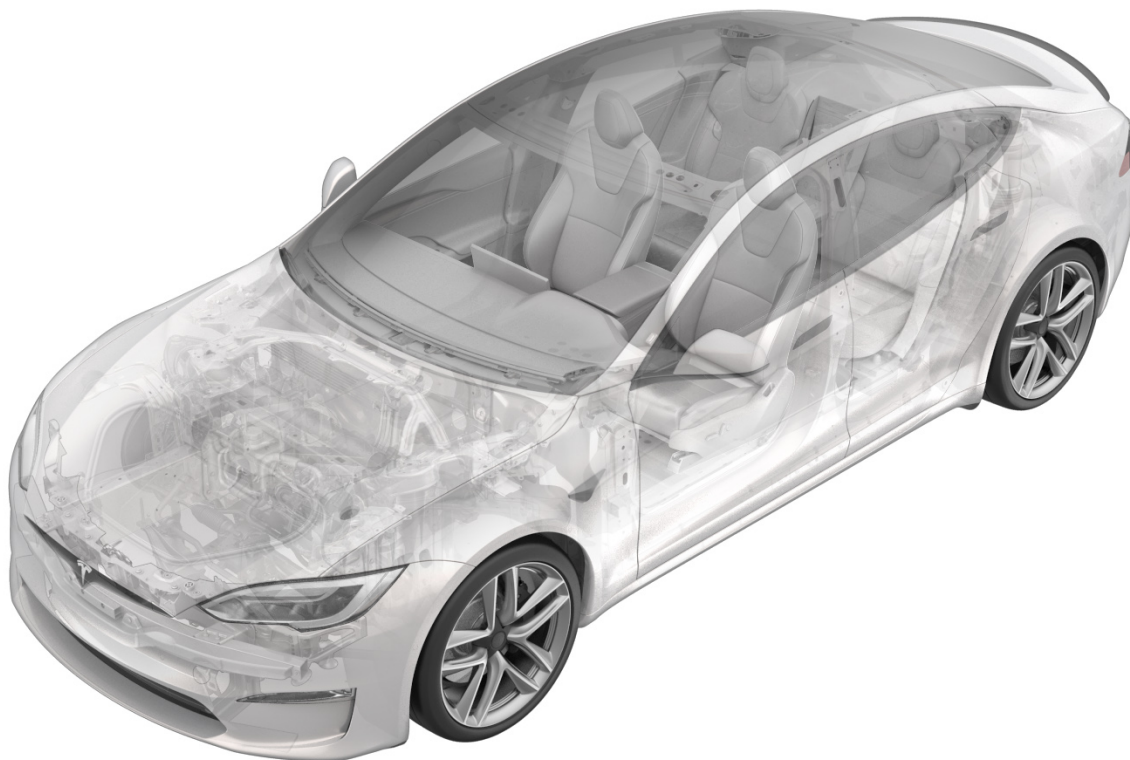


Last modified: 02/02/2022 08:01:43

## Insulator - Dash (Remove and Replace)



Correction code 15308402

**NOTE:** Unless otherwise explicitly stated in the procedure, the above correction code and FRT reflect all of the work required to perform this procedure, including the linked procedures. **Do not stack correction codes unless explicitly told to do so.**

**NOTE:** See to learn more about FRTs and how they are created. To provide feedback on FRT values, email [LaborTimeFeedback@tesla.com](mailto:LaborTimeFeedback@tesla.com).



### Warning

This procedure is a DRAFT, although it has been validated. Warnings and Cautions might be missing. Follow safety requirements and use extreme caution when working on or near high voltage systems and components. Provide corrections and feedback to [ServiceDevelopment@teslamotors.com](mailto:ServiceDevelopment@teslamotors.com).

1. Turn Off the AC and Blower motor
-

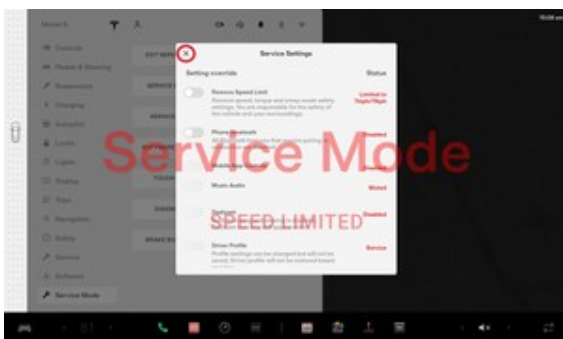
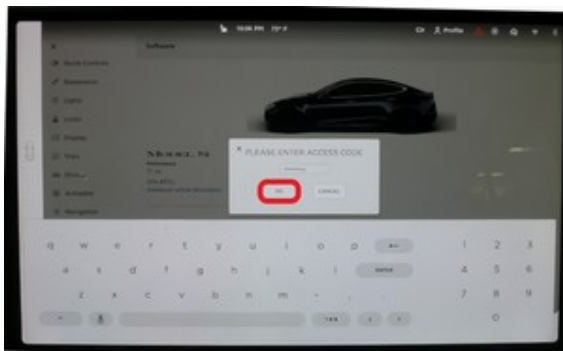
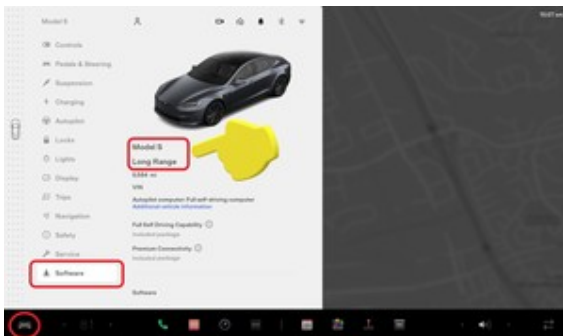


## 2. Place vehicle in service mode via UI



### Note

Select Controls > Software , Touch and hold "Model" for 2 seconds then release, Use the screen keyboard to type "service" into dialog box and select OK button, Select "X" at upper left corner to exit 'Service Settings' dialogue box

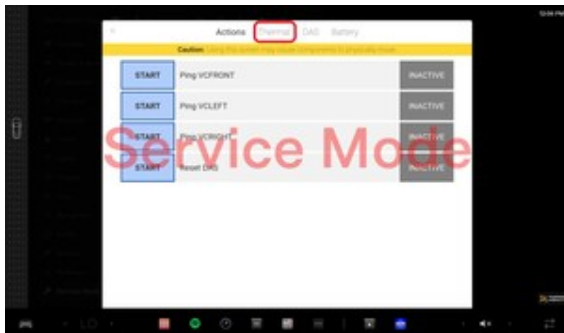
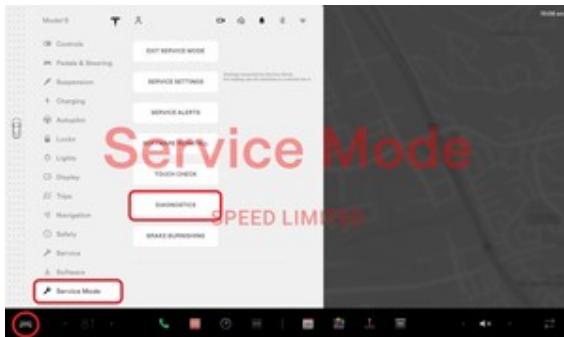


## 3. Access thermal system routines using the UI



### Note

Select quick controls > Service mode > Diagnostics > Thermal, Authorize routines by holding right turn signal, depressing brake pedal for 10 seconds with key on phone dock

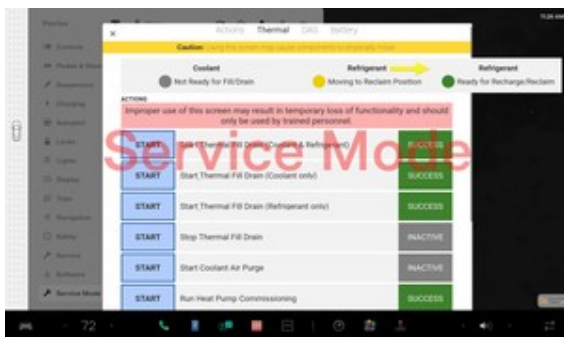
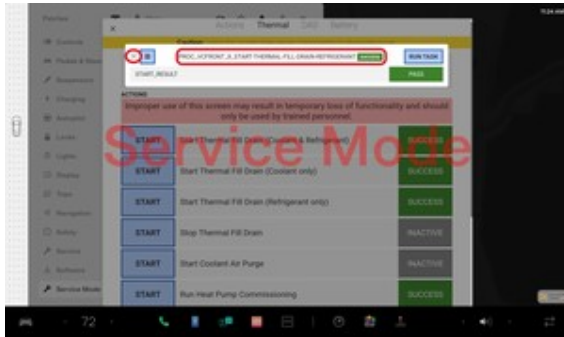
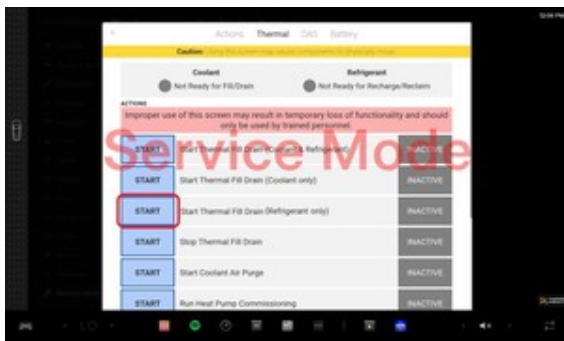


4. Select 'Start' button at 'Start Thermal Fill Drain (Refrigerant Only)' using the UI and 'PROC\_VCFRONT\_X\_START-THERMAL-FILL-DRAIN-REFRIGERANT' window will appear



### Note

Select 'X' at top left of window to close once complete, Verify refrigerant status moves from yellow 'Moving to Reclaim Position' to green 'Ready for Recharge/Reclaim' status, Thermal Fill Drain routine has a 5 hour time limit, After 5 hours EXV's will close and routine must be performed again



## 5. Open hood



### Note

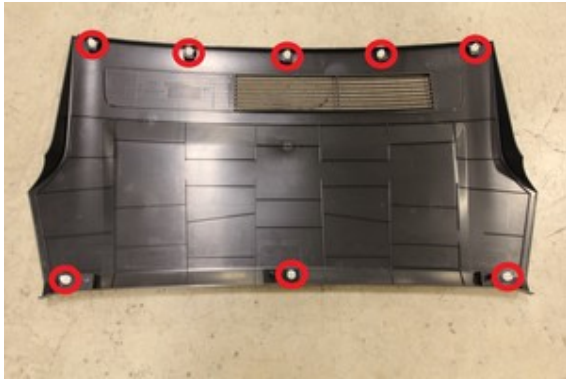
Via Center Display > Controls > Frunk Open

## 6. Remove rear underhood apron



### Note

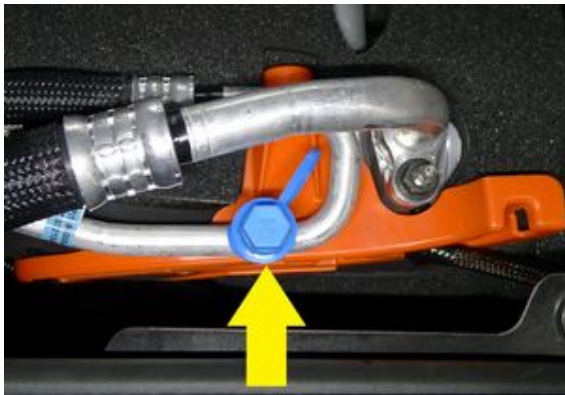
8x clips



7. Remove caps from low side and high side AC ports

**Note**  
2x caps



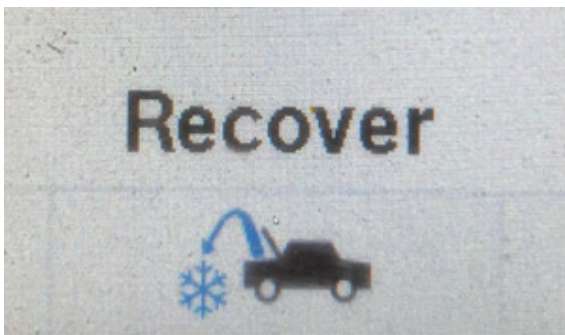


## 8. Connect hoses to vehicle and perform A/C recovery

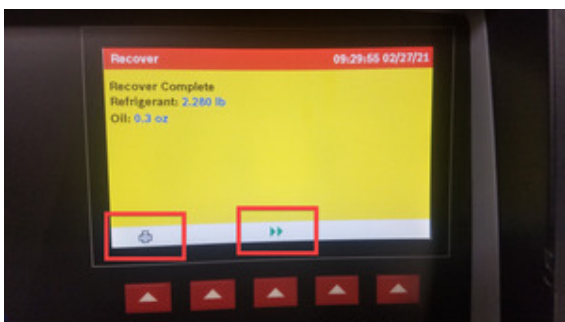
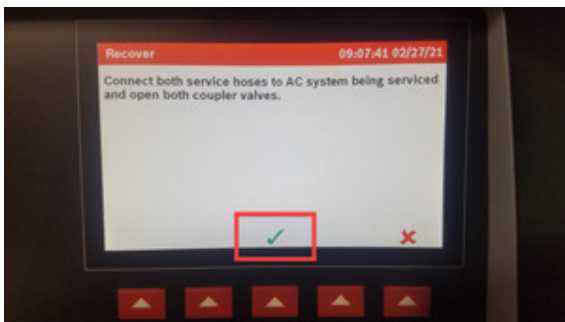
### **Note**

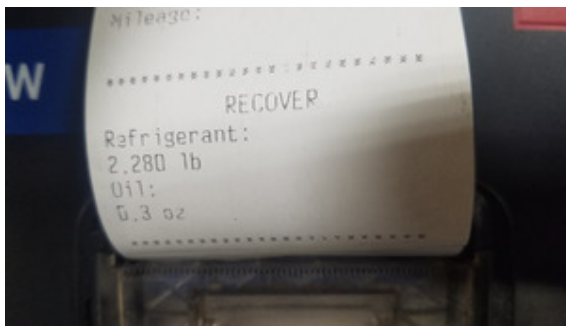
Connect couplers to vehicle, Note the amount of refrigerant and oil recovered, mark oil drain bottle oil level (use a piece of tape marking the fluid level), Open couplers by turning clockwise, Using Main Menu > Recover > Verify hose connection, Machine will chime once process is complete, Vehicle may be left unattended, Note or print the amount of refrigerant and oil recovered, Refrigerant recovered should be ~2.24 lb (1.02 kg), Oil recovered should be ~0.3 oz (8.87 mL), If drained oil level increased more than 1.01 oz (30 mL) refer to drained oil loss chart

<https://toolbox.teslamotors.com/articles/353700>









9. Remove the center console. See [Center Console Assembly \(Remove and Replace\)](#).

10. Remove AC hoses from vehicle



11. Remove LH underhood apron

**Note**  
10x clips





12. Remove RH underhood apron

**i Note**  
10x clips



13. Release LH wiper arm hose nozzle

- i Note**  
1x hose



**14. Remove LH wiper arm nut cover**

- i Note**  
1x cover



**15. Remove LH wiper arm nut and release assembly**

- i Note**  
1x nut, 15mm, 26 Nm



**16.** Release RH wiper arm hose nozzle

**i Note**  
1x hose



**17.** Remove RH wiper arm nut cover

**i Note**  
1x cover



**18.** Remove RH wiper arm nut and release assembly

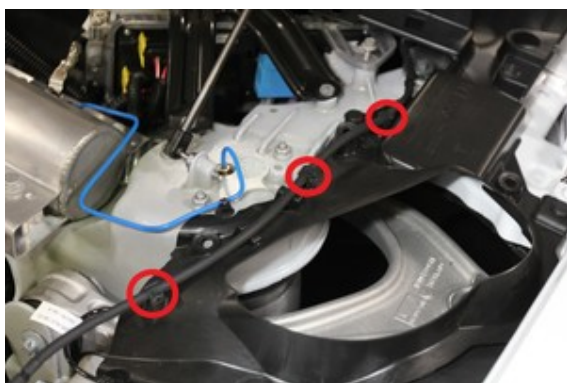
**i Note**  
1x nut, 15mm, 26 Nm



**19.** Release washer hose nozzle by LH shock tower cover

**i Note**  
1x hose, 3x clips





## 20. Remove LH shock tower cover



### Note

3x push clips, 1x fir tree clip



## 21. Remove RH shock tower cover



### Note

3x push clips, 1x fir tree clip



## 22. Remove wiper cowl screen panel



**Note**

4x push clips, 2x end tabs

**23. Remove fasteners securing LH V-brace and remove assembly****Note**

3x bolts, 10mm, 18 Nm, 1x nut, 10mm, 9 Nm



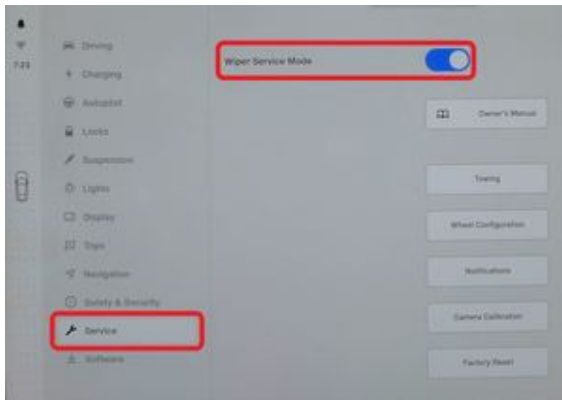


24. Using center display, place wipers into "Service Mode"



**Note**

via Controls > Service > Wiper Service Mode, If wiper module is not in service mode the RH pivot arm will not clear the V Brace crossmember during removal

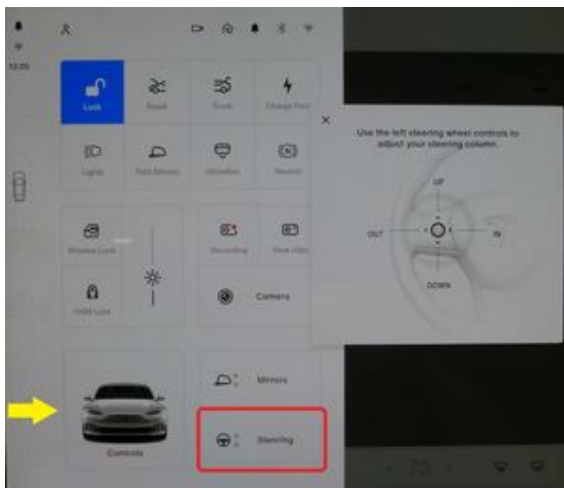


25. Adjust steering column fully rearward and fully down



**Note**

Via UI > Quick Controls > Steering Wheel, Use left steering wheel scroll wheel to adjust steering column

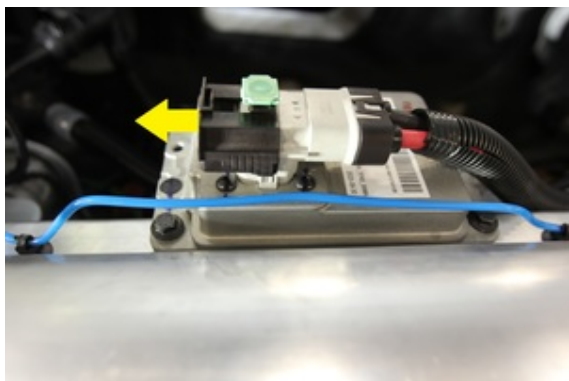
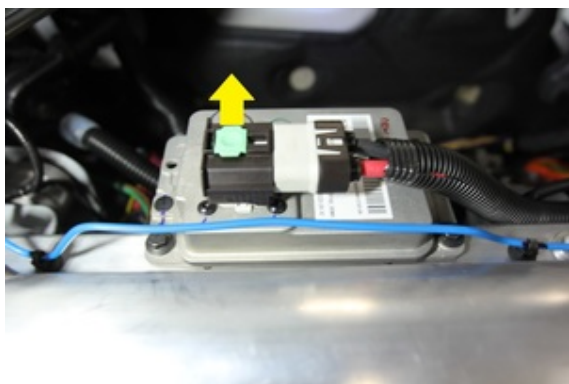
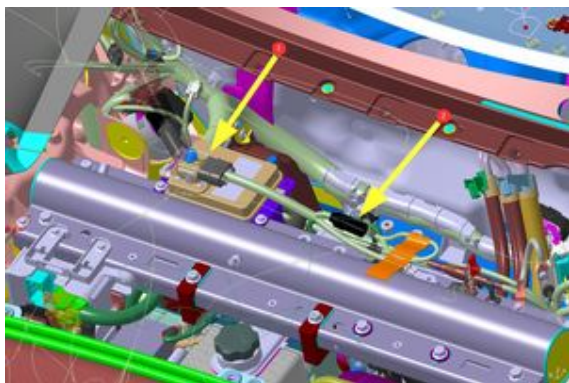


## 26. Power off vehicle from center display

- Note**  
Via Controls > Safety & Security > Power Off

## 27. Disconnect LV battery connector and First Responder Loop

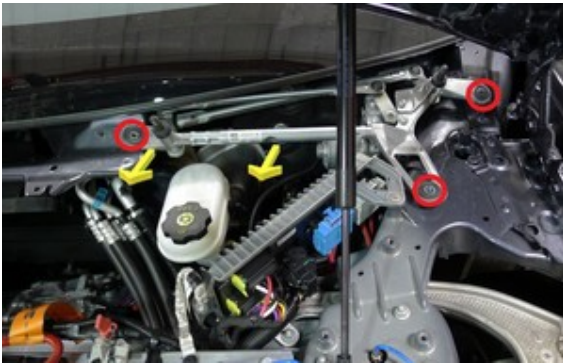
- Note**  
2x connectors, Lift up and release green locking tab, Pull black connector lock outwards to release connection



28. Remove wiper module

 Note

3x bolts, 10mm, 8 Nm, 1x connector, Rotate module forward and up to access connector,  
Observe LH wiper arm pivot during removal to avoid damage to windshield



29. Release upper steering column bracket IP carrier bolts at bulkhead

 Note

2x bolts, 13mm, 27Nm



**30. Remove Penta HVAC line from HVAC assembly**



**Note**

2x bolts, 13mm, 22 Nm





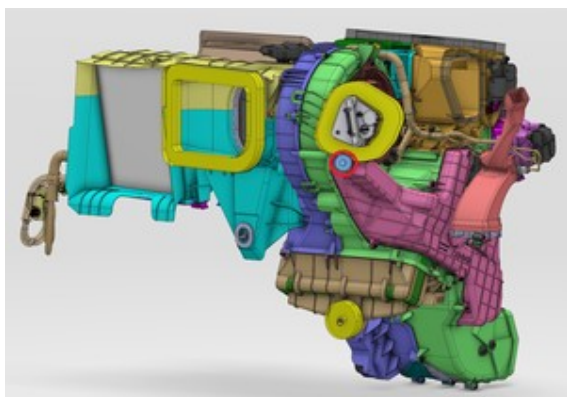


**31.** Release HVAC assembly bolt at bulkhead



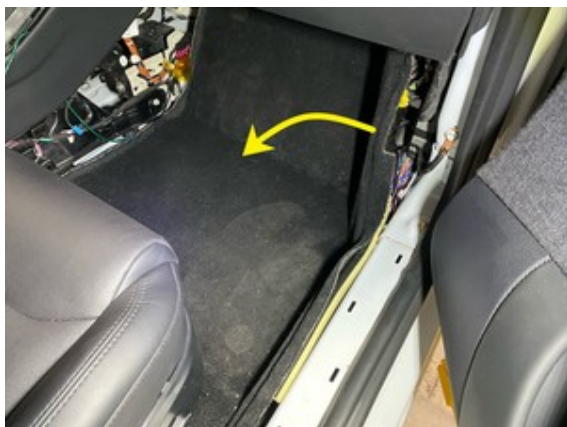
**Note**

1x bolt, 10mm, 8 Nm



**32.** Fold RH front cabin carpet aside for access





**33. Release harness from RH footrest panel**

**i Note**  
1x clip



**34. Remove RH footrest panel**

**i Note**  
2x bolts, 10mm, 5 Nm, 1x nut, 10mm, 5 Nm





35. Remove the IP sub-assembly. See Sub-Assembly - Instrument Panel (Remove and Install).

36. Remove driver IP air vent duct



**Note**

2x rivets, 1x connector, Slide outboard and up out of HVAC unit assembly



37. Release spring clip securing driver air bag assembly to steering wheel and pull driver air bag assembly away from steering wheel



**Note**

2x spring clips, 2x datums, Press the spring simultaneously from two access holes to release, Access holes located at 4 and 8 o'clock position, Do not insert tool too far as air bag connector could be damaged





38. Disconnect driver air bag connector and remove driver air bag assembly

**Note**  
1x connector, 2x tabs



39. Disconnect steering wheel connector

**Note**  
1x connector



40. Remove bolt that secures the steering wheel to the column

**Note**

1x patch bolt, 10mm allen, 80 Nm, Discard after removal



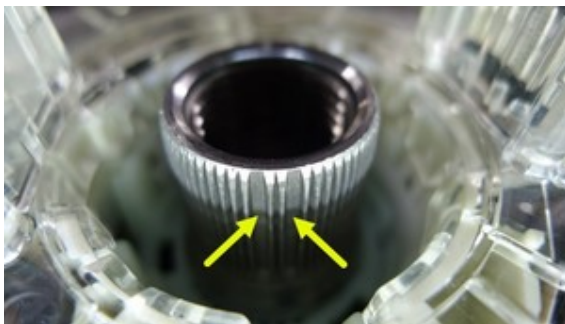
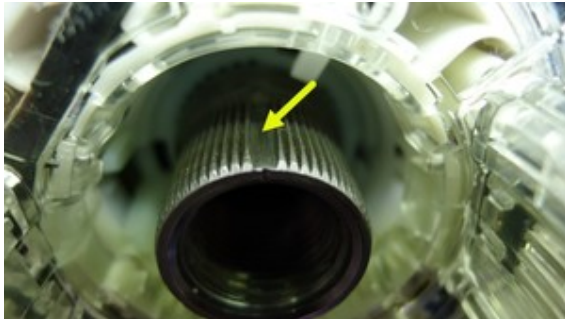
41. Remove steering wheel

**Note**

Note that the steering wheel is splined to the column





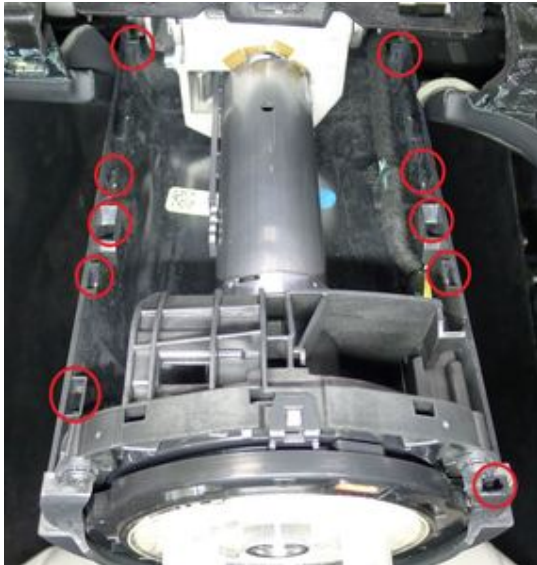


42. Pull upward to release steering column upper shroud from lower shroud

**Note**  
6x clips, 4x datums





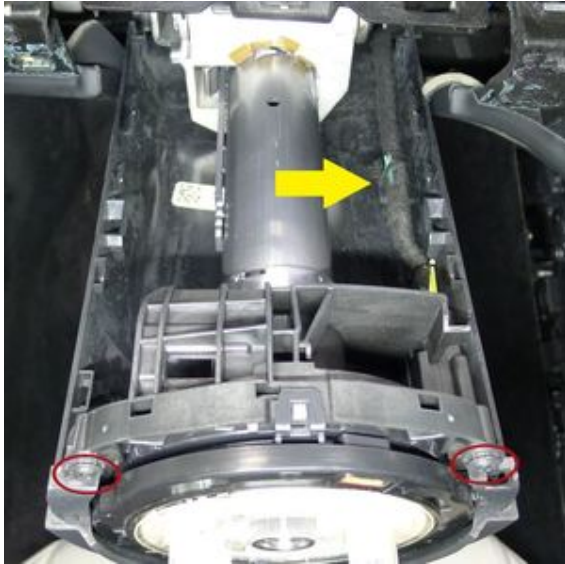


#### 43. Remove lower shroud to steering column



##### Note

2x screws, T20, 1.5 Nm, 1x clip, 1x datum, Slide lower shroud rearward to release datum





#### 44. Remove lower instrument panel assembly



##### Note

3x screws, T20, 3 Nm, 8x tabs, Remaining screws located at bottom of assembly, Release assembly and carefully guide over upper steering column





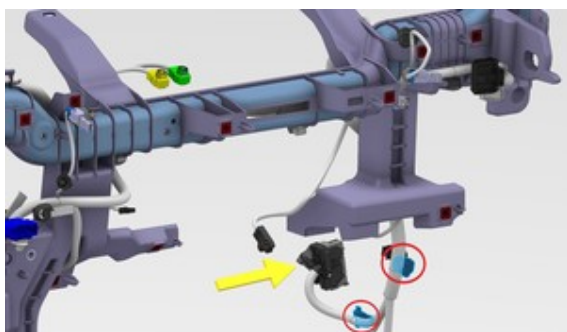
45. Release IP harness from J12 x055 Dash connector at right body controller



**Note**

2x clips, 1x connector, Release lock then remove





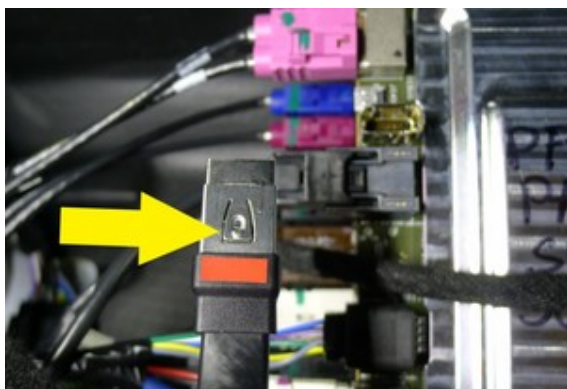
#### 46. Release connector to gaming MCU

##### **i** Note

1x connector, Depress lock on underside of connector before pulling out of socket, Possible damage to PCBA may occur if removed without releasing lock first







47. Release IP harness connectors at LH side of car computer gaming board



**Note**

5x connectors, Release locks on connectors before removal







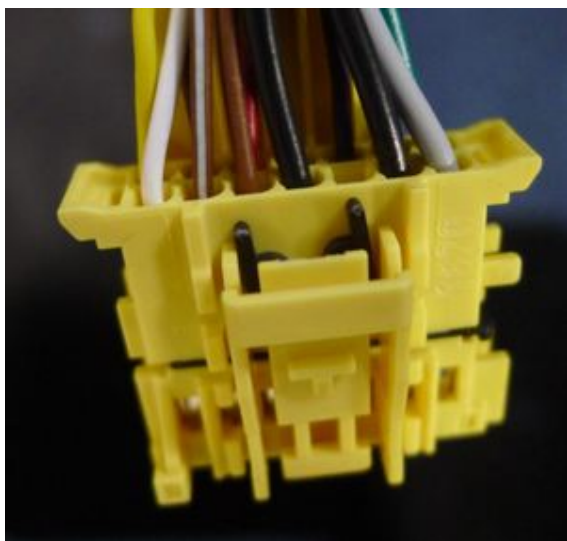
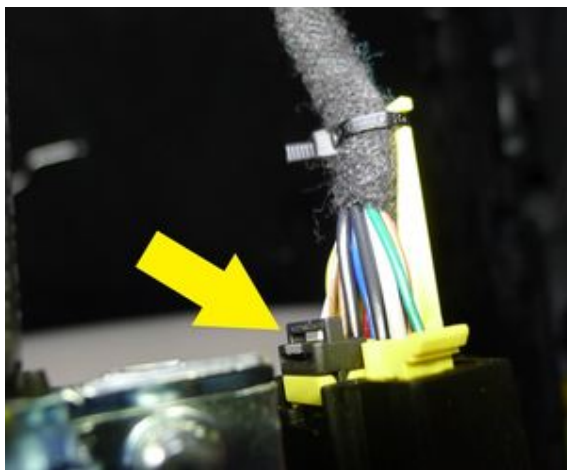
#### 48. Release IP harness from RH toeboard bracket

**Note**  
3x clips



#### 49. Disconnect steering column control module assembly connector

**Note**  
1x connector, Remove retaining clip on the connector, release connector, then remove the remaining broken clip from connector, Discard retaining clip after removal, Originally installed clip is black, Replacement clip is orange

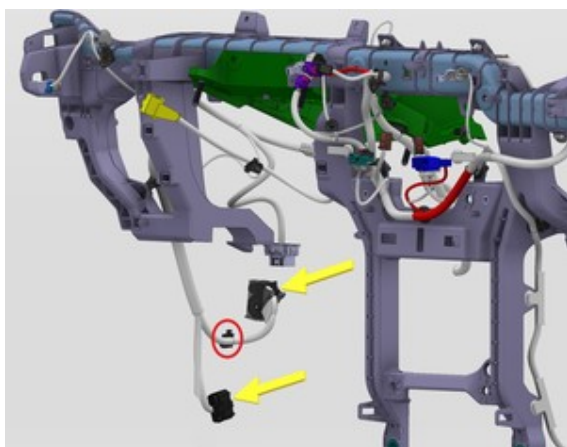


50. Release IP harness from J12 x035 Dash connector at left body controller and connector x947F



**Note**

1x clip, 2x connectors, Release lock then remove



## 51. Release steering column harness



### Note

1x connector, 1x clip





## 52. Release upper steering column from steering column bracket

### **i** Note

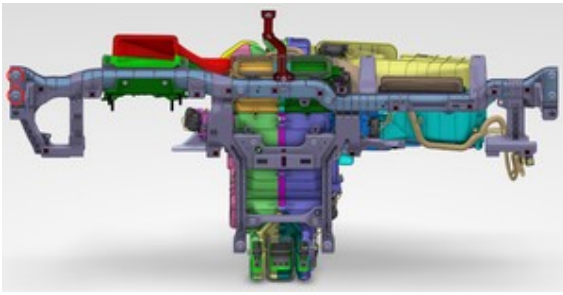
4x nuts, 13mm, 15 Nm, Rotate and set aside



## 53. Release LH cross car beam assembly

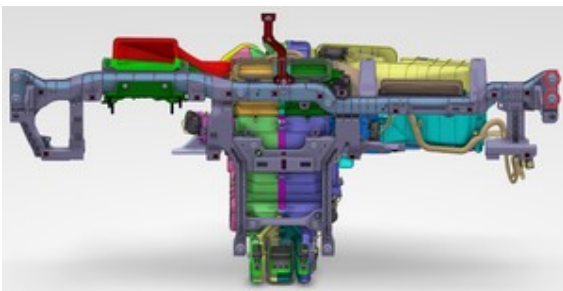
### **i** Note

2x bolts, 13mm, 27 Nm



#### 54. Release RH cross car beam assembly

**Note**  
2x bolts, 13mm, 27 Nm



#### 55. Release cross car beam assembly from toeboard bracket

**Note**



2x bolts, 13mm, 27 Nm

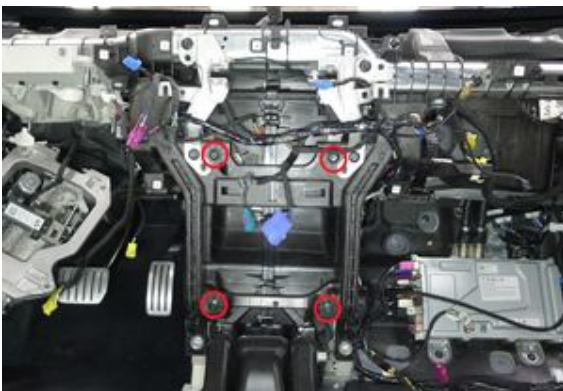
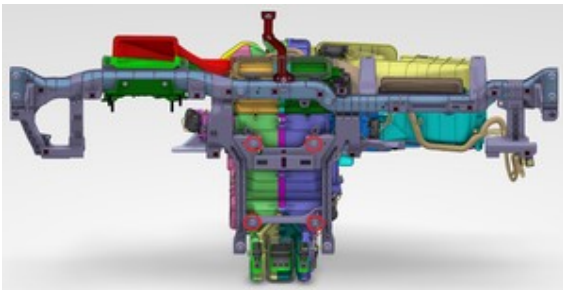


56. Release cross car beam assembly from HVAC unit



**Note**

4x bolts, 10mm, 8 Nm



## 57. Release IP cowl link

### Note

2x bolts, 10mm, 6 Nm, Only remove the bolts from the IP carrier and HVAC box

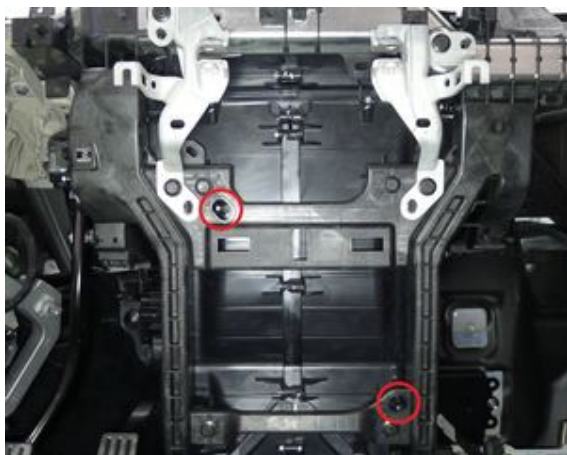
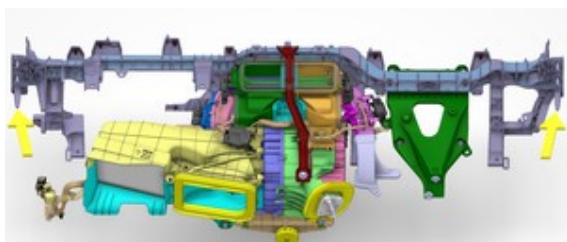


## 58. Release cross car beam assembly from body and HVAC unit

### Note

4x datums





59. Remove cross car beam assembly with IP harness from vehicle



**Note**

Avoid contact with seats and inner door panel, Recommend assistance as required



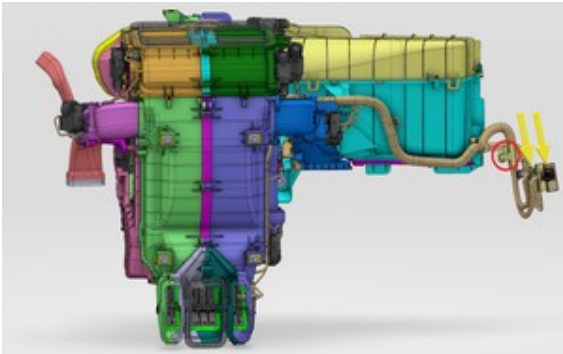
60. Release HVAC blower x059 connector and HVAC case x058 connector from right controller



**Note**

1x clip, 2x connectors





#### 61. Remove center console HVAC duct

**Note**  
1x brush clip

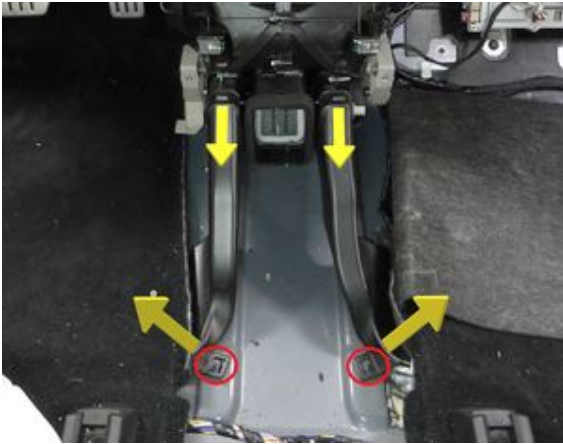


#### 62. Release LH and RH rear vent ducts from HVAC assembly

**Note**



2x tabs, Release ducts from tabs upward and release from HVAC assembly rearward

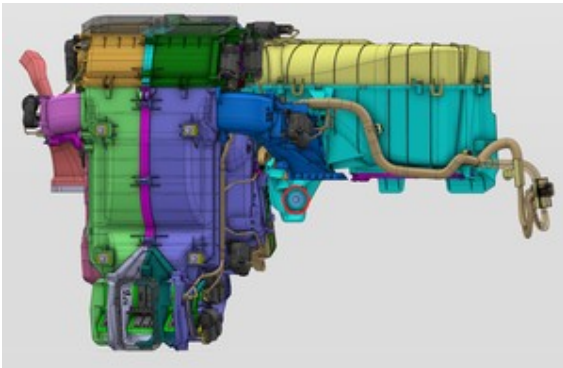


### 63. Release HVAC assembly from bulkhead



#### Note

1x bolt, 10mm, 8 Nm





#### 64. Remove HVAC assembly from vehicle



##### Note

Remove HVAC assembly towards rear of vehicle, Rotate counter clockwise and remove out through passenger front door, Recommend assistance





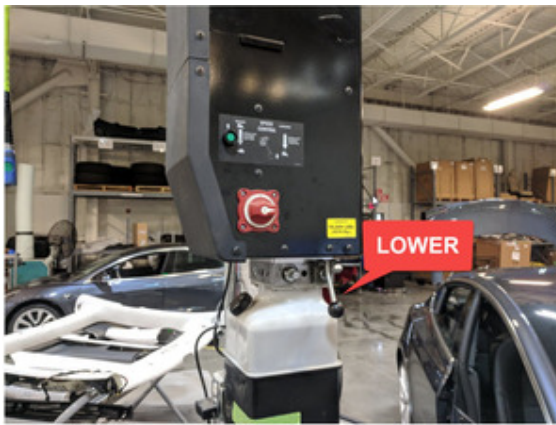
65. Raise vehicle fully and lower lift onto locks



**Note**

Set vehicle to comfortable working height, Make sure there's an audible click of the locks on both sides before lowering, otherwise vehicle may tilt to the side





66. Remove clips securing front aero shield

**Note**  
5x push clips



67. Remove bolts securing front aero shield and remove from vehicle

**Note**  
9x bolts, 10mm, 6 Nm



68. Release clips securing wheel house liner to front skid plate

**Note**  
4x clips

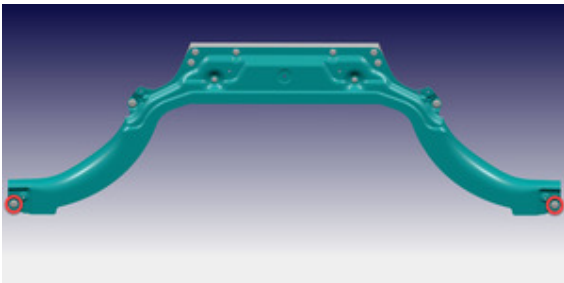


69. Remove bolts securing front skid plate to body sill

**Note**



2x bolts, 15mm, 30 Nm



**70.** Remove bolts securing front skid plate to body casting



**Note**

2x bolts, 15mm, 60 Nm



**71.** Remove bolts securing front skid plate to front subframe and remove skid plate



**Note**

4x bolts, 15mm, 70 Nm, 2x bolts, 10mm, 10 Nm



**72.** Remove bolt securing steering gear assembly to electric steering column



**Note**

1x bolt, 13mm, 30 Nm



**73.** Slide steering column upward to remove it from steering gear assembly

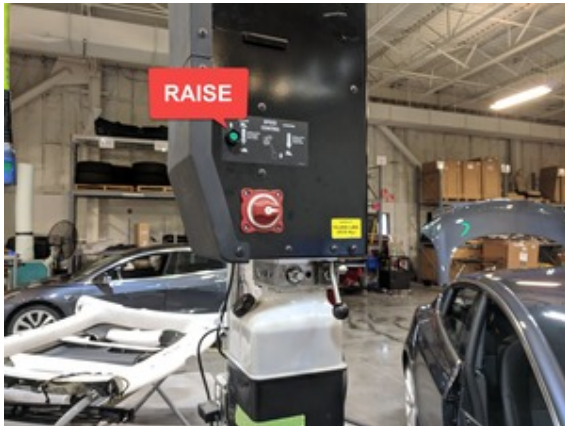


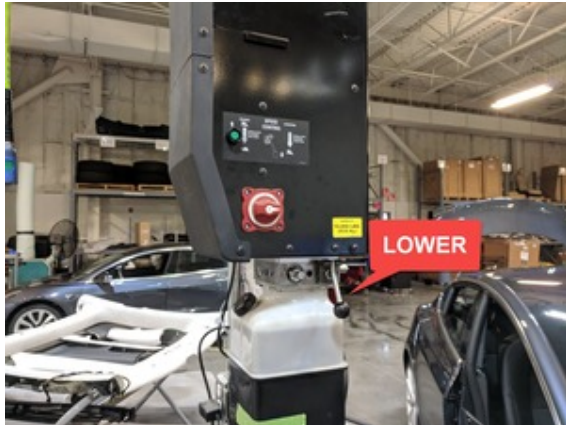
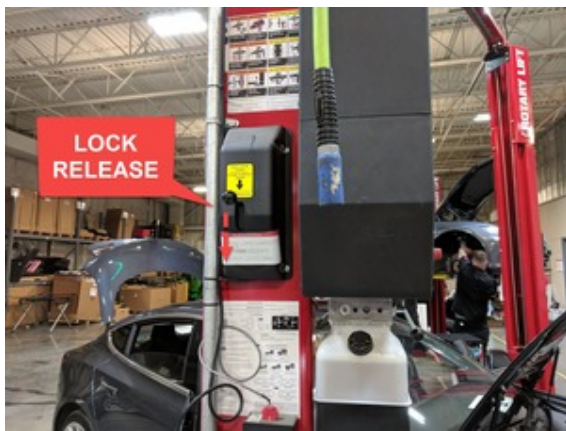
**74.** Lower vehicle until tires are touching the ground



**Note**

Raise lift off locks, then hold lock release lever to keep locks free while vehicle is lowered





## 75. Remove steering column



### Note

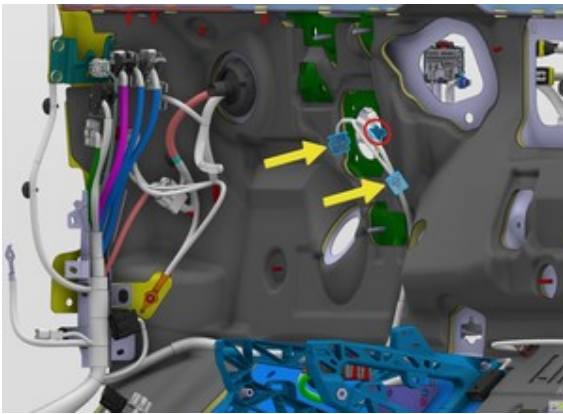
Recommend assistance, Release intermediate shaft dash boot, Guide lower steering shaft out through bulkhead while maneuvering upper steering bracket out driver's door



**76.** Release LH body harness from pedal assembly X252 and X107

**Note**

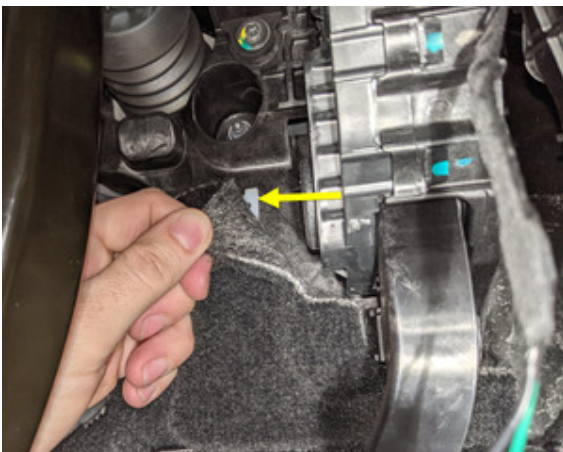
1x clip, 2x connectors, Do not push down on red tab, Pull to disengage lock, Pull again to release connector



**77.** Release front carpet from pedal assembly and fold down

**Note**

1x clip







**78.** Remove cotter clip from clevis pin on pedal assembly



**Note**

1x clip, Remove by hand



**79.** Remove clevis pin from brake pedal assembly



**Note**

1x pin, Wiggle brake pedal to assist pin removal



**80.** Remove pedal assembly from vehicle



### Note

5x nyloc nuts, 13mm, 16.5 Nm, Discard after removal



**81.** Fold LH front cabin carpet aside for access





## 82. Release LH body harness from body controller

### **i** Note

11x connectors, Release connector locks before removal



## 83. Release LH body harness A-Pillar wire guide

**Note**  
3x clips



#### 84. Remove LH body controller

**Note**  
1x nut, 10mm, 6 Nm, Discard nylon nut after removal, Carefully release LH controller from stud then lift upwards to release from tab and remove from vehicle



**85.** Release RH body harness from right body controller

**i Note**

11x connectors, 2x clips, Release locks on connectors before removal, Release clipped connectors to VC Right





## 86. Release RH body harness A-Pillar wire guide

**Note**  
3x clips



#### 87. Remove RH body controller

##### Note

1x nut, 10mm, 6 Nm, Discard nylon nut after removal, Carefully release RH controller from stud then lift upwards to release from tab and remove from vehicle





88. Release connections at LH side of AP motherboard and connectivity module of car computer

**i Note**

9x connectors, Release locks on connectors before removal



89. Release connectors at RH side of AP motherboard and entertainment motherboard

**i Note**

7x connectors, Release locks on connectors before removal



90. Install coolant hose clamps to coldplate hoses



**Note**

2x hoses, Place coolant absorbent material around the car computer







**91. Release coolant hoses from car computer coldplate assembly**



**Note**

2x spring locks, Install coolant plugs at both hoses and car computer



**92. Remove car computer from vehicle**



**Note**

2x bolts, 10mm, 7 Nm, 1x nut, 10mm, 8 Nm, Remove any residual coolant from vehicle





### 93. Release electrical connections from TASC 2.0 ECU

**Note**  
3x connectors



### 94. Remove fasteners securing TASC 2.0 ECU and remove from vehicle

**Note**  
3x nuts, 10mm, 6 Nm



**95. Release RH FEM harness**



**Note**

1x clip, 1x nut, 10mm, 9 Nm



**96. Release LH FEM harness**



**Note**

1x nut, 10mm, 9 Nm



**97. Release LH side dash insulator**

**Note**

2x cinch studs, Pull insulator off cinch studs, Guide LH FEM harness through opening in dash insulator, Guide lower dash insulator underneath LH body harness, Fold dash insulator inward clear of dash panel

**98. Release RH side dash insulator****Note**

2x cinch studs, Pull insulator off cinch studs, Guide RH FEM harness and car computer coolant hoses through openings in dash insulator, Fold dash insulator inward clear of dash panel





99. Release center dash insulator and remove from vehicle

**i Note**

1x cinch stud, 1x butyl patch, Release butyl patch from upper dash panel, Pull insulator off cinch stud, Remove dash insulator from vehicle







**100.** Install dash insulator into vehicle and secure center dash insulator

**i Note**

1x cinch stud, 1x butyl patch, Position dash insulator at center of vehicle, Secure onto cinch studs, Secure butyl patch to upper dash panel







#### 101. Secure RH side dash insulator



##### Note

2x cinch studs, Unfold dash insulator, Guide RH FEM harness and car computer coolant hoses through openings in dash insulator, Secure insulator onto cinch studs





## 102. Secure LH side dash insulator



### Note

2x cinch studs, Guide LH FEM harness through opening in dash insulator, Guide lower dash insulator underneath LH body harness, Secure insulator onto cinch studs



## 103. Secure LH FEM harness



### Note

1x nut, 10mm, 9 Nm



#### 104. Secure RH FEM harness

##### Note

1x clip, 1x nut, 10mm, 9 Nm



#### 105. Secure TASC 2.0 ECU to vehicle

##### Note

3x nuts, 10mm, 6 Nm



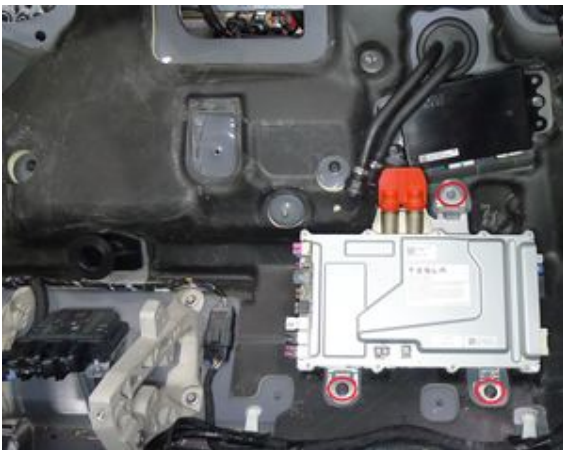
#### 106. Secure electrical connections to TASC 2.0 ECU

- Note**  
3x connectors



#### 107. Install car computer to vehicle

- Note**  
2x bolts, 10mm, 7 Nm, 1x nut, 10mm, 8 Nm, Install hose clamps after securing computer





## 108. Secure coolant hoses to car computer coldplate assembly

### **Note**

2x spring locks, Place coolant absorbent mats or rags around the car computer, Remove coolant plugs, Ensure spring locks engage and perform pull-push-pull test on each hose coupling



## 109. Remove coolant hose clamps

### **Note**

2x hoses, Remove absorbent material, Clean residual fluid, Inspect for leaks



## 110. Install connectors at RH side of AP motherboard and entertainment motherboard



- Note**  
7x connectors



**111.** Install connections at LH side of AP motherboard and connectivity module of car computer

- Note**  
9x connectors



**112.** Secure RH body controller

- Note**  
1x nut, 10mm, 6 Nm, Position RH controller into vehicle, attach tab onto body and align into body stud, Install new nylon nut





### 113. Secure RH body harness A-Pillar wire guide

**Note**  
3x clips





**114.** Secure FEM & RH body harness to right body controller

**i Note**

11x connectors, 2x clips, Secure locks on connectors, Secure clipped connectors to VC Right



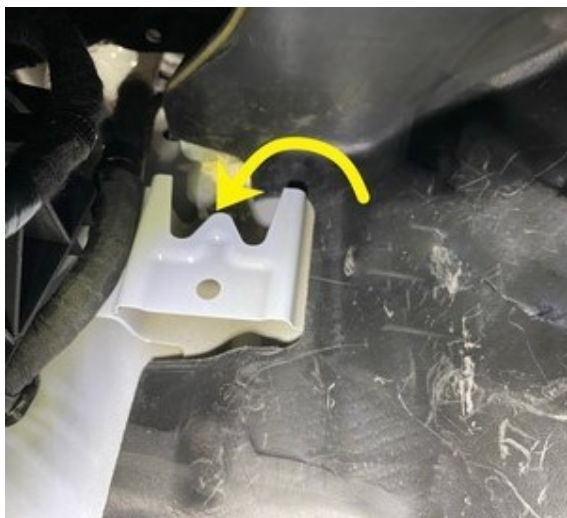




### 115. Secure LH body controller

#### Note

1x nut, 10mm, 6 Nm, Position LH controller into vehicle, attach tab onto body and align into body stud, Install new nylon nut







**116.** Secure LH body harness A-Pillar wire guide

**Note**  
3x clips



**117.** Secure LH FEM & body harness to body controller



**Note**

11x connectors, Secure locks on connectors



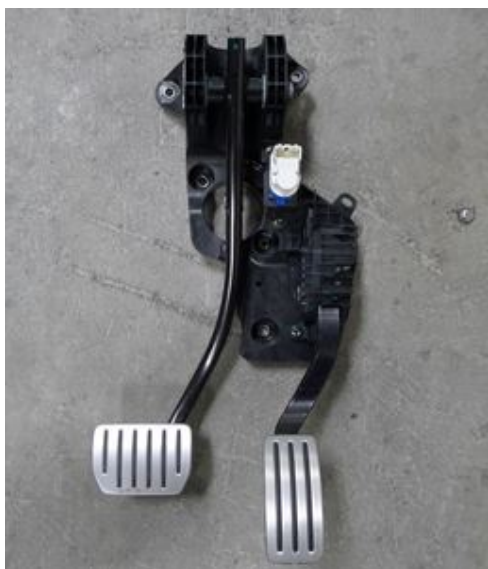


**118.** Secure pedal assembly to vehicle



**Note**

5x Nyloc nuts, 13mm, 16.5 Nm, Install new fasteners, May need to pull brake booster inward to seat studs



**119.** Install clevis pin to brake pedal assembly

- Note**  
1x pin, Wiggle brake pedal to assist pin install



**120.** Secure cotter clip to clevis pin on pedal assembly

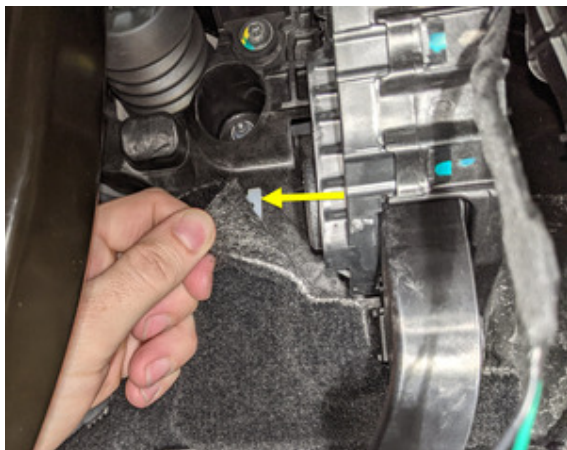
- Note**  
1x clip



**121.** Secure front carpet from pedal assembly and fold down

- Note**  
1x clip





## 122. Install steering column



### Note

Recommend assistance, Guide lower steering shaft in through bulkhead, Secure intermediate shaft dash boot



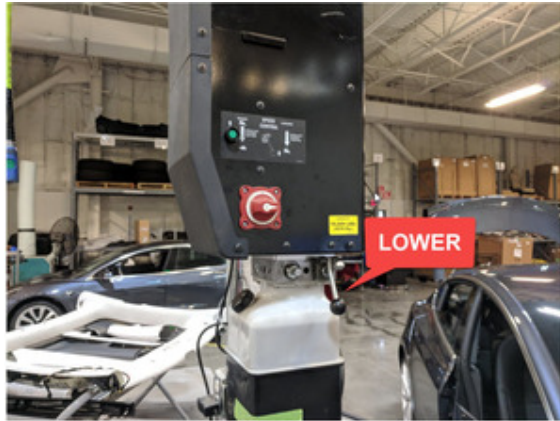




**123.** Raise vehicle fully and lower lift onto locks

**i Note**

Set vehicle to comfortable working height, Make sure there's an audible click of the locks on both sides before lowering, otherwise vehicle may tilt to the side



124. Slide lower electric steering column onto steering gear and install bolt

**Note**  
1x bolt, 13mm, 30 Nm



**125.** Position front skid plate for installation and thread in all bolts

**i Note**

4x bolts, 15mm, 70 Nm, 2x bolts, 15mm, 60 Nm, 2x bolts, 15mm, 30 Nm, 2x bolts, 10mm, 10 Nm, Torque at later step



**126.** Torque bolts securing front skid plate to body casting

**i Note**

2x bolts, 15mm, 60 Nm

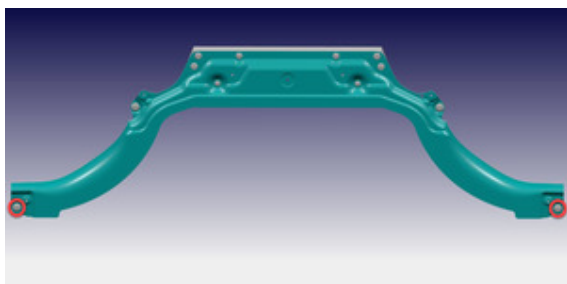


**127.** Torque bolts securing front skid plate to body sill



**Note**

2x bolts, 15mm, 30 Nm



**128.** Torque bolts securing front skid plate to front subframe

**Note**

4x bolts, 15mm, 70 Nm, 2x bolts, 10mm, 10 Nm



**129.** Secure clips securing wheel house liner to front skid plate

**Note**

4x clips



**130.** Apply Loctite 222 onto front aero shield bolts and install fasteners securing front aero shield to vehicle





### Note

9x bolts, 10mm, 6 Nm



## 131. Install clips securing front aero shield



### Note

5x push clips



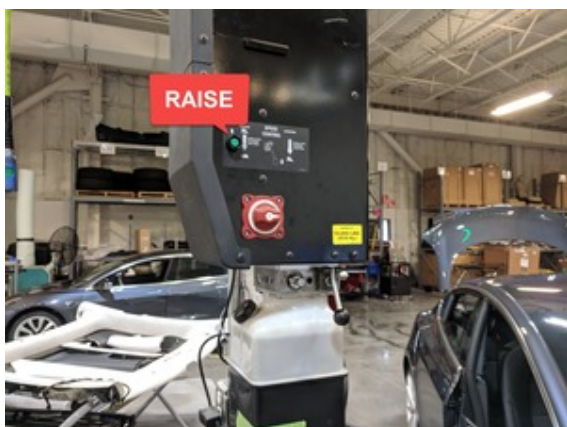


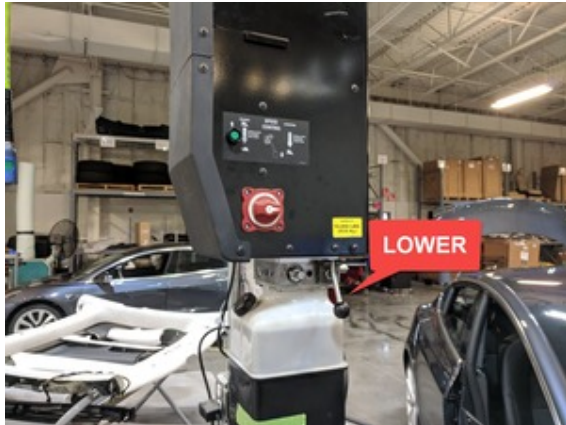
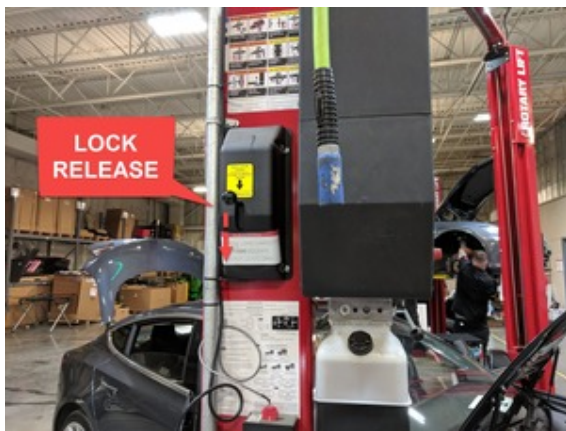
**132.** Lower vehicle until tires are touching the ground



**Note**

Raise lift off locks, then hold lock release lever to keep locks free while vehicle is lowered





**133.** Install HVAC assembly to vehicle



**Note**

Install front of HVAC assembly through passenger front door, Rotate counter clockwise and install towards front of vehicle





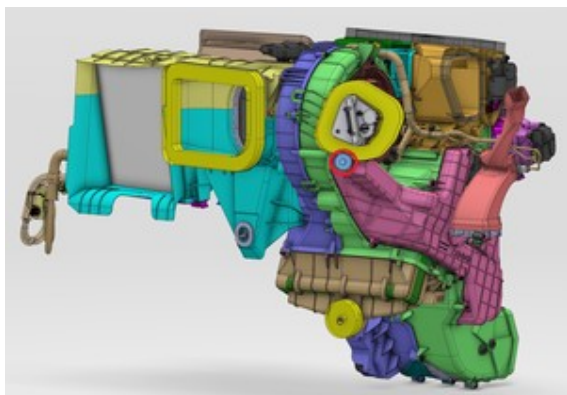
**134.** Secure HVAC assembly bolt at bulkhead



**Note**

1x bolt, 10mm, 8 Nm





**135.** Replace the seal washers to the Penta HVAC line on the HVAC side

**Note**

5x seal washers, Lube seal washers with ND-11 oil



**136.** Install Penta HVAC line from HVAC assembly

**Note**

2x bolts, 13mm, 22 Nm







**137.** Reconnect AC hoses to vehicle

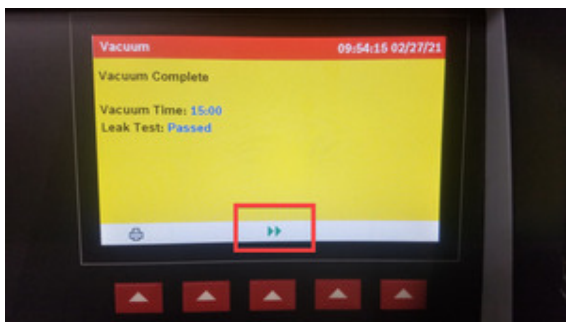
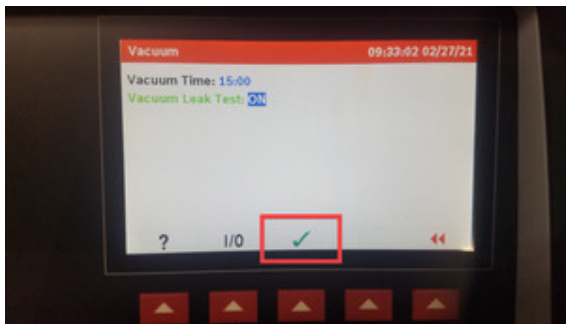
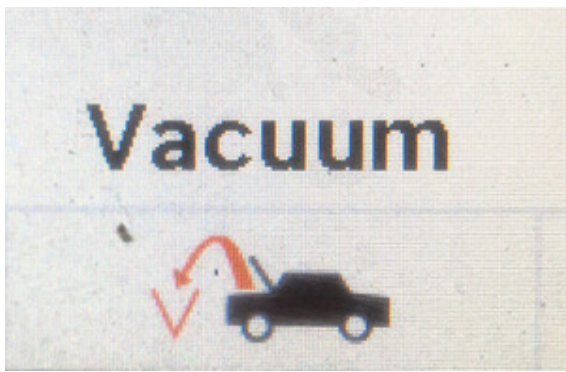


**138.** Perform AC vacuum and run leak test



**Note**

Set vacuum time to 15 minutes and leak test to ON, Machine will chime once process is complete, Vehicle may be left unattended, Verify leak test passed before continuing

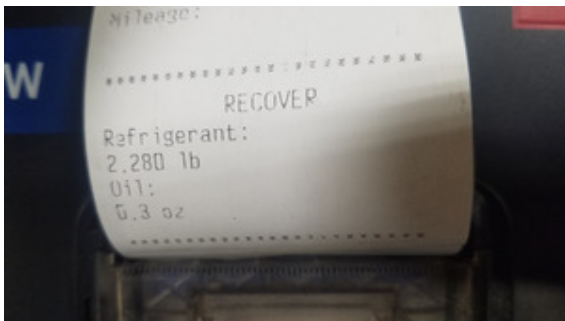
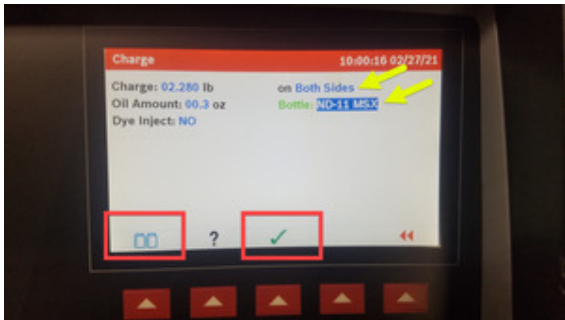
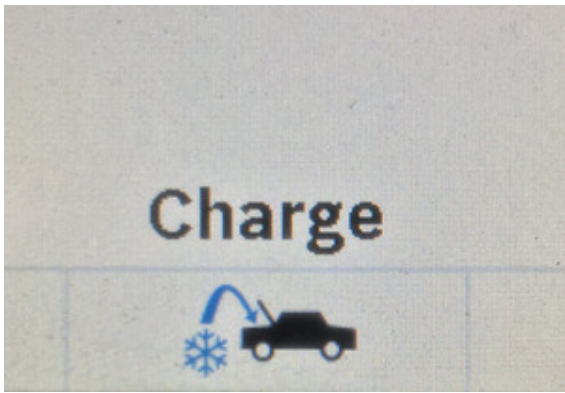


### 139. Perform AC recharge



#### Note

Enter refrigerant and oil amount noted at AC recovery, Settings should match notes, Select Both Sides for charge, Select ND-11 MSX using bottle icon, Machine will chime once process is complete, Vehicle may be left unattended, If desired use the Dye Inject option to inject leak detection dye

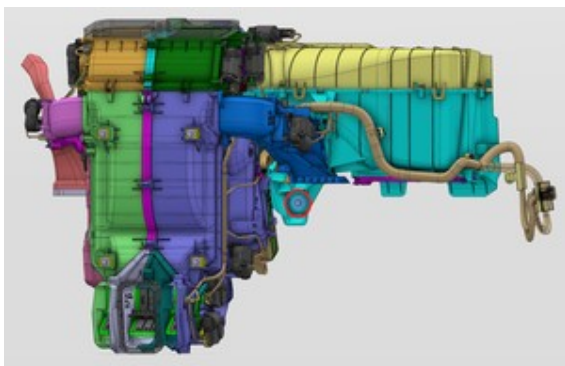


#### 140. Secure HVAC assembly to bulkhead



##### Note

1x bolt, 10mm, 8 Nm





**141.** Secure LH and RH rear vent ducts to HVAC assembly



**Note**

2x tabs, Align ducts into HVAC assembly then secure tabs to retaining studs



**142.** Install center console HVAC duct



**Note**

1x brush clip, Slide duct into HVAC assembly and ensure fully seated



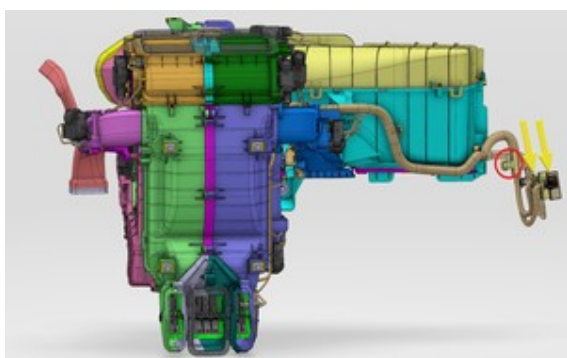
**143.** Secure HVAC blower x059 connector and HVAC case x058 connector to right controller



**Note**

1x clip, 2x connectors





**144.** Install cross car beam assembly into vehicle



**Note**

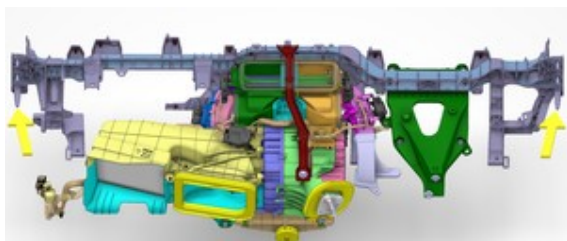
Avoid contact with seats and inner door panel, Recommend assistance as required

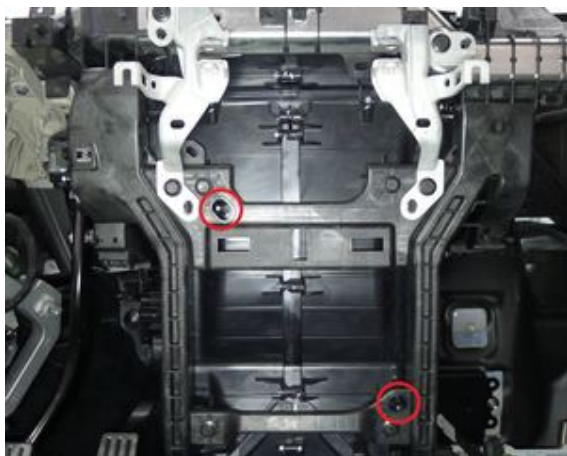




**145.** Align cross car beam assembly to body and HVAC unit

**Note**  
4x datums





**146.** Secure upper steering column bracket IP carrier bolts at bulkhead



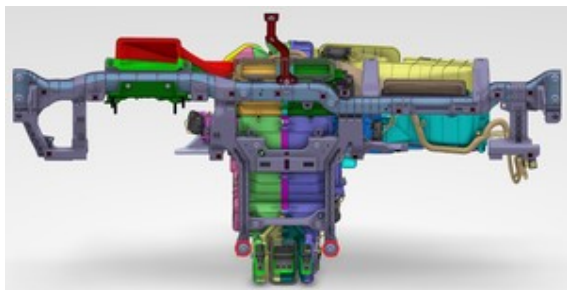
**Note**

2x bolts, 13mm, 27 Nm



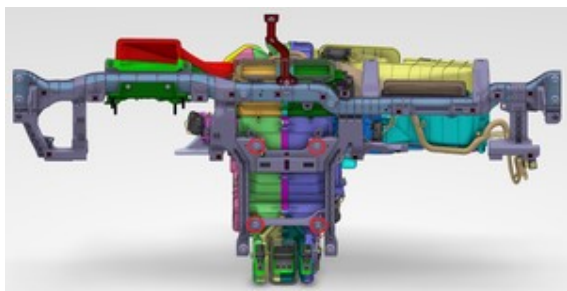
**147.** Secure cross car beam assembly to toeboard bracket

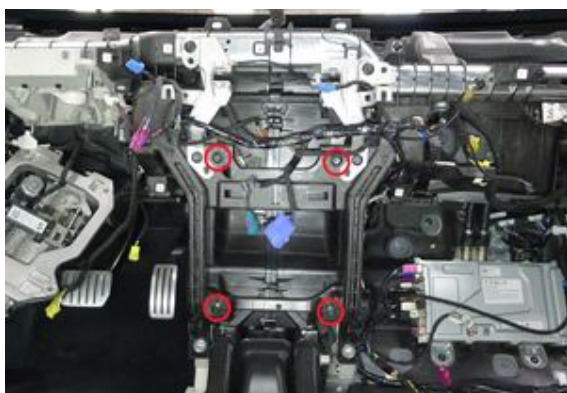
**Note**  
2x bolts, 13mm, 27 Nm



**148.** Secure cross car beam assembly to HVAC unit

**Note**  
4x bolts, 10mm, 8 Nm



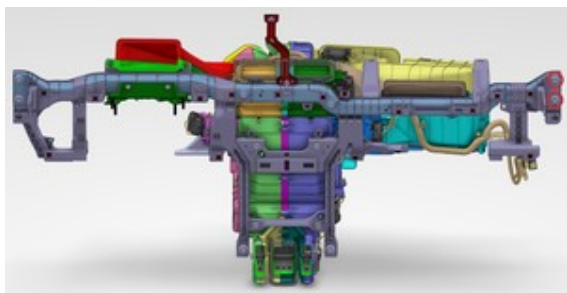


**149.** Secure RH cross car beam assembly



**Note**

2x bolts, 13mm, 27 Nm



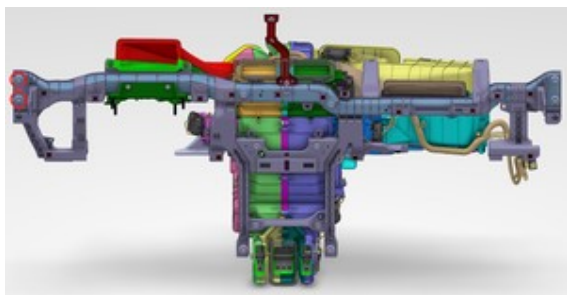
**150.** Secure LH cross car beam assembly



**Note**

2x bolts, 13mm, 27 Nm





#### 151. Secure IP cowl link



##### Note

2x bolts, 10mm, 6 Nm, 2x datums



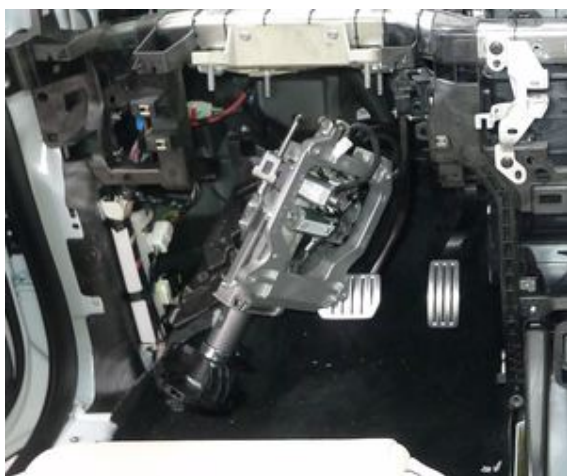


**152.** Secure upper steering column to steering column bracket



**Note**

4x nuts, 13mm, 15 Nm

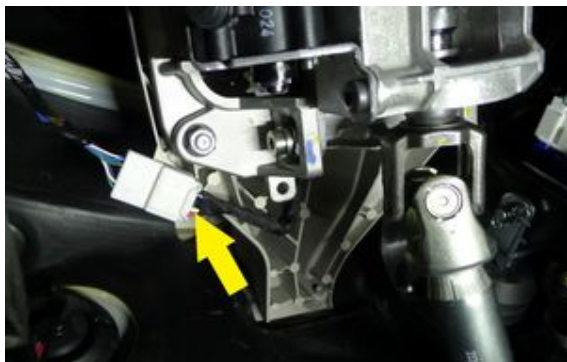


**153.** Secure steering column harness



**Note**

1x connector, 1x clip



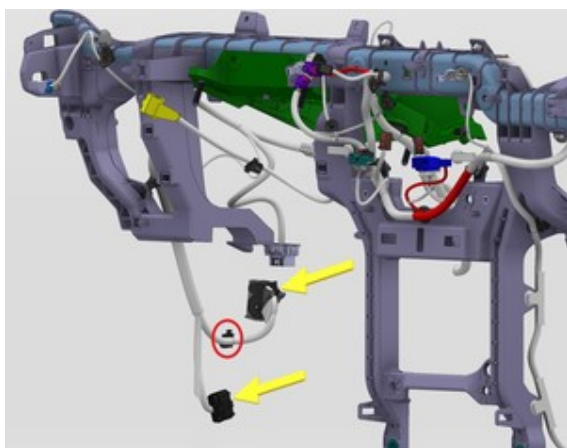
**154.** Secure IP harness to J12 x035 Dash connector at left body controller and connector x947F



**Note**

1x clip, 2x connectors





#### 155. Connect steering column control module assembly connector



##### Note

1x connector, Install new orange retaining clip to connector then install SCCM connector, Perform push-pull-push to make sure connector is seated properly





**156.** Secure IP harness to RH toeboard bracket

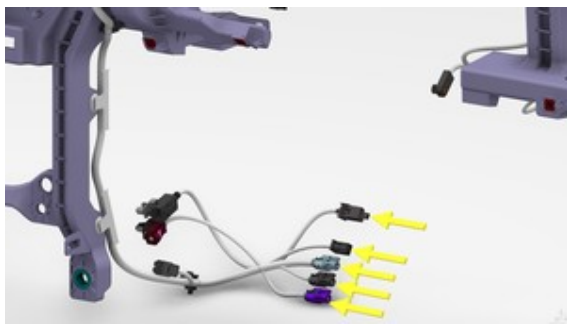
**Note**  
3x clips



**157.** Secure IP harness connectors at LH side of car computer gaming board

**Note**  
5x connectors



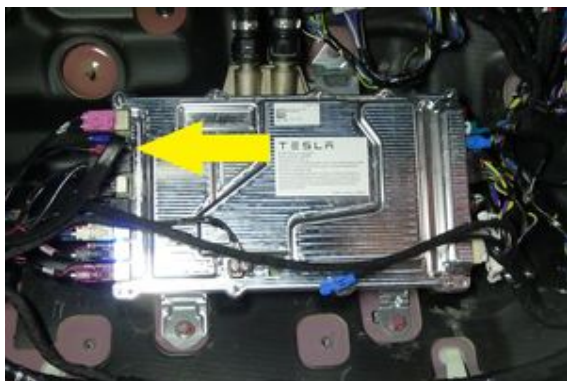


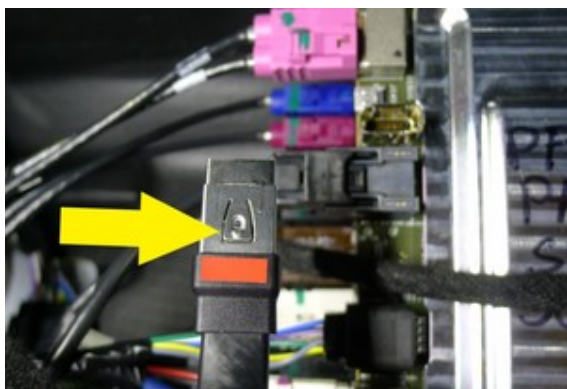
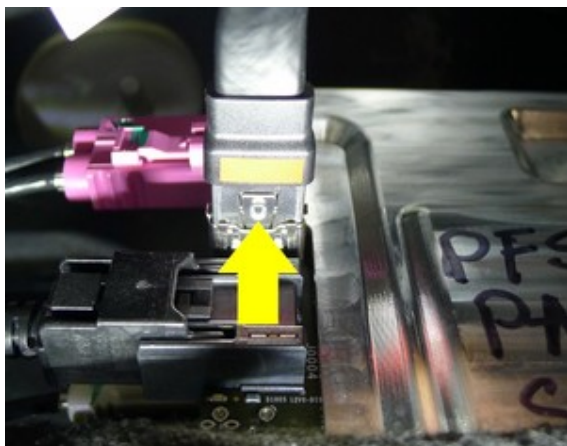
**158.** Install connector to gaming MCU



**Note**

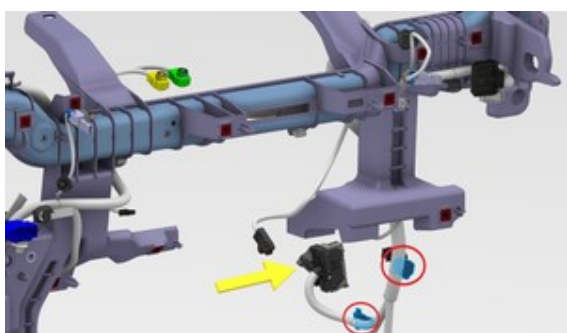
1x connector, Confirm connector locked into socket





159. Secure IP harness to J12 x055 Dash connector at right body controller

**Note**  
2x clips, 1x connector





## 160. Secure lower instrument panel assembly



### Note

3x screws, T20, 3 Nm, 8x tabs, Secure only the screws located at bottom of assembly, Remainder of screws are secured at a later step





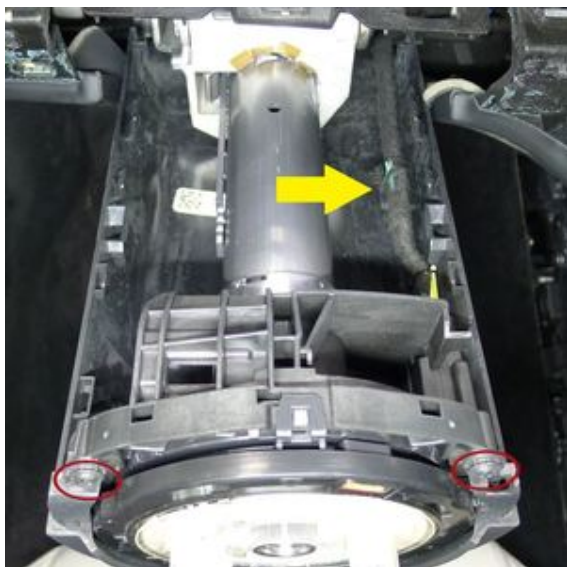
**161.** Install lower shroud to steering column



**Note**

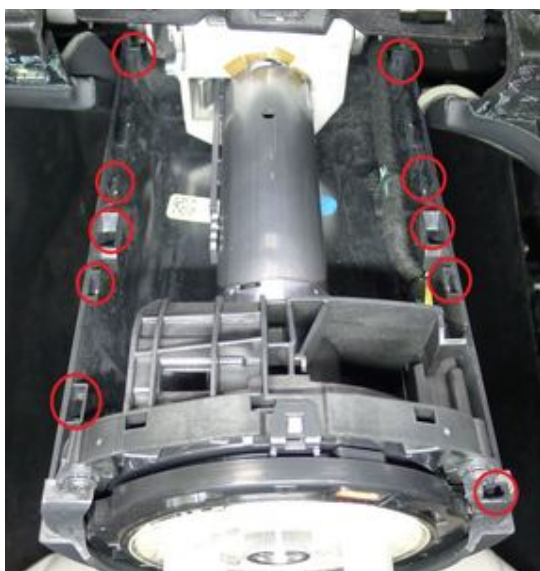
2x screws, T20, 1.5 Nm, 1x clip, 1x datum, Slide lower shroud forward to engage datum





**162.** Align the clips and datums then press downward to install upper shroud onto lower shroud

**Note**  
6x clips, 4x datums





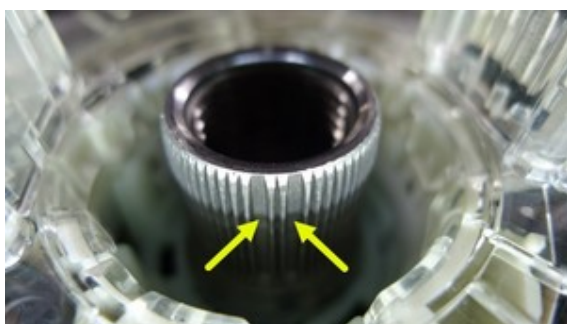


### 163. Install steering wheel



#### Note

Note that the steering wheel is splined to the column and can only be installed in the correct position



**164.** Install bolt securing steering wheel to steering column



**Note**

1x patch bolt, 10mm allen, 80 Nm, Install new patch bolt

---



**165.** Secure steering wheel connector

**Note**  
1x connector



**166.** Connect driver air bag assembly connector

**Note**  
1x connector, 2x tabs





**167.** Install driver air bag assembly to yoke steering wheel



**Note**

2x datums, 2x spring clip, Position driver air bag onto yoke steering wheel, Align datums onto the clips, Press down on one side of the air bag until clip is fully seated, then repeat on other side, You should hear an audible click, Perform pull test on each side of driver air bag assembly, Confirm the gap and space between driver air bag assembly to yoke steering wheel is symmetrical





**168.** Install driver IP air vent duct



**Note**

1x rivets, 1x connector, Slide inboard and into HVAC unit assembly





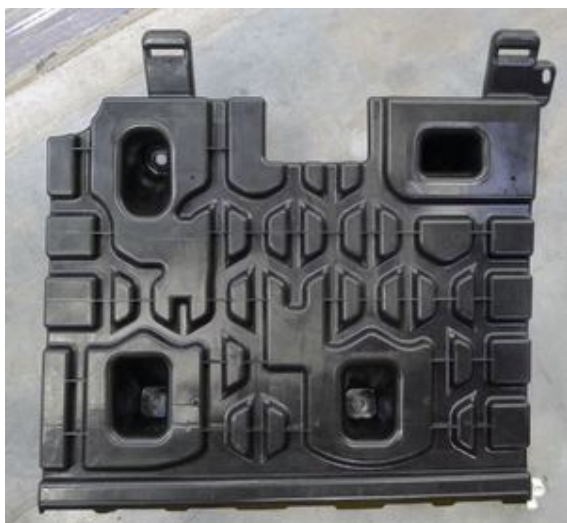


**169.** Install RH footrest panel



**Note**

2x bolts, 10mm, 5 Nm, 1x nut, 10mm, 5 Nm



**170.** Secure harness to RH footrest panel



**Note**

1x clip

---



**171.** Fold RH main carpet back into place



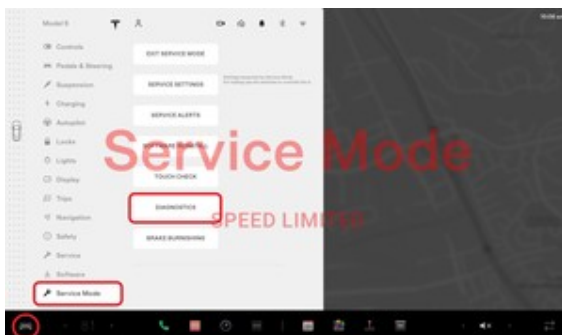
**172.** Install the instrument panel sub-assembly and all other parts that were removed for access. See Sub-Assembly - Instrument Panel (Remove and Install).

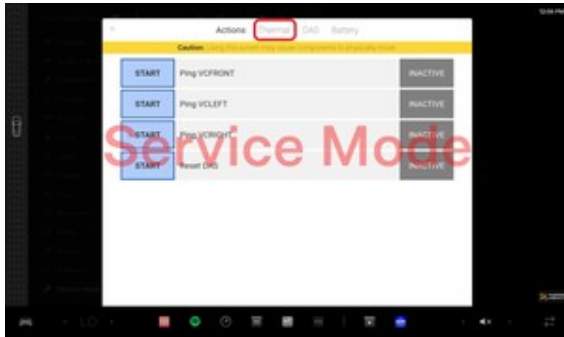
**173.** Access thermal system routines using the UI



#### Note

Select quick controls > Service mode > Diagnostics > Thermal, Authorize routines by holding right turn signal, depressing brake pedal for 10 seconds with key on phone dock





174. Select 'Start' button at 'Run Heat Pump Commissioning' "TEST-SELF\_VCFRONT\_X\_HEAT-PUMP-COMMISSIONING", Status will change from 'INACTIVE' to 'RUNNING'

**Note**

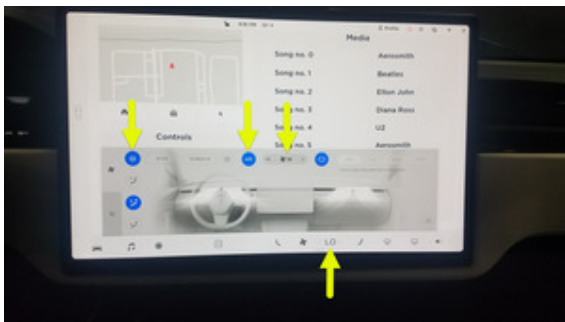
If this routine is not run after entering Thermal Drain/Fill mode, the AC compressor operation will be blocked, Select 'X' at top left of window to close once 'TEST-SELF\_VCFRONT\_X\_HEAT-PUMP-COMMISSIONING SUCCESS' window appears



**175.** Proceed with Hose Equalize steps to complete AC recharge process and follow instructions displayed on AC Machine

**Note**

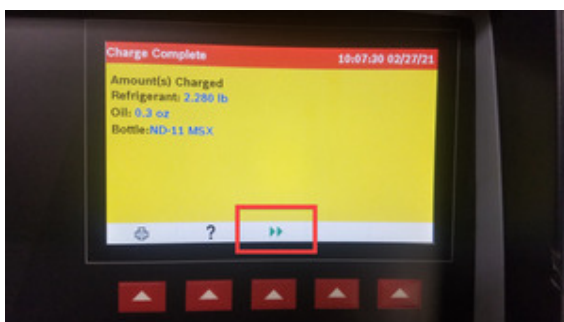
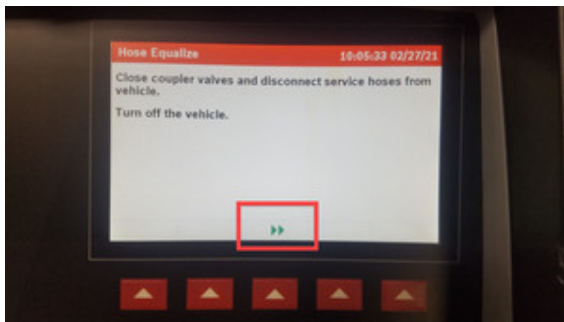
Disconnect high side coupler from vehicle, Turn AC on, Temp setting LO, Panel mode on, Fresh air mode on, Blower speed set to 10, Verify Hose Equalize settings, Verify discharge pressure does not exceed 26 bar and suction pressure is not below 1.15 bar,



**176.** Proceed with Hose Equalize steps to complete AC recharge process and follow instructions displayed on AC Machine

**Note**

Remove low side coupler from vehicle, Turn vehicle off, Verify Hose Equalize settings, Machine will chime once process is complete

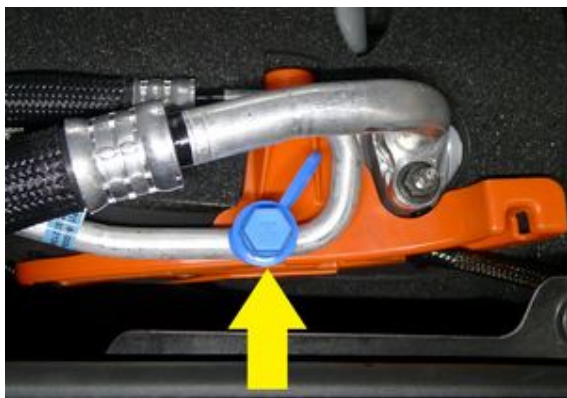


## 177. Install caps onto AC ports

**Note**  
2x caps







## 178. Install wiper module



### Note

3x bolts, 10mm, 8 Nm, 1x connector, Secure electrical connector first, Rotate module rearward and under windshield, Observe LH wiper arm pivot during install to avoid damage to windshield





**179.** Install fasteners securing LH V-brace and secure

- Note**  
3x bolts, 10mm, 18 Nm, 1x nut, 10mm, 9 Nm



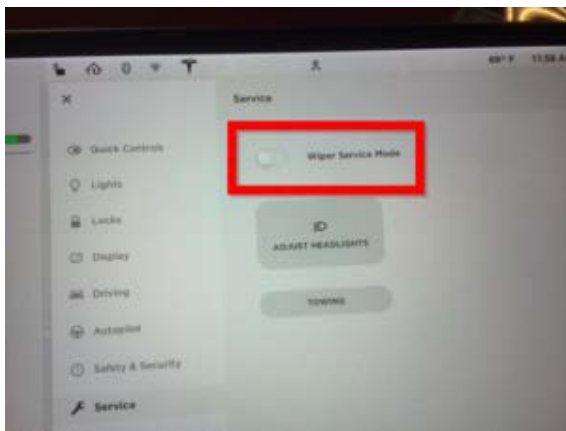
**180.** Install wiper cowl screen panel

- Note**  
4x push clips, 2x end tabs



**181.** Using center display, remove wipers from "Service Mode"

---



**182.** Install RH wiper arm assembly and secure nut

**i Note**

1x nut, 15mm, 26 Nm, Line up wiper to reference mark on windshield



**183.** Install RH wiper arm nut cover



**184. Secure RH wiper arm washer nozzle**

**i Note**

1x hose, Hose is routed below the arm

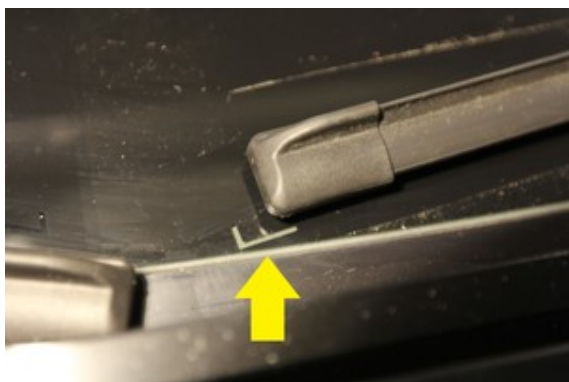


**185. Install LH wiper arm assembly and secure nut**

**i Note**

1x nut, 15mm, 26 Nm, Line up wiper to reference mark on windshield





**186.** Install LH wiper arm nut cover



**187.** Secure LH wiper arm washer nozzle



**Note**

1x hose, Hose is routed below the arm



**188.** Install RH shock tower cover

- Note**  
3x push clip, 1x fir tree clip



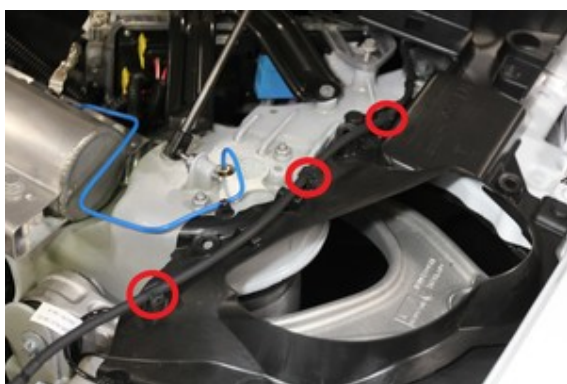
**189.** Install LH shock tower cover

- Note**  
3x push clip, 1x fir tree clip



**190.** Secure washer hose nozzle by LH shock tower cover

**Note**  
1x hose, 3x clips



**191.** Install RH underhood apron

**Note**  
10x clips



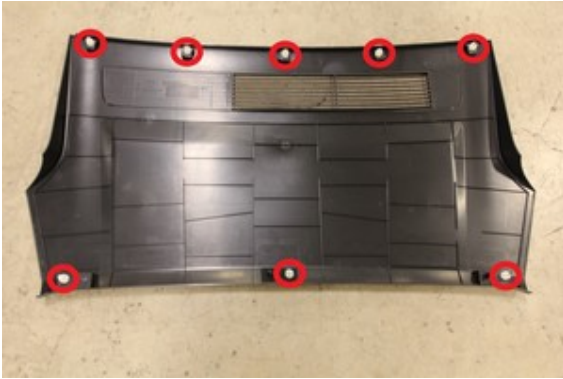
**192.** Install LH underhood apron

**i Note**  
10x clips



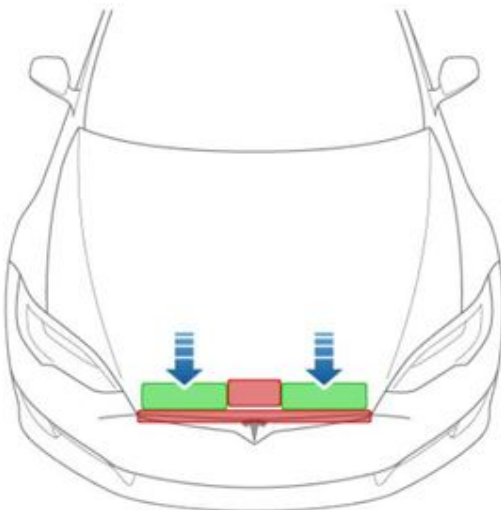
**193.** Install rear underhood apron

**i Note**  
8x clips



**194.** Close hood

**i Note**  
Press firmly in green highlighted areas (see image), Damage may result from pressure elsewhere on hood





195. Install the center console. See [Center Console Assembly \(Remove and Replace\)](#).

196. Test Thermal Performance

**Note**

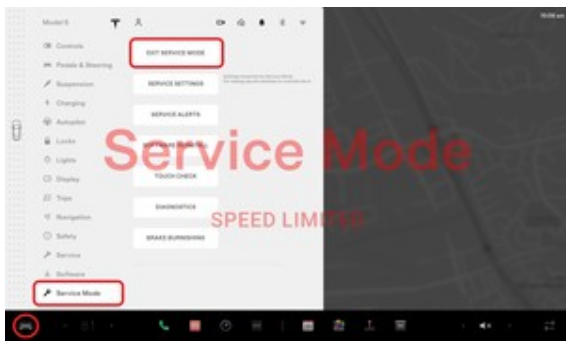
Scroll up Thermal menu, Select 'Start' button at 'Test Thermal Performance' using the UI, Menu will change from 'INACTIVE' TO 'RUNNING'- allow routine to complete, Select 'X' at top left of window to close once 'TEST-SELF\_VCFRONT\_X\_THERMAL-PERFORMANCE-SUCCESS' window appears



197. Exit Service Mode

**Note**

Controls>Software select Exit Service Mode button



**198.** Adjust steering column back to original position



**Note**

Via UI>Controls>Steering, Use left steering wheel scroll wheel to adjust steering column