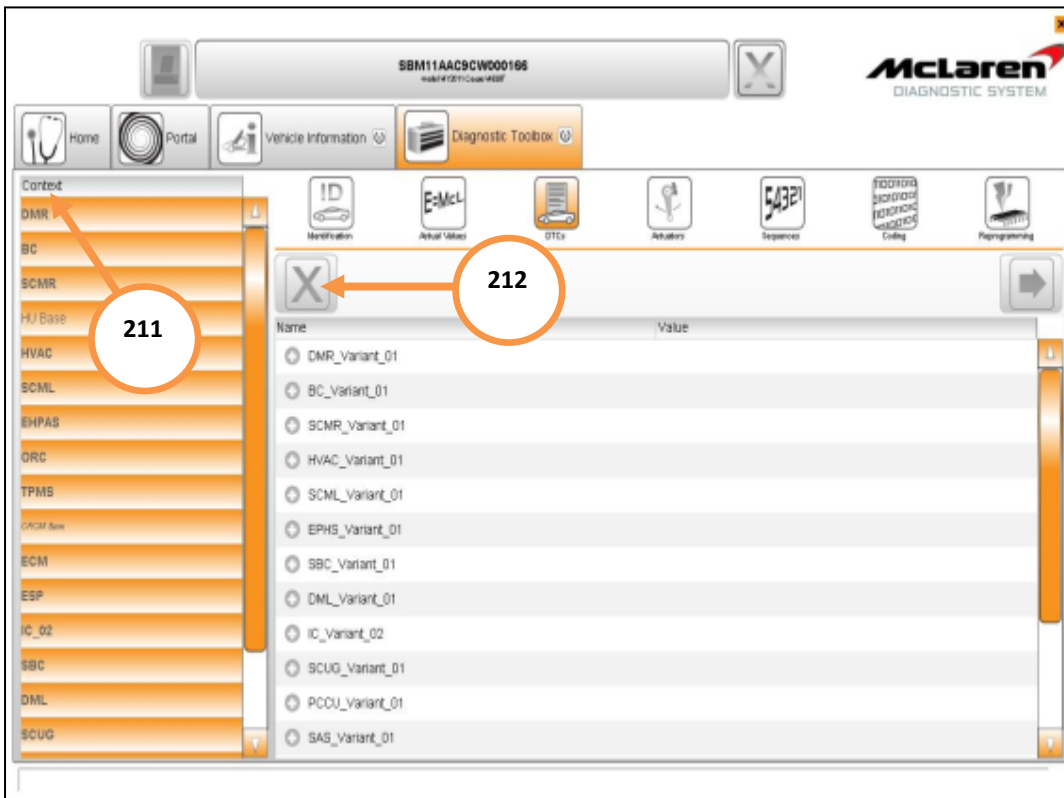
159.   Press the stop/start button with the brake pedal depressed and start the engine.

160.   Check if any ECM DTC's are stored. If any are stored resolve and clear.

Care point: Allow engine to idle to fully warm in order to check Engine ECM adaptions. Complete point 149 with doors and windows closed.

161.   With air-conditioning (A/C) off leave vehicle in neutral at idle for three minutes.
        With A/C on leave vehicle in neutral at idle for three minutes.
        With A/C off leave vehicle in drive for three minutes.
        With A/C on leave vehicle in drive for three minutes.

162.   Check for ECM DTC's. If DTC's are present note them down on the table below.

STORED ECM DTC'S	

SEAT CALIBRATION AND OCCUPANT CLASSIFICATION PROCESS

Care point: Ensure seat is in the mid-mid position prior to OCS sequence calibration. It is necessary to follow the instructions exactly outlined in MDS.

163.   Connect MDS and proceed to Diagnostic Toolbox within the Occupancy Restraint Controller (ORC).

164.   Access sequences section of MDS.

165.   Carry out Configure Occupant Classification system.

Care point: The seat calibration process does not apply to vehicles with manual seats. If the vehicle is fitted with manual seats please proceed to point 179.

Care point: Ensure vehicle is in ignition state 5 before calibrating seats.

Care point: It is necessary that the seat gauge (213) is used to perform the seat calibration process.
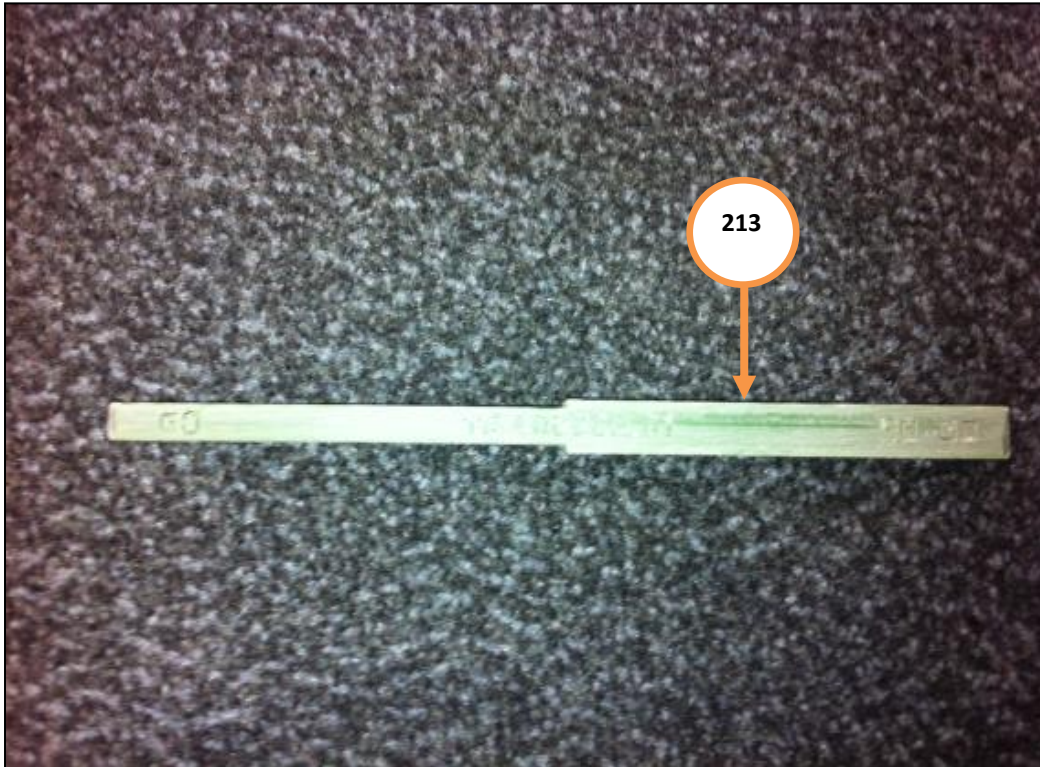
166. Ensure seat is positioned in approximately a mid-mid position and the seatback is vertical.

167. Move the seat rearwards into its most rearward position.

168. Move the seat forwards by approximately 50mm.

169. Move the seat rearwards once more until it is in its most rearward position.

170. Move the seat downwards into its most downward position.

171. Move seat upwards into its most upward position.

172. Move seat downwards once more until it is in its most downward position.

Care point: The seatback angle can be adjusted backwards and forwards any number of times as long as the seat remains in its rearmost lowest position.

Care point: The seat calibration gauge **needs** to be placed in the smallest gap between the seatback and B-Pillar trim in order for the calibration to be performed correctly.

173. Adjust the backrest angle until the desired gap between seatback and B-Pillar has been achieved using the seat gauge. The gap **must not** be narrower than the smaller end of the calibration tool (214). The tool should move freely between the seatback and the B-Pillar

174. The gap **must not** be wider than the wide end of the calibration tool (215). If the seat is in the correct position the tool should not be able to fit between the seatback and B-Pillar.

175. Press and hold down the heater and memory buttons on the seat switch pack simultaneously for approximately 5 seconds until a cluster sound is heard.

176. If the cluster sound is heard no further action is required. If no cluster sound is audible repeat the calibration process from points 166-175.

177.   Move seat forward for 7 seconds, and then up for seven seconds so that the seat is in the mid/mid position.

178.   Cycle the ignition.

179.   Check functionality ensuring memory seat function is still operational. If fitted check memory seat function is operational.

Care point: Auto alarm function is to be disabled as in interim measure to alleviate the risk of erroneous sounding of the alarm. Customers should be informed of this adaption.

180.   Disable auto alarm function. This option is displayed on the left hand side of the instrument cluster under vehicle settings. Instructions how to perform this procedure can be found on page 112 of the Owner's Manual.

Care point: Switch off mains electricity before removing the battery charger.

181.   Disconnect Deutronic battery charger.

QUIESCENT BATTERY DRAIN TEST

Care point: Ensure headlights are set to manual off. Please refer to page 41 of the Owners Manual.

Care point: Ensure courtesy light are switched off. Please refer to page 110 and 147 of the Owners Manual

Care point: Remove and install negative battery terminal in-between checking the unlocked and asleep and locked and asleep modes. Locking and unlocking the vehicle with the multi meter attached can cause the fuse within the device to blow.

Care point: If the clip of the multi meter slips off a terminal, repeat entire list of function checks again.

182.   Quiescent battery drain test will need to be checked when the vehicle is **unlocked and asleep** and **locked and asleep.**

183.   Attach multi meter as shown (216).
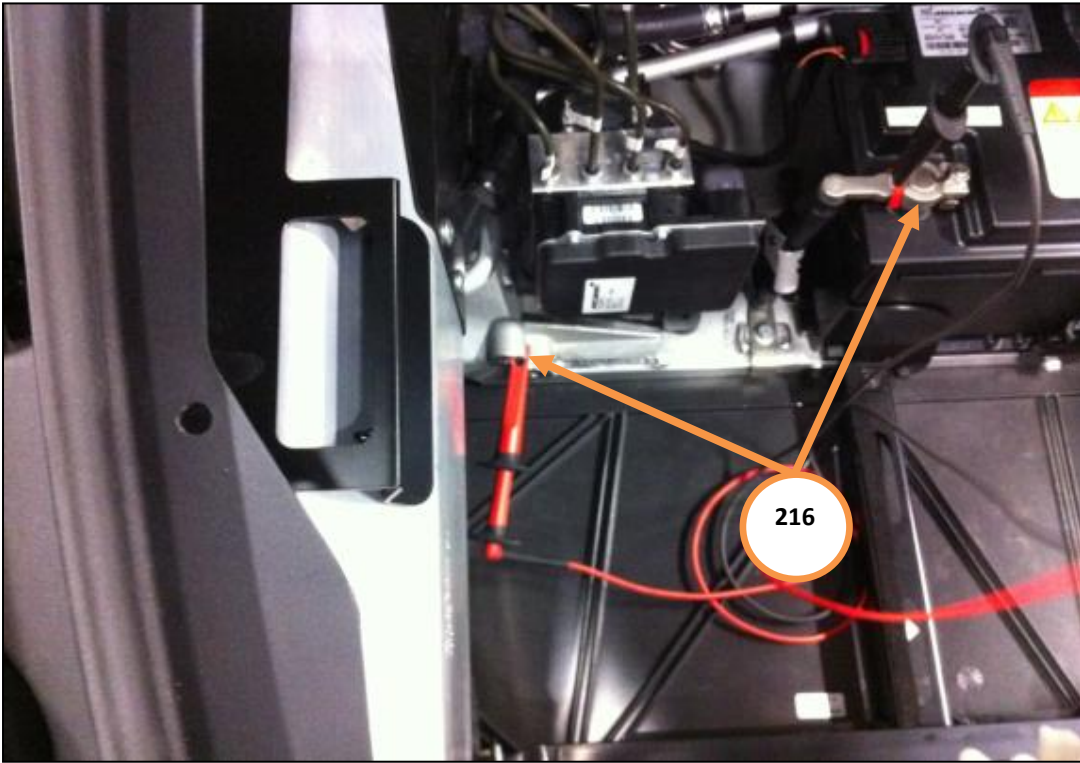
184.   Detach negative battery terminal (217).
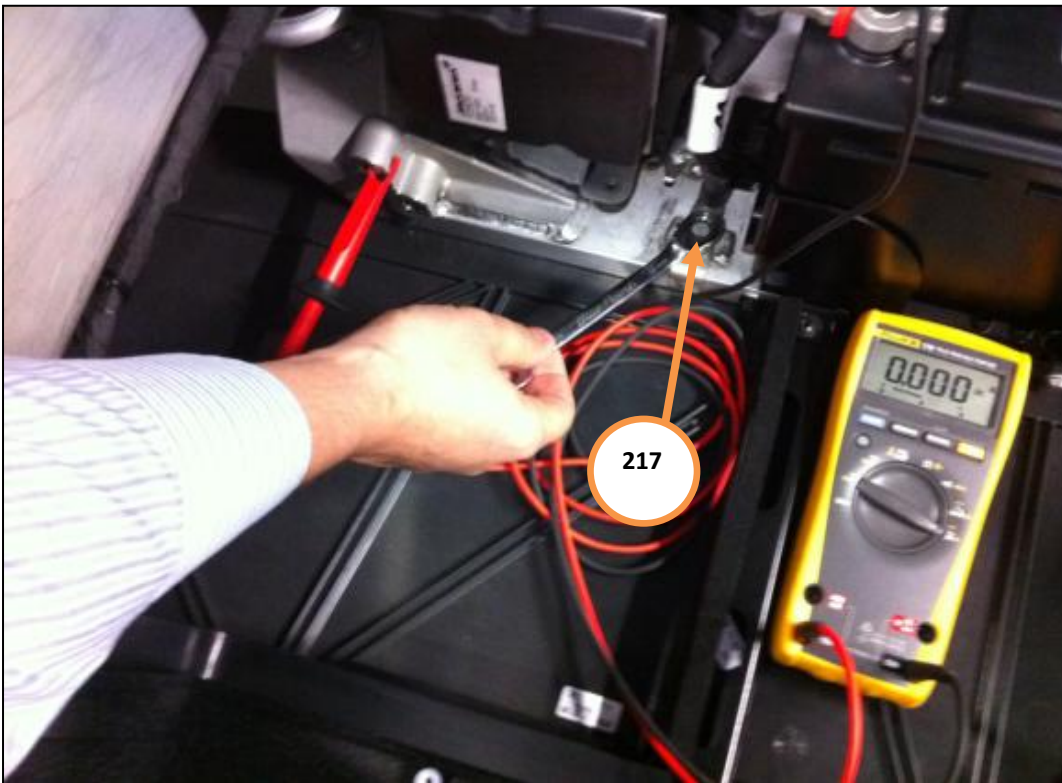
185.   Detach negative battery terminal (218).
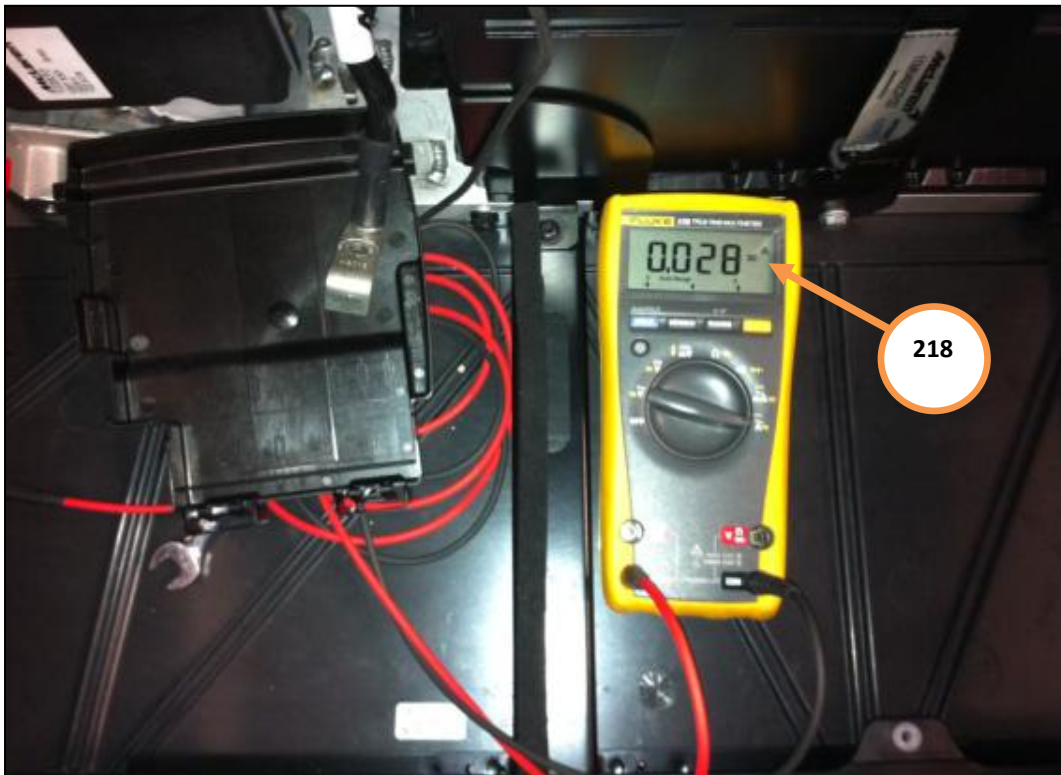
186.   Record the mA output for both quiescent battery drain tests on the following chart:

VEHICLE UNLOCKED AND ASLEEP/MA	VEHICLE LOCKED AND ASLEEP/MA

REPROGRAMMING BATTERY CONTROL UNIT

Care point: Your regional Aftersales manager will supply the dealership with full instructions on the battery flashing instructions including setting up the laptop if the system has been re-set. These separate instructions can be referred to if the battery reprogramming is unsuccessful.

187.   Detatch electrical connector (219) and plug in USB cable connector into the battery from where it was removed (220).
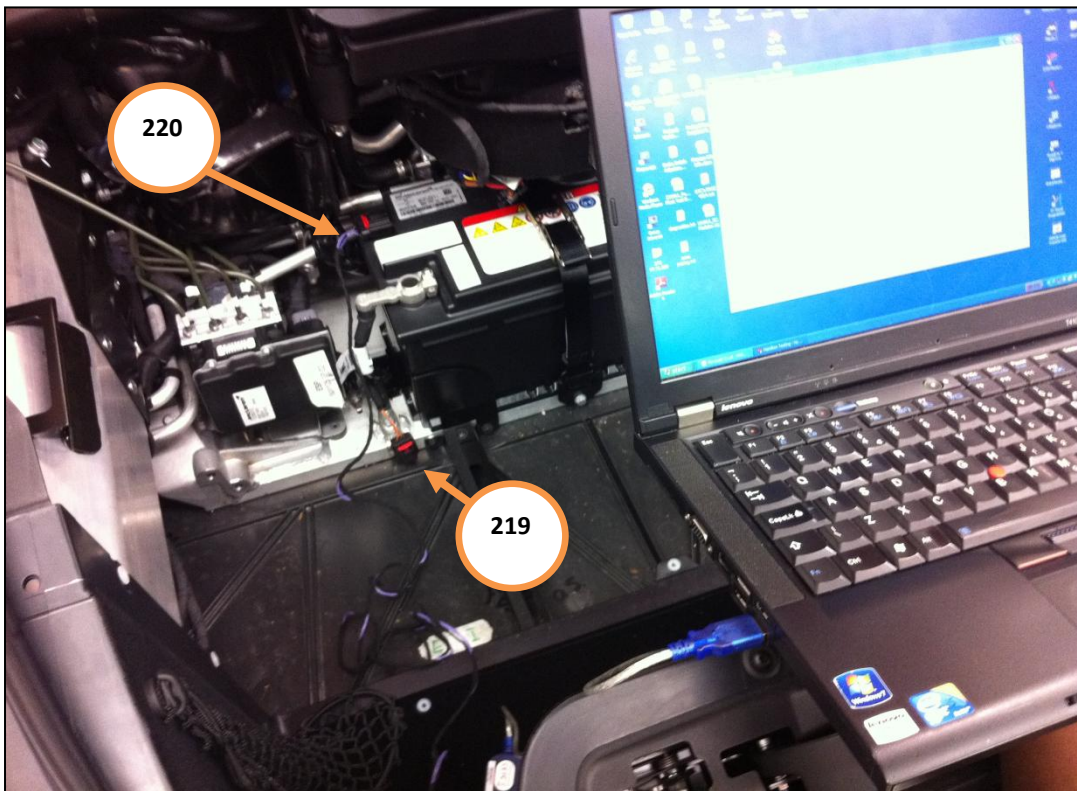
With the battery connected (either directly or via a USB to Serial converter) the following process should be carried out to program a battery. If any problems occur, please refer to previous sections within this document as this intended only as a quick reference during programming.

Care point: Text <u>underlined</u> is to be entered manually. Text in **bold** is the response from the battery. Text in *Italics* is an instruction to the user.

(Hit any key to wake battery)

A123>wakeup by: RS232

<u>read fw-rev</u>   *(hit enter)*

fw-rev 2.1.7, 2.01

<u>download</u>   *(hit enter)*

CCCC

Go to 'Transfer' → "Send File.."

Browse for file "Hamilton_core_2_1_9.hex"

Select 'Protocol' to be 'Xmodem'

Press 'OK' and file will begin to download

Once complete, battery will reboot and display;

A123>wake up by: no one

read fw-rev   *(hit enter)*

fw-rev 2.1.9, 2.01

write access 1109   *(hit enter)*

OK

write lin-records 0   *(hit enter)*

OK

write lin-maint 1   *(hit enter)*

OK

read lin-records   *(hit enter)*

lin-records 00e0

read lin-faults   *(hit enter)*

lin-faults 0000

The battery is now successfully programmed. The programming lead can be disconnected and the vehicle harness connector can be reconnected to the battery.

INSTALLATION :

188.   Install components in reverse order.

Care point: It is necessary to perform all function checks fully.

GENERAL FUNCTION CHECKS

189.   Perform the following general function checks:

AIRBRAKE

- Select Active Button – Depress Aero button, ensure airbrake deploys to low level position.
- Remain in Active mode– Depress and hold Aero for approximately 10 seconds. The airbrake should retract slowly.

Care point: Airbrake function check has to be performed before checking PCCU function check.

PCCU (ENGINE RUNNING)

Mode Changes:

- Launch mode- Ensure this function can be activated and aborted. **Please note**: This is a static vehicle check. The physical deployment of launch control does not need to be tested. The throttle should not be depressed.
- Handling mode –switch between Normal, Sport, and Track; ensure the cluster updates with the correct mode selection and that you hear the suspension pressurise for each mode.
- Powertrain mode - switch between Normal, Sport, and Track, ensure the cluster updates with the correct mode selection.

- Winter mode- Ensure this function can be selected.

TRANSMISSION AND IMMOBILISER

- Brake Pedal Depressed – Select "D" wait for 5 seconds, confirm a forward gear is indicated in the cluster window, Select "R" wait for 5 seconds, confirm "R" indicator in cluster window, select "N" wait for 5 seconds, confirm neutral position in cluster window.
- Active Panel selected – depress Manual button and confirm M in cluster window.

190.   Log results on Function check table:

GENERAL CHECKS	RESULTS
Check electronic key locks and unlocks the vehicle, including the fuel flap, at a range of just over 3 meters.	Ok / Not Ok
Check vehicle powers down correctly by ensuring the instrument cluster and Electronic Park Brake is no longer illuminated after 60 seconds. The stop/start button should not be illuminated and the lock button on the centre console should flash.	Ok / Not Ok
Check side windows are calibrated and one touch is operational (If not use MDS and enter the Diagnostic Toolbox and access the Door Module. Access the Sequences section and carry out window calibration.	Ok / Not Ok
Check time and date are correct. (Set correct time and date if not).	Ok / Not Ok
Check that it is possible to open and close the side doors with the emergency release cables.	Ok / Not Ok
Check panic alarm functions by pressing and holding the hazard button.	Ok / Not Ok
Check bonnet release function.	Ok / Not Ok
Check bonnet light function.	Ok / Not Ok
Check battery health on vehicle start up.	Ok / Not Ok
Check/ correct tyre pressures before test drive.	Ok / Not Ok
Check doors open on unlock.	Ok / Not Ok
Check manual luggage release	Ok / Not Ok
Check interior lighting functionality.	Ok / Not Ok
Check manual key release (inc. short drop).	Ok / Not Ok
Check 'one touch' functionality on driver window.	Ok / Not Ok
Confirm brake pedal is firm.	Ok / Not Ok
Check internal lock/unlock functionality.	Ok / Not Ok
Check steering lock to lock whilst static. Listen for excess noise/ knocking and confirm steering 'weight' is okay.	Ok / Not Ok
Check for warning lights remaining on.	Ok / Not Ok
Check rev counter goes through test cycle on start up.	Ok / Not Ok
Check "loud mode" is operational on start up.	Ok / Not Ok

When vehicle is locked and asleep go up to vehicle and swipe the driver's door latch, with key(s) in pocket. Depress the brake pedal and push the start button once. Vehicle should start first time. Perform again in reverse order.	Ok / Not Ok
Check all exterior lighting functions are operational, including brake lights	Ok / Not Ok
Check mirror adjustment function	Ok / Not Ok
Check wiper functionality at all speeds.	Ok / Not Ok
Check wiper parks correctly.	Ok / Not Ok
Check windscreen washers function.	Ok / Not Ok
Check headlamp washers are functional.	Ok / Not Ok
Check driver's seat reach adjust. (Adjust to maximum positions)	Ok / Not Ok
Check passenger seat reach adjust. (Adjust to maximum positions)	Ok / Not Ok
Check driver's seat back reach adjust. (Adjust to maximum positions)	Ok / Not Ok
Check passenger seat back reach adjust. (Adjust to maximum positions)	Ok / Not Ok
Check driver seat height adjust. (Adjust to maximum positions)	Ok / Not Ok
Check passenger seat height adjust. (Adjust to maximum positions)	Ok / Not Ok
Check seat/bulkhead interference.	Ok / Not Ok
Check steering column reach adjustment.	Ok / Not Ok
Check comfort entry (where applicable) is functioning.	Ok / Not Ok
Check active panel is functional	Ok / Not Ok
Check mirror memory (inc reverse dip) is operational.	Ok / Not Ok
Check functionality of Electronic Park Brake	Ok / Not Ok
Check Electronic Park Brake deactivates when pulling away.	Ok / Not Ok
Check front and rear parking sensors are operational.	Ok / Not Ok
Convert speed from MPH to KPH and visa-versa within instrument cluster.	Ok / Not Ok
Enable "silent lock" to confirm no lights or sound on key lock/unlock	Ok / Not Ok
Check all fluid levels; inc brake fluid and coolant	Ok / Not Ok
Check HVAC Hi/Lo functionality by manually turning down the blower speed to Off step by ensuring that you recognise a step change in blower output at each increment i.e. 9-8-7 etc. Change setting to Lo. Check operation through this process.	Ok / Not Ok
Check HVAC Defrost functionality by manually turning down the blower speed to Off step by step ensuring that you recognise a step change in blower output at each increment i.e. 9-8-7 etc. Change setting to defrost. Check operation throughout this process.	Ok / Not Ok
Check HVAC Duel zone functionality. Select L/Mono/Auto. Turn passenger controller to Hi. Turn driver's controller to Hi. Turn passenger controller to Lo. Check operation throughout this process.	Ok / Not Ok

Check HVAC auto mode can be selected. Check AC switch on/off. Check re-circ mode is functioning	Ok / Not Ok
Reset to defaults by using default vehicle command	Ok / Not ok

Perform vehicle test drive of around 10 miles noting the following:

TEST DRIVE	RESULTS
Check speedometer operates normally.	Ok / Not Ok
Check paddle shift in manual mode operates correctly.	Ok / Not Ok
Check ISG is functioning. Check sound from ISG alternates between powertrain modes N/S/T	Ok / Not Ok
Check quality of gearshift in automatic and manual mode is suitable.	Ok / Not Ok
Check launch and pull away smoothness on pull away, creep and hill hold.	Ok / Not Ok
Check that vehicle is powerful through the rev range with a strong exhaust note.	Ok / Not Ok
Check throttle response is sensitive to driver inputs without being overly so.	Ok / Not Ok
Check airbrake can be observed functioning	Ok / Not Ok
Check Aero button can be switched on and off and airbrake can be observed in Aero mode.	Ok / Not Ok
Check airbrake can be observed functioning from Aero mode.	Ok / Not Ok
Check for steering feel; ratio directness/position; on centre feel; bump steer; parking weight.	Ok / Not Ok

After the test drive perform the following:

POST TEST DRIVE	RESULTS
Visual inspection of engine bay.	Ok / Not Ok
Visual inspection of fluid leaks and fluid levels.	Ok / Not Ok
Visual inspection of coolant reservoir level once vehicle has cooled.	Ok / Not Ok
Check brake fluid levels again	Ok / Not Ok
Check tyre pressure again after road test.	Ok / Not Ok
Check battery health has risen or remained the same after compared to before the test drive.	Ok / Not Ok
Attach MDS. Once a quick test has been performed record all DTC's. Note the fault codes stored and note them down on the chart named "Stored Diagnostic Trouble Codes after test drive". Clear down DTC's after this has been completed.	Ok / Not Ok

FUNCTION CHECK TABLE

ITEM	PASSED FUNCTION CHECK Y/N	COMMENTS IF FAILED
PCCU	Yes / No	
Airbrake	Yes / No	
Gearbox/Immobiliser	Yes / No	
General Checks	Yes / No	

TEST DRIVE TABLE

TEST DRIVE CHECKS	PASSED CHECKS Y/N	COMMENTS IF FAILED
Test Drive	Yes / No	
Post Test Drive	Yes / No	

STORED DIAGNOSTIC TROUBLE CODES AFTER TEST DRIVE		

Please Contact your Regional Aftersales Manager if you have any queries relating to the information contained within this bulletin.

WARRANTY INFORMATION

DESCRIPTION	RESOLUTION CODE	TOTAL REPAIR TIME
Perform mechanical updates and software updates	MOM30109A11A9901	12.00

PARTS INFORMATION

PART DESCRIPTION	PART NUMBER	QUANTITY	ORDER PROCESS
N/A	N/A	N/A	N/A

Parts and tooling will be supplied directly from the McLaren Production Centre at no charge to the dealer. They are not a current stock item and should not be ordered via Unipart at this stage.

SOFTWARE TEST RESULTS TO BE SENT BACK WITH THE COMPLETE WORK PACKAGE

VIN Number: _____

Registration Number: _____

Mileage: _____

List the DTC's that were stored after the work package was created but before work commenced:

STORED DIAGNOSTIC TROUBLE CODES		

Record the force needed in order illuminate the brake lights and record the pressure on the brake lights deactivate on the chart below:

Master Cylinder Pressure (BAR) to Activate the brake lights	Master Cylinder pressure (BAR) to deactivate the brake lights
1	1
2	2
3	3

Enter the HVAC motor range settings in the chart below. If results were out of range record the entire HVAC settings:

HVAC SETTINGS	RESULTS
Calibration Attempts	
Motor 1 Range Min	
Motor 1 Range Average	
Motor 1 Range Max	
Motor 1 Range Min Temp	
Motor 1 Range Max Temp	
Motor 2 Range Min	
Motor 2 Range Average	
Motor 2 Range Max	
Motor 2 Range Min Temp	
Motor 2 Range Max Temp	
Motor 3 Range Min	
Motor 3 Range Average	
Motor 3 Range Max	
Motor 3 Range Min Temp	
Motor 3 Range Max Temp	
Motor 4 Range Min	
Motor 4 Range Average	
Motor 4 Range Max	
Motor 4 Range Min Temp	
Motor 4 Range Max Temp	
Motor 5 Range Min	
Motor 5 Range Average	
Motor 5 Range Max	
Motor 5 Range Min Temp	
Motor 5 Range Max Temp	
Motor 1 Range Current	
Motor 2 Range Current	
Motor 3 Range Current	
Motor 4 Range Current	
Motor 5 Range Current	
Motor 1 Range Current _1	
Motor 5 Range Current _1_1	
Motor 2 Range Current_1	
Motor 3 Range Current _1	
Motor 5 Range Current _1	

Enter any stored ECM DTC' in the chart below:

STORED ECM DTC'S	

Enter mA output for both quiescent battery drain tests on the chart below:

VEHICLE UNLOCKED AND ASLEEP/MA	VEHICLE LOCKED AND ASLEEP/MA

Enter results of the general function check in the chart below:

ITEM	PASSED FUNCTION CHECK Y/N	COMMENTS IF FAILED
PCCU	Yes / No	
Airbrake	Yes / No	
Gearbox/Immobiliser	Yes / No	
General Checks	Yes / No	

Enter the results of the test drive checks:

TEST DRIVE CHECKS	PASSED CHECKS Y/N	COMMENTS IF FAILED
Test Drive	Yes / No	
Post Test Drive	Yes / No	

Enter any stored DTC's after the test drive:

STORED DIAGNOSTIC TROUBLE CODES AFTER TEST DRIVE		

Name (Print): _____

Signed_____   Date_____

REF: 8.2.2