



Innotech Performance
Exhaust

Installation Manual

組裝手冊

For Brand & Make / 車款 :
PORSCHE 991 Turbo

version 1

Date : 2015/05/22

WWW.IPE-f1.com

Preface

This document contains installation instruction for fitment of IPE exhaust system, with related settings and operation.

Important Message

IPE developed this exhaust system as an improvement to the original system, Therefore, there will be no difference from the original vendor after installation. In many vehicle model, there is an inductive power supply function between the car key and the car. For safety, the car key should be kept away from the vehicle with a distance of at least five meter.

The exhaust on a car immediately after being driven still has a high temperature. For safety, please wear heat insulating gloves when replacing the exhaust, or wait until the temperature has decreased to avoid burns.

When the valve is set to open automatically, do not let the valve open too early to prevent resonance generation. The opening of the valve is recommended to be set to 60% of throttle position

IPE exhaust has been designed according to the engine data of the original vendor. If the horse power of the engine is increased through a computer upgrade, obvious resonance in conjunction with this exhaust could occur. IPE can also provide modified exhausts for such vehicles. Please contact us for further details.

安裝流程

本份文件用以說明iPE所銷售的排氣管之安裝流程，與相關的設定、操作方式。總共可分成3個流程，各個流程的內容於對應所需要的操作時間如下表1.1所示。時間的計算系以一位有經驗的技師搭配一位助手為基礎。

Installation Processes:

The product for Porsche 991 include three import step. This product install more fast and smoothly job that we suggest two mechanics to do installation job.

項次 STEP	工作內容 WORK	預估時間 Installation time
1	拆除原廠排氣管/ Remove stock exhaust. 表格 1-1	2小時 / 2 Hour
2	安裝iPE排氣管/ Install iPE exhaust system.	2.5小時/ 2.5 Hour
3	安裝控制盒及配線 / Install control box and wire set.	2小時 / 2 Hour
合計 / Total time		6.5小時 / 6.5 Hour

操作過程中所需的工具



內六角板手 / Hex Wrench
6mm



星型套筒
/Star groove wrench
E10 、E12 、E14

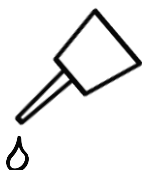


外六角板手 Open end
hexagonal wrench
12mm 、13mm
15mm 、22mm



扭力板手 / Torque
wrench

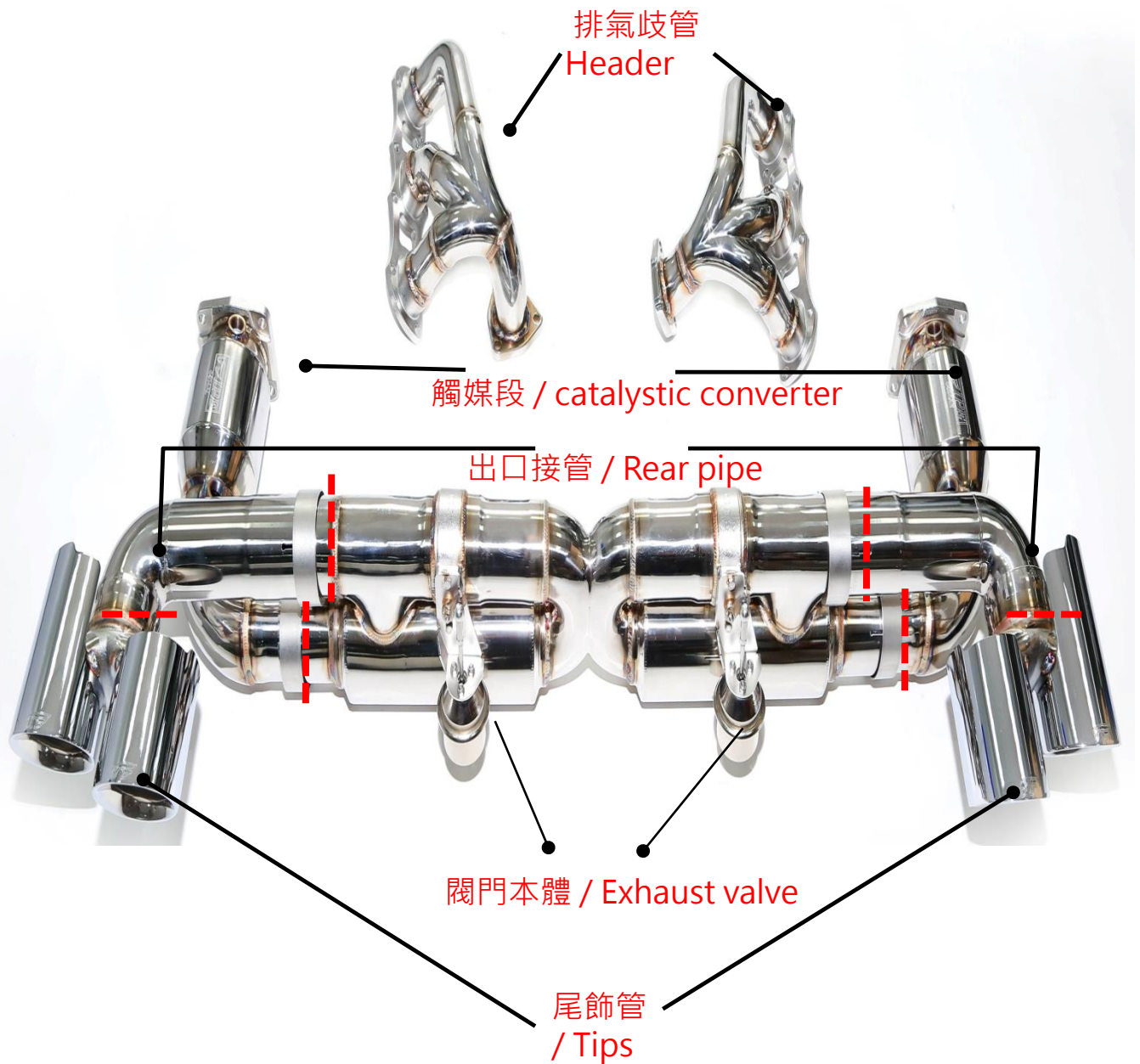
Torque Wrench



防銹劑 / 潤滑油
Anti-rusting oil



iPE 991 Turbo 產品總成外觀 iPE 991 Turbo complete product outside look



一、拆除原廠排氣管的步驟及相關重點

STEP1. Stock exhaust demount & important notes

排氣歧管拆除流程 /exhaust header section demounting procedure

1.使用E12星型扳手將排氣歧管拆除1.Use star wrench E12 to remove exhaust header
圖1-1紅圈處 / See 1-1 red circle

2.使用12mm扳手將歧管渦輪端拆除 / 2. Use 12mm wrench to remove exhaust manifold. 圖1-1箭頭處 / See 1-1 red arrow

※排氣歧管取出時可將渦輪油管放鬆圖1-1藍色箭頭處會有少許機油流出，如可能請靜置引擎10分後再拆除※ When you remove exhaust manifold that you need be careful hot engine oil from turbine tube.

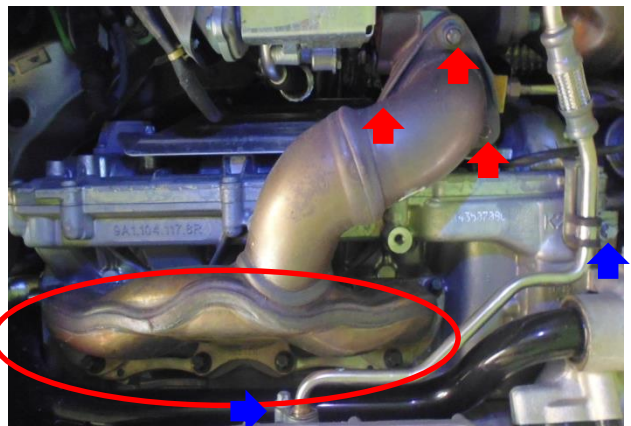
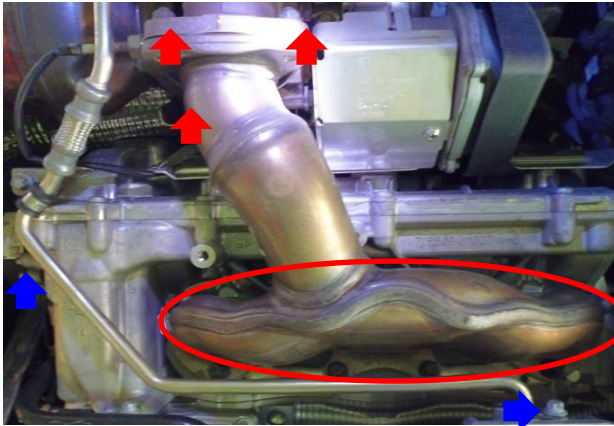


圖1-1 / Pic 1-1



觸媒段與桶身拆除流程 /Exhaust and catalytic converter section demounting procedure

3.將尾飾管使用E14星型扳手拆除3.Use star wrench E14 to remove.

圖1-2箭頭處 / Pic 1-2 see red arrow



圖1-2 / pic 1-2



4.將渦輪護蓋使用E10星型扳手拆下 / 4.Use star wrench E10 to remove turbo cover

圖1-3箭頭處 / Pic 1-3 see red arrow

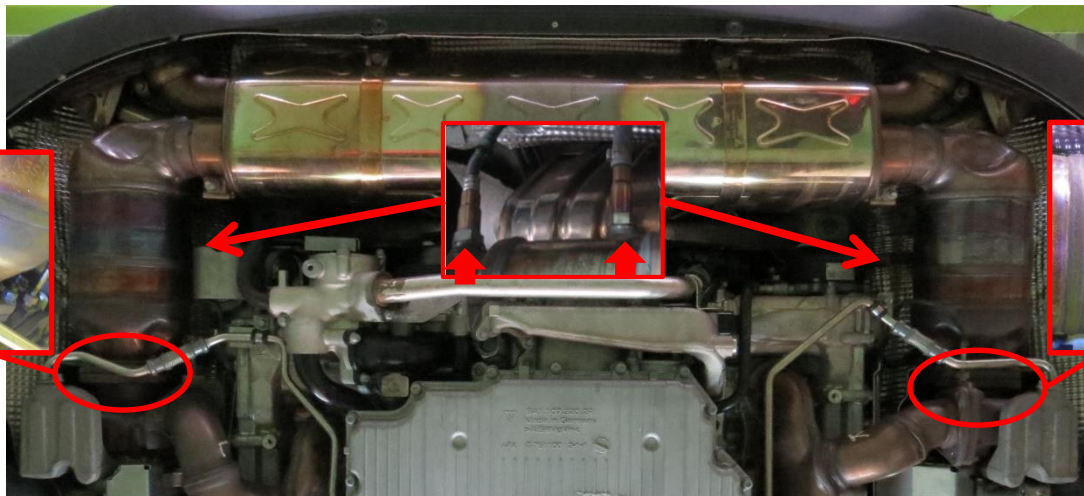


圖1-3



5.將前後含氧感知器使用22mm板手拆除 / 5.Use 22mm wrench to remove O2 sensor. 圖1-4箭頭處 / Pic 1-4 see red arrow

6.使用12mm板手拆除觸媒段渦輪端接處 / 6.Use 12mm wrench to remove catalyst converter with turbo connector side. 圖1-4紅圈處 / Pic 1-4 see red circle.



7.將左右觸煤介面束環使用15mm板手拆除 / 7.Use 15mm wrench to remove left and right hand side catalyst converter bundles. 圖1-5紅圈處 / Pic 1-5 red circle.

8.將桶身束帶使用6mm內六角板手放鬆後拆下 / 8. Use 6mm hex wrench to remove silencer bundles. 圖1-5箭頭處 / Pic 1-5 see red arrow.



圖1-5



※桶身拆下時由於固定架與後保杆空間較小需依角度旋轉下來※
To take out silencer from fixation stand that you need turn angle to take out silencer.

~已上完成原廠排氣管拆除作業~

Page 6 & 7 about remove stock muffler.

二、安裝 IPE 排氣管的步驟及相關重點

Step 2. iPE exhaust installation and notes

排氣歧管安裝流程 / Header installation processes

1.將排氣歧管裝上，使用E12星型板手鎖緊 / 1.Use E12mm star wrench to install header.

圖2-1紅圈處 / Pic 2-1 red circle.

2.使用13mm板手將渦輪端接合處鎖緊 / 2. Use 13mm wrench to install turbo side.

圖2-1箭頭處 / Pic 2-1 see red arrow

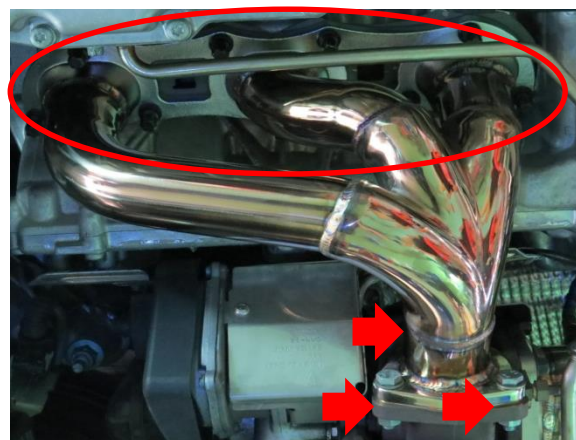
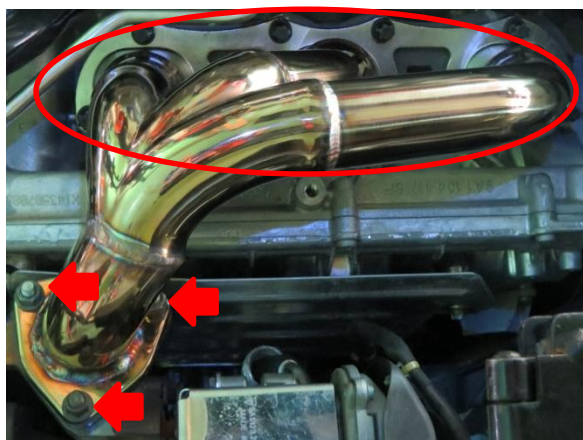


圖 / Pic2-1

22N-m
16ft-lb



觸媒段及閥門桶身安裝流程 / Catalytic converter ,valve and silencer Installation processes.

3.將觸媒段與閥門桶身裝上使用12mm板手與渦輪端接合/ 3. Use 12mm wrench install catalytic converter ,valve and silencer. 圖2-2紅圈處 / Pic 2-2 see red circle.

4.將前後含氧感知器使用22mm板手鎖上/ 4. Use 22mm wrench install front and rear O2 sensor. 圖2-2箭頭處 / Pic 2-2 see red arrow.

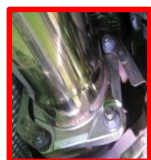


圖2-2

22N-m
16ft-lb



5.將桶身束帶使用13mm板手鎖緊圖2-3紅圈處

/ 5.Secure muffler metal bundle using 13mm wrench (see pic 2-3 red circle)

6.將觸媒段及桶身介面使用13mm板手將束環鎖緊圖2-3箭頭處

/ 6.Secure bundle of muffler and catalyze converter using 13mm wrench (see pic 2-3 red arrow)

※將桶身束帶裝上時須注意是否扣住支架及服貼度圖2-3藍框處※

※The metal bundle install muffler be care for prop stand hook up and perfectly fit on surface.

See pic 2-3 blue frame round

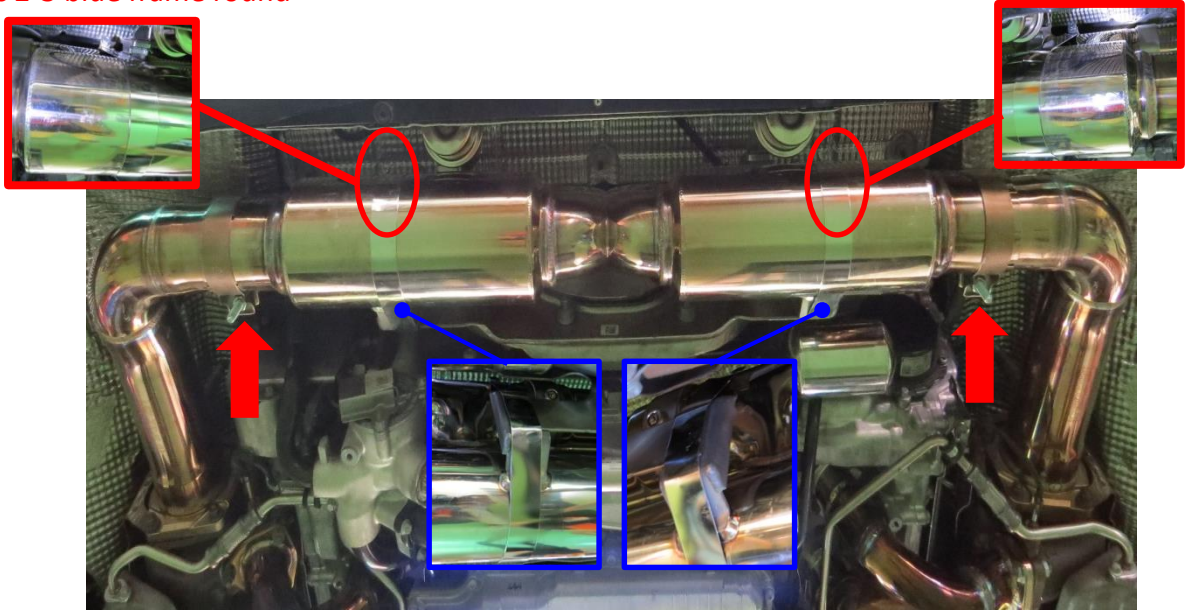


圖2-3 / pic 2-3

22N-m
16ft-lb



接管結合安裝流程 / To connect together!

7.將接管裝上使用13mm板手鎖上圖2-4紅圈處 / 7.Secure pipe use 13mm wrench. See pic 2-4 red circle.

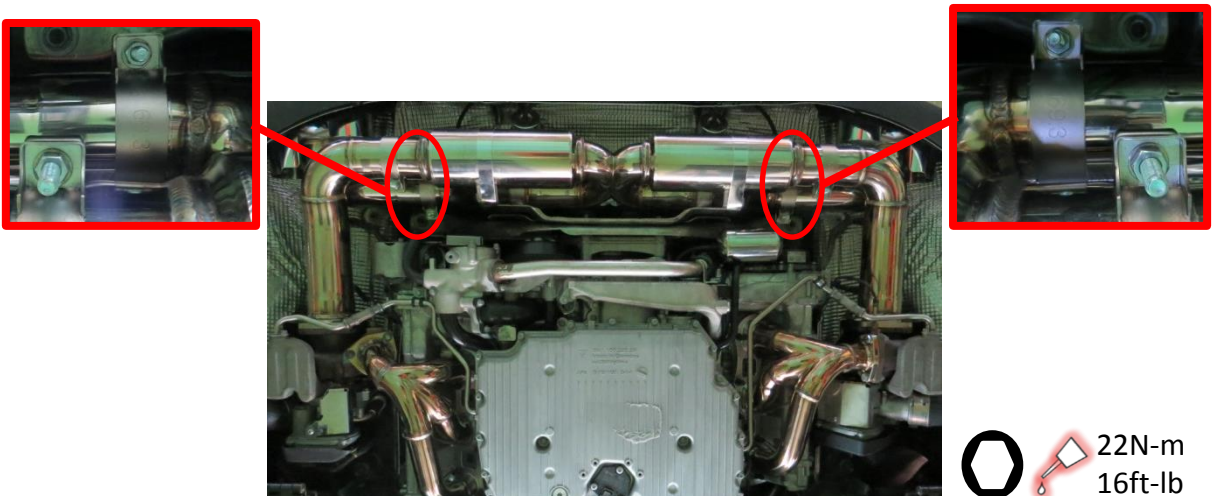


圖2-4 / Pic 2-4



22N-m
16ft-lb

尾飾管安裝流程 / Tip installation

- 8.將尾飾管裝上後使用13mm板手鎖上，調整左右間隙約10mm左右，完成後鎖緊圖2-5 / Secure tip of muffler use 13mm wrench about 10 mm spec between tip and plastic body. See pic 2-5



圖2-5 / pic 2-5

8~10頁完成iPE排氣管安裝作業~

Page 8-10 about iPE exhaust system installation.

三、iPE 閥門控制元件安裝步驟及相關重點

Step3. iPE Valve control unit installation

控制元件的零件圖與對應的连接方式圖3-1，
相關名稱說明及編號表3-1所示。Control unit components and connecting
points. Chart is part number with parts name.

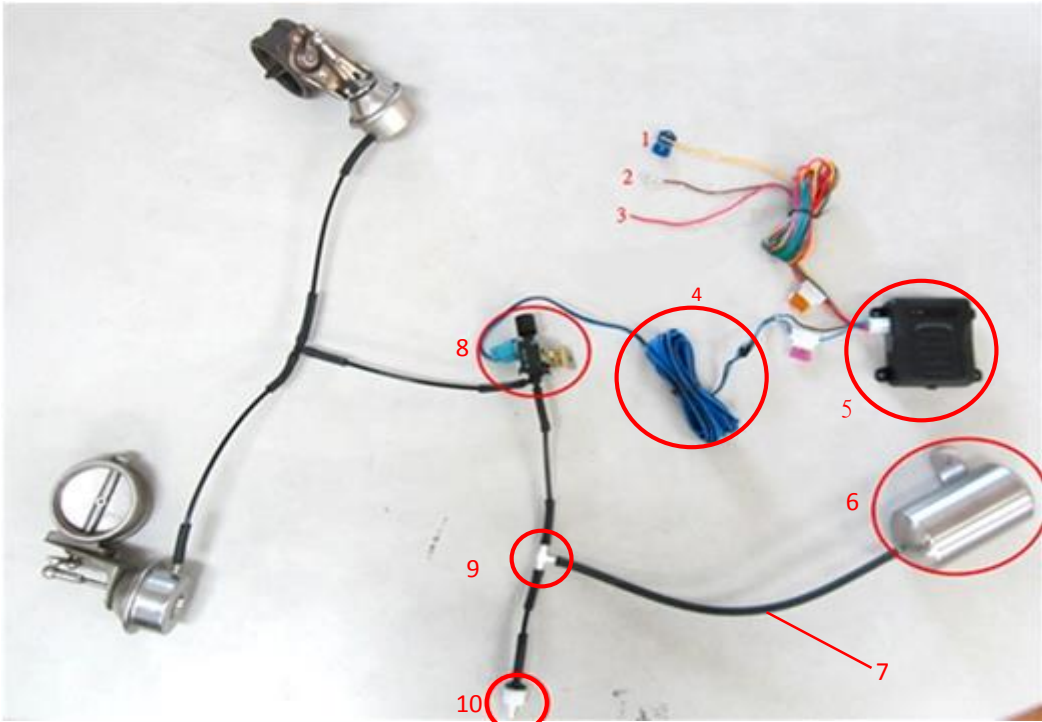


圖3-1 / Pic 3-1

表格3-1 / 3-1 Chart

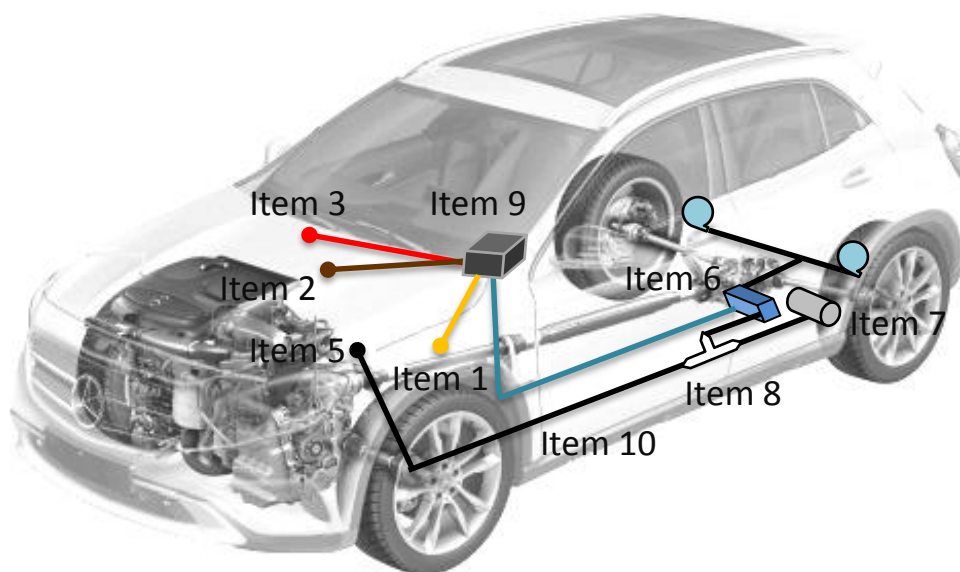
	品名 / Item description	編號 Number	品名 Name
1	黃線 / 油門訊號線 Yellow wire / Gas paddle signal wire	6	真空壓力儲筒/ Vacuum canister
2	棕線 / 接地線 / Brown wire / Ground wire	7	壓力管線 / Vacuum hose
3	紅線 / 電源線 / Red wire / power wire	8	真空電磁閥 Electromagnetic Valve
4	黑藍線 / 電磁閥控制線 / Black blue wire / electromagnetic valve wire	9	三通接頭 / 3 way connector
5	控制主機 / Valvetronic control box	10	單向閥 / Check valve

閥門控制盒組件分佈示意圖(參考圖示)

Valvetronic control unit element distribution diagram

電訊接點請依照本指導書指示的位置做接配，其餘硬體元件可依安裝者的車況條件自行設置。

Power connection should follow instruction in this manual. Other hardware component could be connected according to individual vehicle specification



控制盒線路安裝流程

Control unit install processes

- 1.將中控台左下處保險絲盒打開，將**控制盒紅色線(+ / 電源線)** 表3-1編號3跨接於**15A保險絲**圖3-2箭頭處 / Under dashboard left side fuse box. Connect red wire (3-1 chart number 3 / power wire) to where to see picture 3-2 arrow point below in 15A fuse of fuse box.

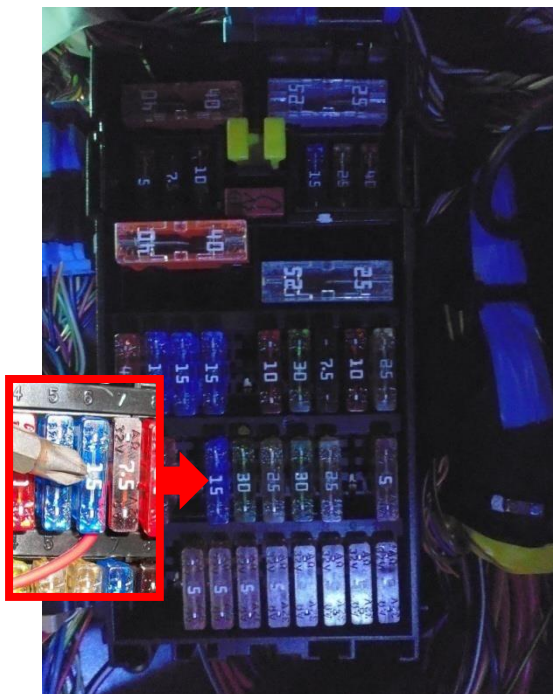


圖3-2 / Pic 3-2

- 2.將**控制盒褐色線(-)**表3-1編號2使用**10mm板手**鎖於**剎車踏板旁**圖3-3箭頭處
2. Use 10 mm wrench connect brown wire to the side for ground (see red arrow!)



圖3-3 / pic 3-3

3.將油門踏板插頭拔下後將控制盒黃色線(TPS節氣閥位置線)表3-1編號1 跨接於油門踏板訊號4號腳(黃黑色線)圖3-4所示

3. Remove accelerator pedal plug then connect yellow wire from control box with stock TPS wire (see picture 3-4 red rectangle):

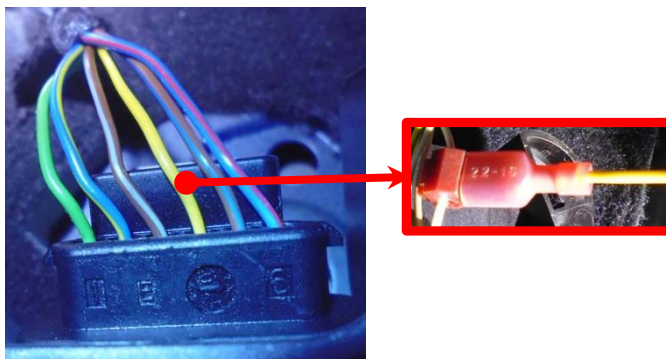


圖3-4 / Picture 3-4

電磁閥及儲壓桶安裝流程

Electromagnetic valve and vacuum cannister install processes

4.將電磁閥表3-1編號8使用E10星型板手鎖于右後輪前方圖3-5箭頭處

4. Use star wrench E10 to secure electromagnetic valve (3-1 chart number 8) on right hand side of rear tire front side! (See picture 3-5 red arrow.)

※此處電磁閥鎖點較低需將固定片上折※ Metal stand need fold such as red arrow!

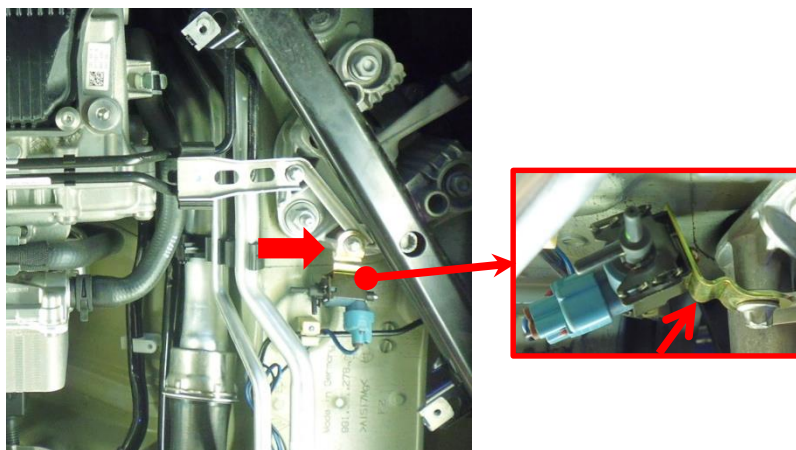


圖3-5 / Picture 3-5

- 5.將儲壓桶表3-1編號6使用E10星型板手鎖與桶身後方方圖3-6箭頭處
5. Use star wrench E10 to secure vacuum canister (3-1 chart 6 number) on red arrow show on.

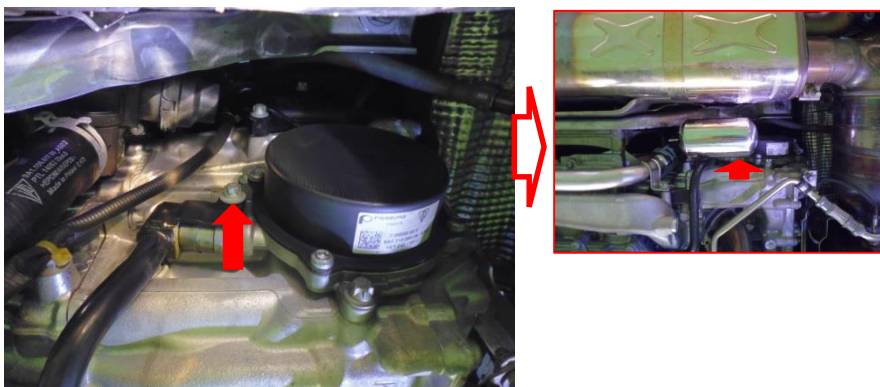


圖3-6 / Picture 3-6

- 6.跨接原廠真空源圖3-7所示 / 6.Connect vacuum canister with stock vacuum source. See picture 3-7

- ④使用三通表3-1編號9將原廠真空源跨接在連接單向閥表3-1編號10
④Connect vacuum canister with stock vacuum source and electromagnetic valve using 3 way connector. (See picture 3-7 ④ mark)
⑤使用三通3-1表編號9將真空源分接至電磁閥表3-1編號8及儲壓桶表3-1編號6
⑤3 way connector (See picture 3-1 mark) to connect on electromagnetic valve (See 3-1 chart number 8) and vacuum canister (See 3-1 chart number 6).



圖3-7 / Picture 3-7

7.將真空源接至**電磁閥**入口再由**電磁閥**出口接至排氣管閥門圖3-8箭頭處

7. Stock vacuum source connect to entrance of electromagnetic valve then electromagnetic valve hose exit to exhaust valve. (See picture 3-8 red arrow!)

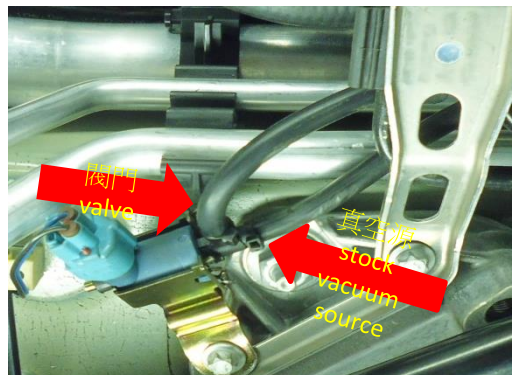


圖3-8 / picture3-8

8.將藍色**電磁閥控制線**表3-1編號4由車底延至車頭煞車泵浦旁。藍線穿入駕駛室內圖3-9箭頭處

8.Blue electromagnetic control wire through into cabin. See picture 3-9

※進入駕駛室內**塑膠蓋**先行穿孔，控制線須固定完整避免線路摩擦損壞※

8.Blue electromagnetic control wire through into cabin that plastics cover need make a hole!



圖3-9 / Picture 3-9

※控制盒設定方式可參考 **Valvetronic**控制盒設定說明 ※

About control box setup, please see control box setup manual!