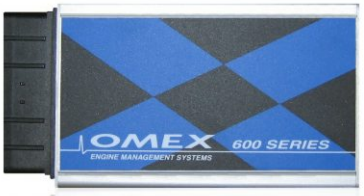
Peugeot Mi16 Throttle Body Kit

This comprehensive kit for the Peugeot Mi16 1.9 engine provides an easy and reliable high power upgrade to Omex Engine Management and Throttle Bodies. It offers a simplified way of putting together all of the required parts from one supplier at a fixed cost with one reliable source of technical backup. With our simple upgrade price list the kit can be upgrade to be used with the 2.0 derivative engines found in the 406 and 306.

Kit Contents

Inlet Manifold
Throttle Bodies
Fuel Rail
Air Horns
Fuel Pressure Regulator
Throttle Position Sensor
Air Temperature Sensor
Ready Mapped 600 Series ECU
Ready Built Wiring Harness
Instructions
Software

Inlet manifold, throttle bodies, fuel rail, air horns, and throttle position sensor are supplied built together, ready to fit the standard injectors then fit to the cylinder head.



Omex's multi-championship winning 600 Series ECU controls the fuel injection, standard ignition coil(s), and optionally, many other functions around the vehicle. The ECU is connected to the hardware with a complete, ready built wiring harness, which is fully tagged and with the correct connections made for your Mi16 engine, ensuring easy clip-on fitment, optimum performance and absolute reliability.

A fixed 3.5 bar fuel pressure regulator in a billet machined aluminium housing. Fuel pipe to go between the regulator and the fuel rail is also supplied.

The standard injectors have a high enough flowrate for a standard engine with this kit, so are re-used. Omex can supply injectors for high out-put engines.

PC Windows based ECU mapping software and datalogging analysis software is included allowing you full access to the ECU.

The air temperature sensor is mounted in the engine bay to help with air density calculations. The standard coolant temperature sensor is re-used.

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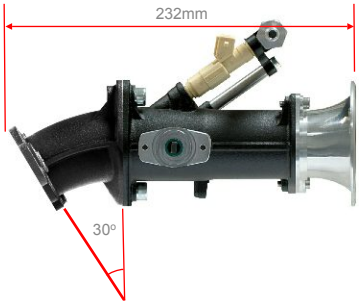
Will the kit fit?

The inlet manifold curves by 30 degrees to put the throttle bodies approximately level (dependent on the angle of engine installation). The distance from the head face to the end of the airhorn is 232mm.

A minimum of 20mm should be allowed between the end of the air horn and the air filter material. Also allow space for the movement of the engine.

All dimensions and angles are approximate



Wiring Harness Options

Standard 'Road' Specification

The standard specification harness in this kit is the 'road' specification. This harness uses thin wall, lightweight automotive grade cable loomed together with PVC tubing and harness tape; a specification similar to that found on premium modern road cars. Each harness is individually computer tested to ensure the build is correct.

Rubber connector boots

PVC tubing covered cable

Upgrade 1 – 'Race' Specification

The 'race' specification uses lightweight automotive grade cable, loomed together using motorsport heatshrink as found on nearly every professional motorsport harness for high flexibility, resistance to solvents and superior cut resistance. Within this outer, the cables are twisted together to provide resistance against radiated electrical noise from sources such as the high tension sparks, alternator and starter motor giving clean sensor signals to the ECU. The terminals connecting to the ECU are gold plated to ensure the best connections to the ECU possible to maintain the clean signals from the sensors. All joints in the harness are made with crimps rather than solder to withstand the high vibrations often found with solidly mounted drivetrains in race vehicles. The joints and the component connectors are then covered in glue lined heatshrink which is inflexible and so any tension placed on the harness during service goes onto the strong connector housings and cables and so away from the cable joint. All of these improvements together give longer service life and improved reliability in the harsh environment of a motorsport engine bay.

Heatshrink connector boots

Twisted cables in heatshrink sleeving

Heatshrink harness joints

Gold plated terminals

Upgrade 2 – Bespoke 'Race' Specification

The perfect harness should also fit perfectly. The bespoke 'Race' specification is built using the same materials and methods as the standard 'Race' specification harness, but with lengths tailored to suit your engine bay.

Heatshrink connector boots

Twisted cables in heatshrink sleeving

Heatshrink harness joints

Gold plated terminals

Bespoke lengths

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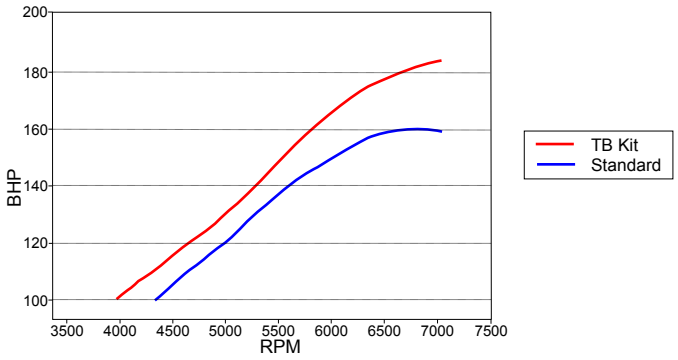
How much power will my engine make?

The power and torque graph shows the results obtained from a standard 1.9 engine in a Peugeot 205. As there are various versions of this engine we are unable to give a specific power graph but there are substantial gains to be made with all engines. Modified engine power figures are of course dependent upon the engine build specifications.



Typical Peugeot Mi16 Throttle Body Kit Power Graph

My engine has a lot of internal modifications. Do I need to change any parts?

If you have a specific inlet length you need to achieve for your engine's modifications, longer or shorter inlet lengths can be achieved by changing the airhorn lengths.
The standard throttle bodies in the kit are 45mm butterfly diameter. 48mm or 50mm can be supplied for very high output engines.
The standard injectors are suitable for a standard engine with this kit. Optional higher flowrate injectors are available for modified engines.

Will the engine pass emissions tests?

A standard engine with this kit simply needs a narrowband lambda sensor (3 or 4 wire), an effective catalytic convertor, and accurate on-engine balancing of the throttle bodies. It will then pass UK MOT and IVA emissions tests with ease. Omex can provide a lambda (oxygen) sensor and bosses to weld to the exhaust if you do not have them. A lambda sensor is not required to make the engine run, so if you have a vehicle that does not need to pass emissions tests, then a lambda sensor is optional.

Lambda sensor

Lambda sensor boss

Will the engine need setting-up?

Due to the age of these engines, most have now been rebuilt in some way and so we suggest that all engines are mapped on a rolling road or engine dyno. Therefore, you are supplied with a calibration that will start a standard engine and you have full access to the ECU, and mapping software is provided in the kit. If you have a modified engine, on request Omex will supply the most suitable calibration we have to suit your engine modifications.
The throttle bodies will need balancing to achieve a perfect idle, emissions compliance (where applicable) and smooth running.

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What else will I need?

Throttle linkage – single and twin cable versions are available. They are supplied already built onto the throttle bodies assembly and may be adjusted to give the best throttle action. The linkage can be fitted over or under the throttle bodies pulling to the left or right.

Single cable throttle linkage kit

Twin cable throttle linkage kit

Air filtration – the throttle bodies will accept DCOE / DHLA pattern backplate air filters. 'Sock' filters can be used where space is tight but they can affect airflow so should be avoided if possible.

Air filter and back plate (adds 50mm to kit length)

Air filter socks

Synchrometer - This tool measures the airflow through each airhorn to enable fine balancing of the throttle bodies. Fine balancing is recommended for all engines, and is essential for those that need to pass emissions tests. If you are having the engine set-up by a tuner then they will already have this tool.

Balancing tool

Extra ECU functions

With optional extra parts the Omex 600 ECU is capable of much more than simply running the engine;

Shift lights - a visual warning for the optimum rpm gearshift. Normally a high intensity 10mm red LED is used, but other sizes and colours are available on request.

Full throttle gearshift - gearshifts without lifting off the throttle. In the case of sequential gearboxes, even without using the clutch. Sequential gearboxes often have a switch inbuilt for input to the ECU, and those using a 'normal' gearbox can use an Omex clutch switch, signalling an ignition retard that temporarily reduces engine power output.

Launch control - consistent fast starts. A button on the steering wheel that gives a temporary lower rev limit holding the engine steady on the startline.

Radiator fan control - reduce the number of sensors, joins in the cooling system, and have full programmability of the ON / OFF temperatures for the radiator fan. An additional relay is required for this control.

Shift light (10mm LED)

Full throttle gearshift (clutch switch)

Launch control (button)

Radiator fan control (Relay and base)

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Further information

Fuel pipe – the kit is for use with push-on rubber pipe. An upgrade to dash 6 pipe fittings is available for the fuel rail and pressure regulator.
Brake servos – if your vehicle requires a brake servo vacuum, then the kit can be supplied with an adaptor pre-fitted to the manifold.
Barometric air pressure correction – If you are using the engine with large altitude changes (such as in the Alps), then air pressure changes due to the altitude changes will affect the amount of fuel required. An upgrade to fit an air pressure sensor to automatically make these changes is available.

Push-on to screw-on fuel rail and pressure regulator upgrade -6 (pre fitted)

Brake servo adaptor (pre fitted)

Barometric pressure sensor and harness upgrade

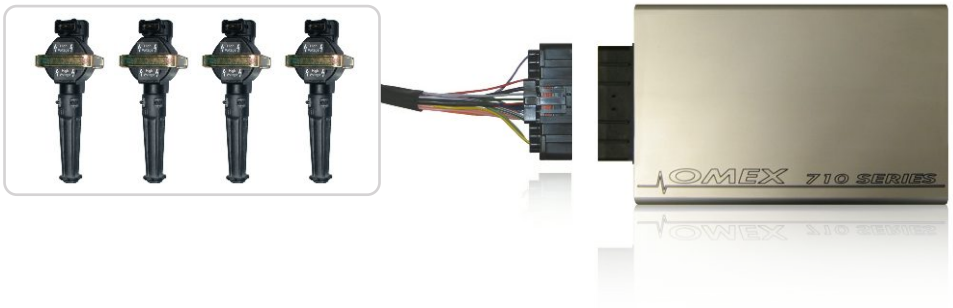
Ignition System

The standard 1.9 Mi16 uses a 'single coil and distributor' ignition. The standard throttle body kit can use this ignition type or can be used with a distributorless 4 cylinder DIS wasted spark coil pack (a coil pack is available in the price list but you will need to source your own HT leads)

Standard single coil and distributor

Omex 4 cylinder DIS wasted spark coil pack

The 2.0 variants of the Mi16 engine use coil-per-plug igintion. The standard throttle body kit cannot control these coils, so you must either change to a DIS wasted spark coil pack as above, or if you must / want to keep these coils then the kit can be upgraded to the Omex 710



Ordering Information

To enable us to write your startup calibration we need the following information when ordering a kit;

Does the engine have standard internals? (cams, compression ratio, etc)
If you are not purchasing an Omex lambda sensor will you be using your own narrowband lambda sensor on the engine?

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Why choose Omex Products?

The difference between winning and losing is very small. In hillclimbing and sprinting it can regularly be 0.05 secs, in circuit racing a half cars length, in rallying one corner.....

So what makes Omex products win so many events and championships? Simple, attention to DETAIL.

The very basics of how the ECU works makes a big difference. How it calculates when an ignition spark is going to be placed, when it's calculated, how engine acceleration is taken into account, and so ultimately how accurately that spark is placed, are things that you do not think about when looking at ECUs. Here at Omex we do because those details that are often taken for granted are the difference between one ECU system and another, the difference between winning and losing... The detailed approach to design of the basics by our team of top software and hardware design engineers, responsible for race wins throughout all forms of motorsport at the very highest levels, means you do not need to think about these details because we do. Features lists don't win races; it's how these features work that wins races. Other ECUs may have similar features lists, but how an Omex works makes all the difference. Naturally, Omex ECUs have all of the features you would expect from a top level ECU. Winning Championships is a combination of performance and reliability. Reliability is found in the details of the way the ECU is designed and built. All Omex ECUs are robot assembled in the UK on an ISO9001:2000 approved assembly line, ensuring a consistent, high quality build. They are all then thoroughly tested, twice, before leaving Omex. A well running system is a combination of ECU and many other components. It is important that all components in the system continue to work in order for the ECU to be able to perform, and so Omex source all other components such as sensors and injectors only from highly respected manufacturers.

Of course, before you can even think about winning races and championships, you need to get to the race! Omex employ only the very best engineers to ensure that whenever you contact us you get only the very best advice, right from specification of the best parts for your application, through to advice during installation, and finally, getting your engine running to its maximum potential.

And should something go wrong at any time during your ownership of your Omex ECU, the same team of technicians is available just a telephone call or mouse click away with free advice to help you through.

All these details have helped countless others win races and championships. Maybe you will be next…

Price List

Kit	Part Number	Retail	inc VAT
Throttle Body and ECU Kit to suit Peugeot Mi16 Engine	OMTBKIT040101L	£1610.00	£1932.00
Options and Upgrades			
'Race' specification wiring harness upgrade	OMEM1519(U)	£110.00	£132.00
Bespoke 'Race' specification wiring harness upgrade	OMEM1539(U)	£230.00	£276.00
Coil-per-plug Gti-6 etc 710 ECU and harness upgrade		£POA	£POA
Coil pack - DIS Wasted Spark (HT leads not supplied)	OMEM3505	£55.00	£66.00
Lambda (oxygen) sensor	OMEM2301	£55.00	£66.00
Lambda sensor boss	OMEM2351	£10.40	£12.48
Throttle linkage **single cable**	CL1-Single	£98.00	£117.60
Throttle linkage **twin cable**	CL1-Twin	£150.00	£180.00
Air filter and machined back plate	AFFB + AFBA/96	£107.00	£128.40
Air filter socks (set of 4)	OMEM9051	£44.00	£52.80
Shift light (10mm LED - red) - inc mounting bezel and cables	OMEM6003	£7.80	£9.36
Shift light (5mm LED - red) - inc mounting bezel and cables	OMEM6004	£7.80	£9.36
Full throttle gearshift clutch switch - inc cables	OMEM6010	£6.50	£7.80
Launch control button - inc cables	OMEM6011	£10.00	£12.00
Radiator fan control relay and base (fitted)	OMEM5010(F)	£25.00	£30.00
Push-on to screw-on fuel rail and pressure regulator upgrade	FPR535-6(U) + FRA/96-6(U)	£8.00	£9.60
Barometric pressure sensor upgrade, including harness modification when using standard 'Road' spec harness	OMEM2100 + OMEM1419A(U)	£95.00	£114.00
Barometric pressure sensor upgrade, including harness modification when using 'Race' harness upgrade OMEM1519(U)	OMEM2100 + OMEM1519A(U)	£100.00	£120.00
High flowrate injectors for engines over 190BHP (set of 4)	OMEM3008 (qty 4)	£200.00	£240.00
Synchrometer for balancing of the throttle bodies	OMEM9900	£46.00	£55.10
Brake servo adaptors	OMEM9100	£30.00	£36.00
USB Adaptor - for communications	OMEM002	£17.50	£21.00

Optional parts are standalone extra parts and can be added to your kit at any time. Upgrade parts, designated by a '(U)' in the part number, are upgrading parts in the kit and so are only available at the above prices at the time of kit purchase. They are available at any time, but at the full price of the part.

All information provided is, to the best of Omex's knowledge, correct at time of print. Due to differences in individual engines, differences in specification from original manufacturer that we may be unaware of, and differences in individual installations such as different exhaust designs, any claims of power or emissions cannot be guaranteed.

E&OE. VAT@20.0%

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