

### FIRST RESPONDERS GUIDE

24Hr helpline No. +44 (0)121 535 1804

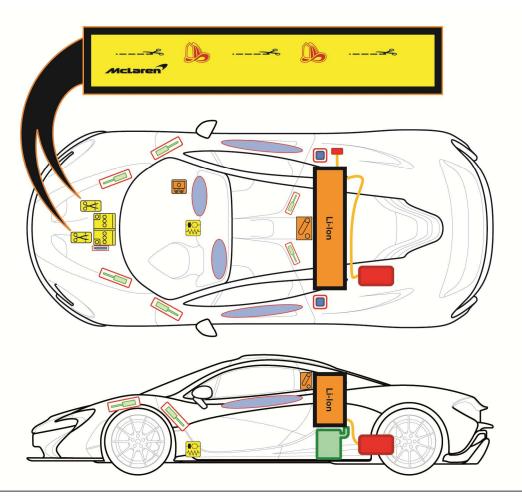




Wire Cut point labels:

2 X Cut = 12 V BATTERY GROUND WIRE

2 X Cut = HVIL SAFETY KILL LOOP WIRE (High Voltage Interlock Loop)





### Low voltage Cut point to disable HV system







Air Bag Control Unit







Gas Strut

Low Voltage Battery: Li-ion 12V





Circuit Cable





Stored Gas Inflator

Fuse Box High Voltage Circuit (HVIL)







High Voltage Battery Li-ion 600V



Disconnection

BRAND	MODEL	Body shape	Steering position	Year of introduction	Creation date	Version date	ID No.	Version No.	Page N°
McLaren	P1™	COUPE	LHD	2013	July 4 2013	July 4 2013	Sample VIN: SBM11AAA5AW000001	V1.0	1



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### **Vehicle Identification**



Illustration above shows primary features that identify this vehicle as a McLaren P1<sup>TM</sup> which is a hybrid vehicle fitted with a High Voltage Li-ion battery.

# Submerged or partially submerged vehicle



### **WARNING!**

High voltage system with DC voltage up to 600 V. Do not touch high voltage systems identified by the orange cables.

If the vehicle is submerged or partially submerged in water, do not touch any high-voltage components or orange cables while extricating the occupant(s). Do not remove the vehicle until you are sure the high voltage battery is completely discharged. A submerged high-voltage battery could produce a fizzing or bubbling reaction. The high-voltage battery will be discharged when the fizzing or bubbling has completely stopped.

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### After a Road Traffic Collision (RTC)



### **WARNING!**

High voltage system with DC voltage up to 600 V.

Do not touch high voltage systems identified by the orange cables.

### **WARNING!**



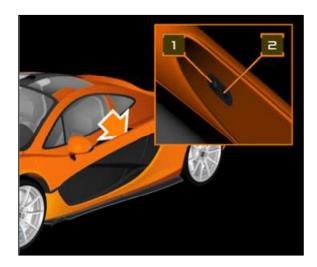
When attending the scene of a Road Traffic Collision (RTC), involving a McLaren  $P1^{TM}$ , always assume the vehicle is live. The wearing of a pair of high voltage insulating gloves (Rated to 1000 V) is MANDATORY for all the operations 2-6, as show below, and on the next two sheets.

# WARNING!



The McLaren P1<sup>™</sup> has stop/start technology. If the instrument cluster warning lights are illuminated the engine may start and the high voltage system may become active at any time.

- 1. Secure a safe area around the vehicle: Barrier off if necessary.
- **2. Stabilize and immobilize the vehicle:** Chock the road wheels if necessary, the vehicle has an electronic parking brake **ONLY**.
- 3. Open door-by any of the four methods below (A, B, C & D below):
  - A. Exterior door release (Located on both doors)



Press firmly the button indicated (2) above, to unlock and unlatch the door.

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### B. Interior door release (Located on both doors)



Pull door handle upwards

## C. Interior Manual door release (located on both inner rocker panels)



In the event of power failure, remove the manual release strap from its stud, and pull the strap forwards in one smooth movement until resistance is felt.

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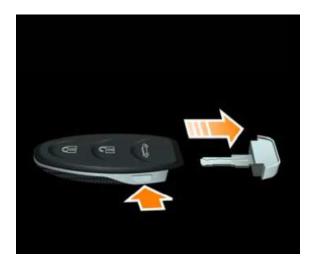
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Pull the strap forward again until the door latch is released

## D. Exterior Manual Door Release (Driver side only)

In the event of power failure or if key fob battery has become discharged, use the mechanical key.



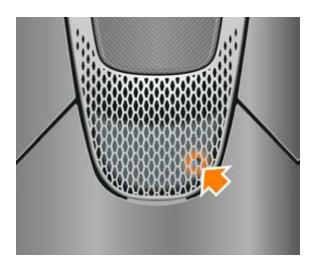
Press release catch and remove the mechanical key from the key fob.

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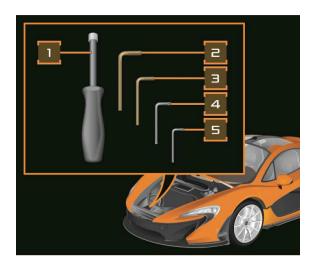


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The mechanical lock is located beneath the driver side service access panel.



If panel is locked, it can be accessed using a T20 Torx key (2), included in the emergency tool set in the front luggage compartment. Insert the Torx key (2) through the grill for the central high mounted stop lamp, through the grommet and into the socket underneath. Turn the key in a clockwise direction until the service access panels have been unlocked.

Alternatively the service access panel can be forcibly opened using a lever or crow bar.



### **WARNING!**

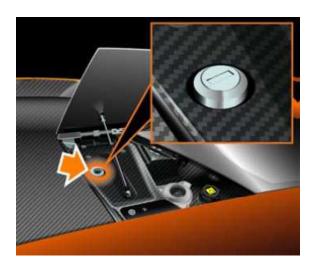
Forcibly opening the service access panel may result in the glass breaking. Safety glasses, gloves and protective clothing must be worn.

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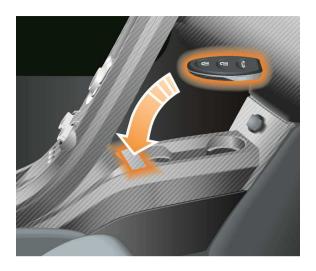
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Open the driver side service tray access panel. Insert the mechanical key into the lock and turn the key clockwise until mechanical resistance is felt.

Apply pressure to the latch area of the door (to counteract pressure of the door seals), and turn the key further to release the door.



NOTE: Unlocking the vehicle using the mechanical key will activate the antitheft system and may cause the alarm to sound. Once the door is open, place the key fob on the section of the cup holder housing immediately behind the switch panel within 10 seconds. The vehicle will recognize the key fob and stop the alarm from sounding.

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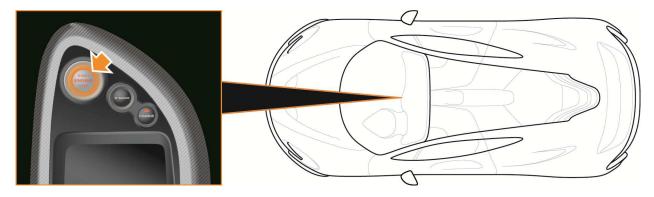
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4. Ensure that the engine is not running and the instrument cluster displays and warning lights are not illuminated:



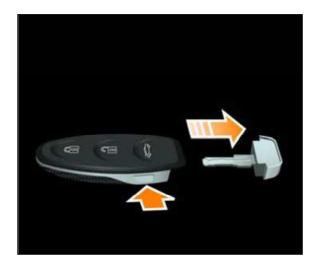
#### **WARNING!**

Never assume the vehicle ignition is off if the engine is not running.



If the instrument cluster displays or warning lights are illuminated switch off ignition using the start stop button (short press).

- **5. De activate the High Voltage system:** By either proceedure A or B shown below.
  - A. Disconnect the low voltage (12V) battery negative terminal and HVIL cables



Access to the battery terminals is gained through the front luggage compartment, which can be opened with the manual key from the ignition key fob.

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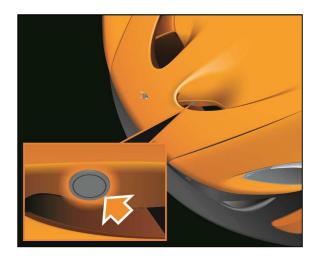


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## Lift hood to open



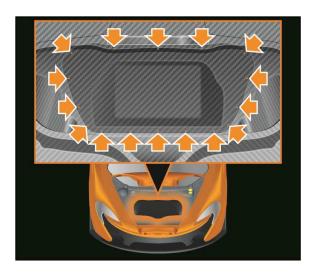
Once unlocked, using the manual key, push button to open luggage area.

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The battery is located behind the front luggage area rear trim. The trim is retained by 16 bolts. Alternatively the trim panel can be forcibly removed using a lever or crow bar.



### **WARNING!**

Forcibly removing the rear trim may result in the carbon fibre splintering. Safety glasses, gloves and protective clothing must be worn.



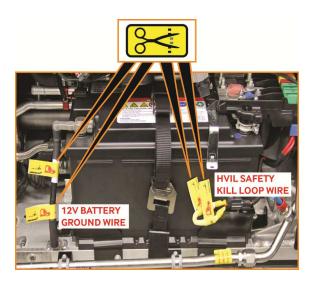
#### **WARNING!**

Turn Ignition "Off"



#### **WARNING!**

Cut the 12V battery cables at yellow labels 4 cut positions



The 12 V battery ground and HVIL cables are marked with an emergency label – cut these wires at these labelled points.

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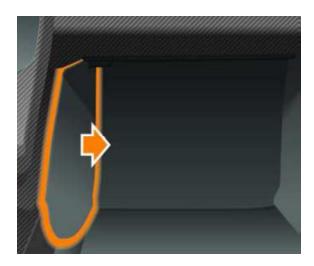


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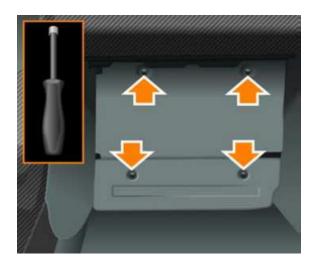
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### B. Remove the hybrid fuse

The fuse box is located in the passenger footwell (passenger side) behind facia trims



Release and remove the center console finisher (indicated by arrow). Four push studs hold the finisher in place.



Remove the foot rest carpet to the underside of the dash pane and then remove the cover screws using a 7mm socket screwdriver.

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Wearing insulated gloves and using a pair of suitable pliers, remove the fuse.



The HVIL fuse location is highlighted by the red box in the photo above.

**Note -** High Voltage Interlock Loop (HVIL) fuse is identified in the fuse box by a label pictured below.



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**6. If unable to carry out either procedures 5. A or B:** Wearing insulated gloves, slowly remove the service disconnect using the nylon strap in the center of the plug

**WARNING!** 



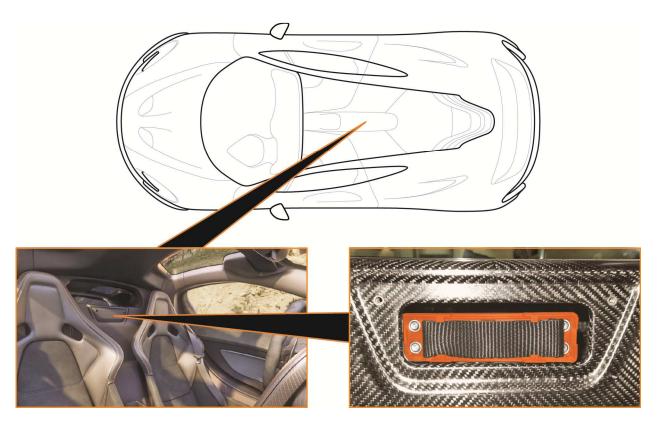
High risk of Injury through arc-flash over.

**DO NOT** remove the "service disconnect" if the ignition is on or the engine running

**WARNING!** 



DO NOT REMOVE UNLESS IGNITION IS OFF



The service disconnects position is highlighted by the red box in the photo above, located between the driver and passenger seat at the back of the passenger cabin behind a facia trim panel (secured with two M4 hex screws).

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## The off car charger

Unplug and remove the charger, if it's plugged in. This can be done safely regardless of vehicle state.



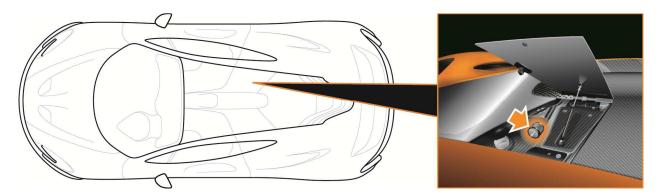
### **WARNING!**

**DO NOT CUT** any of cables connected to the charger



### **WARNING!**

High voltage system with DC voltage up to 600 V. Do not touch high voltage systems identified by the orange cables.



**Note:** When the charger is connected to the vehicle the parking brake will be applied. Neutral gear will be selected automatically to immobilise the vehicle, if not already done manually by the driver.

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## **HV Battery Fire / Leak - Safety information**

The HV battery is constructed using Lithium Iron Phosphate cells containing electrolyte gel:

- HV Battery fire fumes utilize self-contained breathing apparatus and firefighting protective clothing in a defensive mode (uphill, upwind, upstream).
- Fire extinguishers

For HV battery electrical fire use a co<sub>2</sub> extinguisher only.



#### **WARNING!**

Only the emergency services are advised to use water.



#### **WARNING!**



After using a CO₂ fire extinguisher the HV battery fire could reignite at any time due to the Ignition properties of Lithium Iron Phosphate HV battery cells. However, if water must be used, LARGE amounts of water will be required (e.g. from a fire hydrant) to extinguish the flames.

### **WARNING!**



If the battery is punctured then use a co<sub>2</sub> extinguisher only Release of electrolyte from battery cell may generate hydrogen fluoride acid. The interaction of water or water vapor and exposed lithium hexafluorophosphate (Li PF6) may result in the generation of hydrogen and hydrogen fluoride (HF) gas. Fire will produce irritating, corrosive and/or toxic gases.

Responders who are not qualified emergency service personnel are advised to use a  $CO_2$  fire extinguisher to put out any vehicle fire. If this is unsuccessful, retreat to a safe distance and await the emergency services.

For fire surrounding a non-punctured HV battery use water to cool the vehicle body around the HV battery ensuring a safe distance is maintained.

- HV Battery electrolyte gel is harmful if swallowed, inhaled or absorbed through skin.
- **HV Battery leak** 
  - 1. Eliminate all ignition sources.
  - 2. Do not touch or walk through leaked material.
  - 3. Absorb all leaked material with earth, sand or any other neutralizing material bag up and dispose of following state laws.

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Airbags triggered in an accident are in an active state therefore to de-activate do the following:

• Turn off the vehicle using the start stop button and wait for 5 minutes.

or

 Disconnect the ground connection to the 12 V battery and wait for 5 minutes (recommended in collisions with non – deployed airbags).

## Air conditioning system

The McLaren P1<sup>™</sup> is fitted with R134a refrigerant air conditioning system.

Draining and replenishing of refrigerant must carried out by a qualified person using a recharging unit. The main risks to health and safety associated with refrigerants used in air-conditioning systems occur if they are released into the atmosphere.

#### Risks - include:

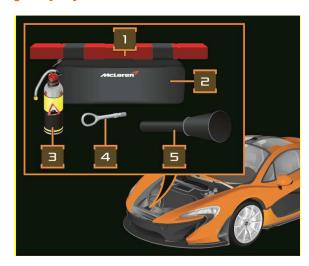
- Frostbite, caused by skin or eye contact with the refrigerant liquid or gas.
- **Asphyxiation**, if the gas (which is heavier than air) escapes into a vehicle inspection pit or similar confined space.
- Toxic and corrosive gases, resulting from thermal decomposition of refrigerant if exposed to temperatures above 480°F (250°C).
- There is also a risk of explosion if hot work, such as welding or burning, is carried out on
  or near air-conditioning systems. This arises because high temperatures could cause the
  system pressure to increase significantly and although R134a is not flammable at normal
  temperature and pressure, it can become combustible when mixed with air under
  pressure and exposed to strong ignition sources.

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# **Vehicle Emergency Equipment**



- 1. Warning triangle
- 2. First-aid kit
- 3. Tire sealant
- 4. Towing eye
- 5. Customer emergency fuel funnel

Note: The towing eye and the fuel funnel are supplied fitted inside the first-aid kit container (2).



The fire extinguisher is located at the front of the luggage compartment

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## **Towing for recovery**

- The Mclaren P1<sup>™</sup> is equiped with a front towing eye mounting only.
- Do not use a ridged bar to tow the vehicle.

The towing eye can be found in the front luggage compartment, inside the First Aid container.

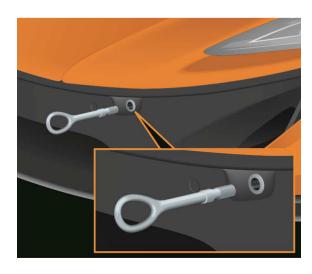
### **Towing Eye and Mounting**

- Remove the cover from the towing eye mounting in the front bumper.
- Screw the towing eye clockwise into the mounting hole, ensuring that it is screwed in to the full extent of the thread.

### **WARNING!**



A winch cable/strap must be secured to the towing eye only or the vehicle could be damaged. The towing eye must only be used to winch the vehicle onto a trailer or transporter for recovery purposes. Do not tow the vehicle for long distances as doing so could damage the gearbox.



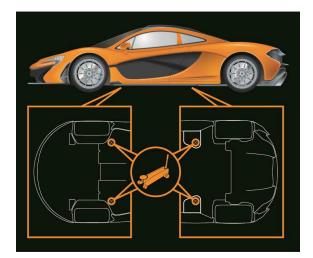
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McLaren	P1™	COUPE	LHD	2013	July 4 2013	July 4 2013	Sample VIN: SBM11AAA5AW000001	V1.0	18

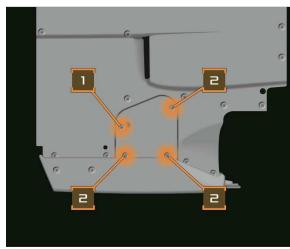
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## **Vehicle lifting points**

- Lift the vehicle at the points shown in the image below.
- Lifting the vehicle at any other points will damage the vehicle.
- Use a jack with a flat lifting platform and a rubber pad to protect the chassis from surface damage. Do not lift under a body panel.
- DO NOT attempt to raise both front and rear wheels on one side of the vehicle by using a single jacking point.
- DO NOT jack the vehicle without first removing the rear jacking plates (shown in the image below).
- The vehicle can be jacked on the front jacking plates





Use the following procedure to remove each rear jacking plate:

- Use a 5mm Allen key to remove one bolt (1) and a 4mm Allen key to remove three bolts (2) shown in the above image.
- Release the rear jacking plate cover, detach the drain hose and remove the cover

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- This guide is not a substitute for specialist training and/or literature and is for use by trained rescue workers only
- The McLaren P1™ is a Hybrid vehicle equipped with a High Voltage battery pack.
- Improper rescue techniques may result in death or serious personal injury.
- This document may not be altered without written permission of McLaren Automotive Ltd.

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