

V-tech Tuning

PowerBOX Diesel

User manual

CHAPTER 1. POWERBOX – INFORMATION

PowerBOX (power modules) belong to the category of products, which modify controlling signals and sensor signals outside the engine computer (ECU). They have been designed to emulate the chip tuning effects. Such modifications may be performed in certain situations, e.g. whenever the car computer is a non-reprogrammable type.

The Diesel **PowerBOX** works with Diesel engines of the following types: Common Rail, VP-37, VP-44, PD and NipponDenso. We offer over 20 Power-Box models equipped with factory plugs, which service several hundred car models of the largest car manufacturers from Europe, USA, Japan and Korea.

WHAT DO YOU GAIN?

When connected to the engine Diesel **PowerBOX** increases the torque and power by up to 20% in comparison to the serial values.

The level of additional power can be controlled by choosing one from the 10(*) programmes offered by the device. The device can also be completely switched off.

The modified parameters of the engine do not affect its wearability.

One should remember to disconnect the **PowerBOX** device before visiting a car manufacture's authorised service centre.

(*) depending on individual capabilities of the engine

FUEL CONSUMPTION?

It stays the same provided the driving style is unchanged. If a driver prefers a dynamic driving style with sudden acceleration or high speed, fuel consumption may increase.

DEVICE WARRANTY

V-tech Tuning ensures a 24-month warranty for the product.

The warranty conditions are on the product's warranty card.

ENGINES WITH A VP-37 PUMP

VW/AUDI/SEAT/SKODA GROUP, FORD GALAXY

Take off the engine cover.

Find the fuel pump interface, double-rowed, with 8 or 10 pins (depending on the model). Photo 1

Disconnect the fuel pump interface and connect the adaptor delivered with the module between its plugs. Photo 2

Find the air mass sensor in the car (it is placed in the intake system, behind the air filter). The loose black cable coming out from the module should be connected to the pin of the highest number in the air mass sensor plug (the 5th or 6th pin depending on the sensor version). Photo 3



Photo 1. Localisation of the VP-37 pump interconnection



Photo 2. Connection of the adaptor to the VP-37 pump interface.



Photo 3. Connection of the quick-release to the air mass sensor cable.

OTHER

In the case of other engines powered with the VP-37 pump there are no industrial interfaces allowing the non-invasive installation of the module. The module installation requires soldering five module cables to the car wiring harness.



Photo 4. Localisation of the controller (ECU) in Mitsubishi Pajero 3.2 DiD

The example of connecting the module to the wiring harness in the Mitsubishi Pajero 3.2 DiD is shown in Photo 4.

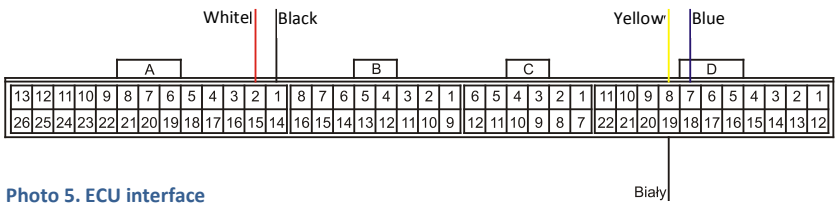


Photo 5. ECU interface

Connection of the module to the controller

ECU plug number	ECU connection pin number	Signal	Cable colour in the universal adapter
A	1	Mass	Black
A	2	Supply +12V	Red
D	8	Output 1	Yellow
D	7	Output 2	Blue
D	19	Air mass	White

In the case of other car model please contact the manufacturer of the device to obtain the connection scheme.

ENGINES WITH A VP-44 PUMP

ENGINES WITH BOSCH PSG16 PUMP – OPEL/SAAB

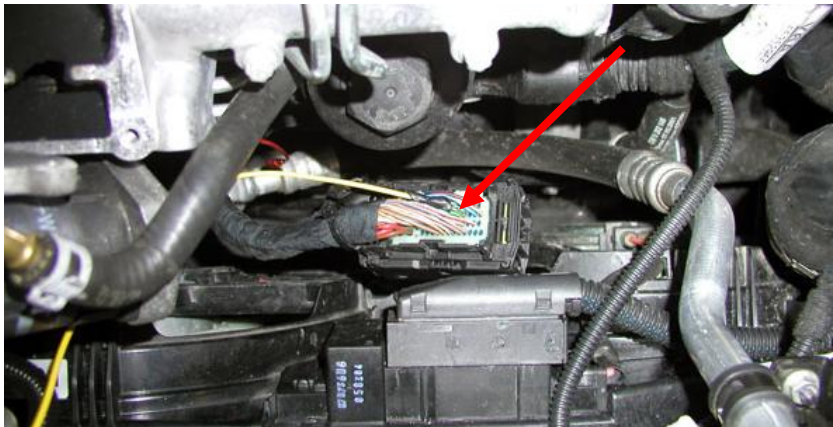
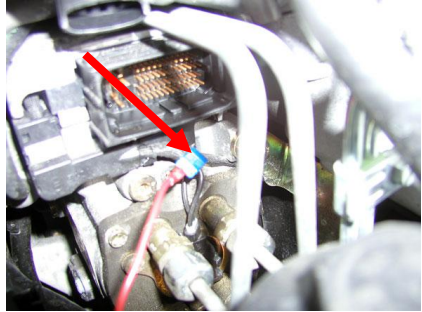
Take off the engine cover.

Dismount the EGR valve (do not disconnect the cooling fluid lines).

Disconnect the pump interconnection, on the right side of the pump.

Below this plug, there are two black cables between the fuel lines. The fused black cable should be connected to the cable which is closer to the cooler.

Solder the yellow cable to the cable coming to pin 33 in the pump plug (disconnected earlier). Connect the red cable to the positive battery post and the black cable to the negative battery post.



ENGINES WITH A BOSCH PSG5 PUMP

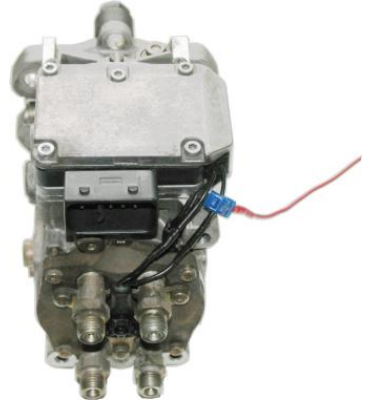
Take off the engine cover.

Connect the fused red cable to the injection pump. This cable should be connected to the upper right cable from the four black cables located near the main inter-connection of the pump.

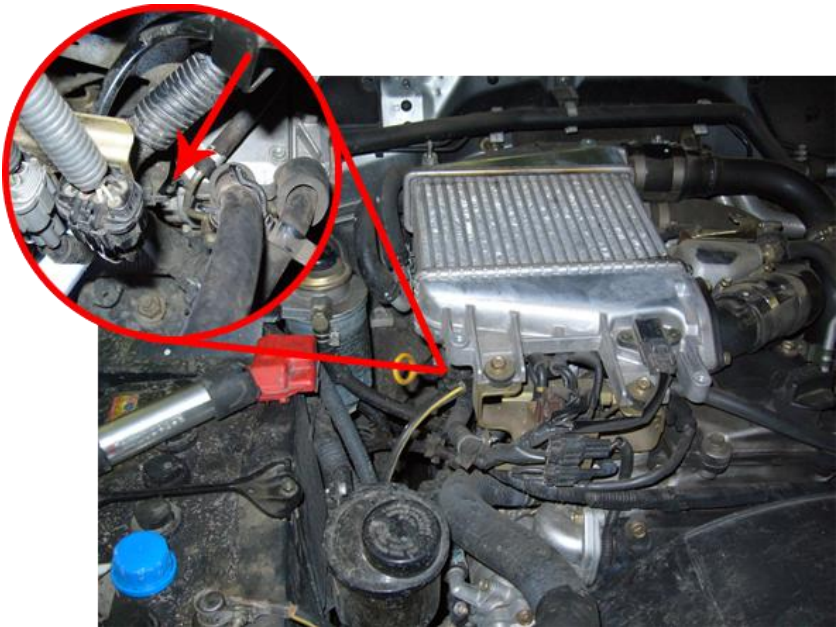
Connect the yellow cable to the acceleration pedal signal.

Connect the red cable to +12V.

Connect the black cable to the mass.



The example of the installation in the Nissan Patrol 3.0 DI is shown below.



ENGINES WORKING WITH THE NIPPON-DENSO PUMP

Take off the engine cover.

Find the fuel pump.

Connect the fused black cable to the signal line of the fuel pump.

Connect the yellow cable to the signal line of the acceleration pedal or the airflow metre. Connect the red cable to the positive battery post and the black cable to the negative battery post.

An example of the installation in the Toyota LandCruiser 4.2 TD is shown below.



ENGINES WORKING IN THE COMMON RAIL TECHNOLOGY

JTD, HDI, TDCI, CDI, D-4D, CRDI, ETC.

Take off the engine cover.

Find the original plug connected to the pressure sensor of the fuel rail.

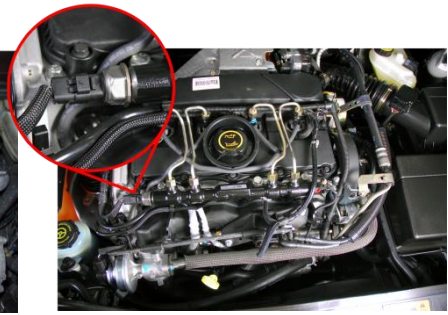
Disconnect the original plug from the sensor and plug the module adaptor between this plug and the sensor. Some factory plugs require the removal of the inserted additional cables assuring the “matching” of the plugs to facilitate the connection with the provided adapter (photo below).



The examples of the localisation of the fuel rail pressure sensors.



Fiat Multipla 1.9 JTD



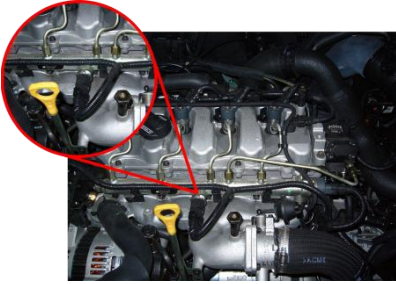
Ford Mondeo 2.0 TDCi



Kia Rio 1.5 CRDi



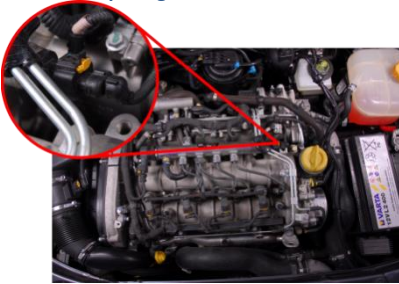
Kia Sorento 2.5 CRDi



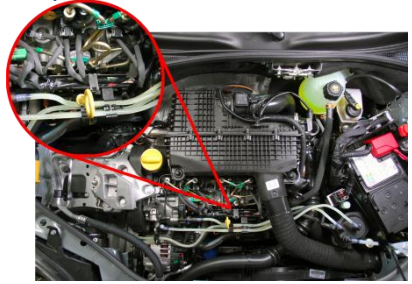
Kia Sportage 2.0 CRDi



Opel Astra 1.7 CDTi



Opel Vectra 1.9 CDTi



Renault Kangoo 1.5dCi



Toyota Avensis 2.0 D-4D



Toyota Hilux 2.5 D-4D



Toyota Landcruiser 3.0 D-4D



Volvo XC90 D5 180HP

ENGINES WITH INJECTION PUMPS

VOLKSWAGEN/AUDI/SKODA/SEAT GROUP

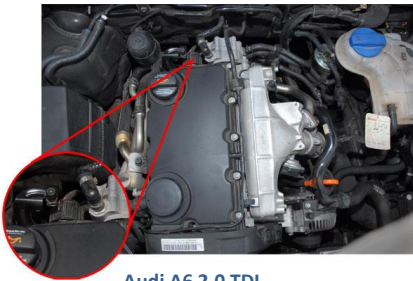
Take off the engine cover.

Find the interconnection between the injection rail and the car wiring harness. Disconnect its plug and connect the module adapter between this plug and the injection rail (photo below).



Connect the red cable coming out from the box with +12V on the battery. Connect the black cable ending with an o-ring to the mass on the battery.

Examples of injection rail localisation are shown below.



Audi A6 2.0 TDI



Skoda Octavia 1.9 TDI

CLOSING REMARKS

Fasten the module in such a way that it will not move in the engine compartment and in a place not exposed to water and high temperature. Ensure that the module wiring harness is far from any heat source and from mobile parts of the engine.

CHAPTER 3. PROGRAMME SETTING

The digital construction of the module allows one to choose the programme which is best suited to the car model, engine capabilities and individual preferences of the user. To select a programme, unscrew the rear panel of the module casing. There is a switch in the rear part of the module board allowing the selection of 1 out of 10 programmes. The “0” position sets the weakest programme, the “9” position sets the most powerful one.

The selected programme is indicated by a marker on the switch knob. In the photo the second programme is set.

Once the module is installed, check the correctness of all connections. Then the engine can be started. The programme can be changed, if necessary. In some cars more powerful programmes cause the exhaust smoke to appear. This is related to the error range of the sensor signals. To eliminate smoke a weaker programme should be set. All changes should be made when the engine is turned off and the power supply is off (the key in the ignition lock is in the zero position).

