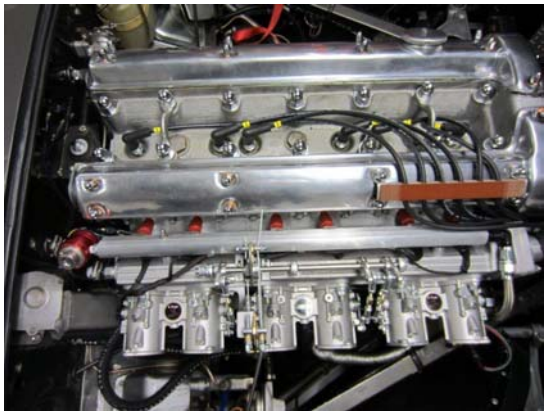
NEW RANGE
JAGUAR E-TYPE 3.8 & 4.2
HEAD PORT INJECTION MANIFOLDS
INJECTOR THROTTLE BODY MANIFOLDS
www.mangoletsimanifolds.com

NEW MANGOLETSI HEAD PORT INJECTION MANIFOLD & THROTTLE CONTROL SYSTEM
Patent Pending 0922289.4



Head port injection manifold

From a new throttle pedal and ready-assembled linkages - through to perfectly matched head ports with innovative template method

MANIFOLD DESIGN AND SPECIFICATIONS

Our objective was to design an injection system that, whilst delivering all the benefits of modern technology, and the demands of emission legislation, was also designed and styled to be discreet and sympathetic to the classical Jaguar heritage. The new throttle pedal assembly, unique linkage system, and latest injection technology, allied to a flowed and polished manifold, matched perfectly to the cylinder head, creates a classic car that drives like a modern one.

"*I had the pleasure of driving Harry's (E Type UK) EFI demonstrator a few weeks back and was mightily impressed with the smooth throttle response. Partly down to the EFI but also due to the throttle linkage."*
David Jones, Administrator, the E-type Forum.

THERE ARE TWO INJECTION OPTIONS

The Mangoletsi "head port injection" manifold system – designed and manufactured to OE standards
For the ultimate road conversion with the driving characteristics of a modern car – superb throttle response, smooth delivery of high torque, as well as substantial gains in power, greatly improved economy and emissions. Produced as an easy fit assembly, this features the **integrated fuel rail management system**, and the **unique air management gallery**, which incorporates the extra air valve, and servo off-take. See the specification sheet for supply of ECUs, throttle bodies, pressure regulators, injectors and throttle pots.
Kit comprises:-Head port injection manifold with linkage and installation components; new throttle pedal assembly, cables, port matching template and full instructions –
To fit 45mm throttle bodies - Part No. 4498-45 INJ
To fit 48mm throttle bodies - Part No. 4498-48 INJ

The Mangoletsi "injectors in throttle body" manifold system
For higher top-end road performance and general competition use - Compared with head port injection, has somewhat reduced driveability and economy, with higher emissions. No extra air valve. Integrated fuel rail management system not included
Produced as an easy fit assembly, this features the **unique air management gallery**, which incorporates a single idle air adjuster for all six ports, air feed pipe from filter and servo off-take. See the specification sheet for supply of ECUs, throttle bodies, pressure regulators, injectors and throttle pots. NOTE: As fuel rail not supplied with this kit, 3 off twin choke throttle body fuel rails will be required from throttle body supplier.
Kit comprises: Manifold for injector throttle bodies, with linkage and installation components; new throttle pedal assembly, cables, port matching template and full instructions.
To fit 45mm throttle bodies - Part No. 4497-45 TB
To fit 48mm throttle bodies - Part No. 4497-48 TB

A SHORT EXPLANATION OF COLD START & IDLE SYSTEMS

Traditional carburettor system comprises a manifold, which transfers the petrol/air mixture from the carburettor to the cylinder head. Petrol is deposited on the walls of the manifold and thus the charge is not properly atomised, giving the potential for flat spots, reduced power and poor emissions.
Idle air – A screw adjuster opens the throttle plate to admit the appropriate air for idling.
Cold start – Traditionally the choke, cable or diaphragm operated, would allow extra fuel/air into the engine.

Injection - System requirements for Injector throttle bodies

Idle air: The throttle potentiometer (pot) records the angle of opening of the throttle plate. The ECU mapping requires the throttle plate to start and return to zero degrees. At idle, a by-pass system allows air around the closed throttle plates to reach the engine. On a multi-throttle plate system six adjusters are required to admit air to each port, to set the idle revs.
Cold Start: Additional fuel for cold start can be added by over-richening the fuelling at low revs through the ECU. This is not a precise solution and obviously does not achieve the best driveability at low revs, cold start function or economy.

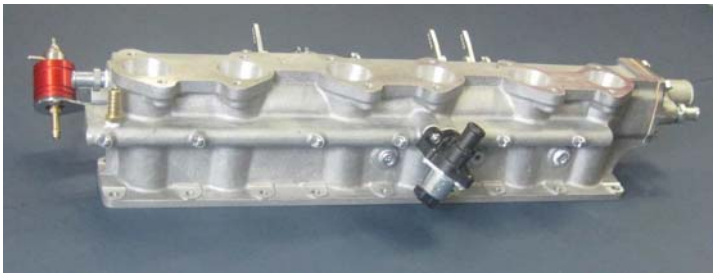
Injection Systems with programmed control of idle speed and cold start

Idle Air: All production cars control these functions through the **ECU**, via an **extra air valve**. As virtually no production cars use multi-throttle induction systems, the extra air is easily introduced into the plenum. For aftermarket multi-throttle systems, this is a substantial problem. The Mangoletsi air management gallery overcomes this problem – see below.
Cold start: The electronically controlled **extra air valve** supplies extra air when the engine is cold to match the extra fuel that the ECU is mapped to supply, as dictated by the temperature sensor and throttle opening.

TO BLEND CLASSIC SIMPLICITY WITH THE COMPLEXITY OF INSTALLING MODERN ELECTRONIC FUELLING COMPONENTS, AND ASSOCIATED WIRING, TWO IMPORTANT INNOVATIONS HAVE BEEN DEVELOPED

- **Cast-in air management gallery**
- **Integrated fuel rail management system**

The unique air management gallery is cast integrally and neatly on the underside of the manifold.



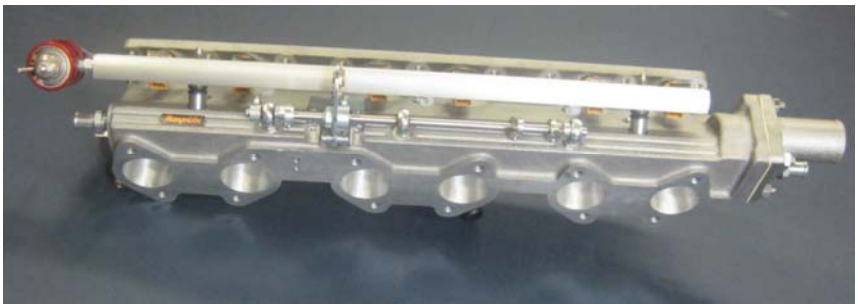
This unique solution combines **3 functions**

1. **Built-in extra air valve** services the cold start and idle air functions
2. **Single servo off-take** draws from all 6 ports removing servo related flat spots under braking.
3. **Idle Air** one adjuster services 6 cylinders (injector throttle body applications only)

The very compact **extra air valve** spigots directly into the gallery casting and the air supply to it is piped from the air filter.
The servo drillings are angled to enter the side of the ports. If the holes are drilled directly underneath the port, fuel may enter the servo system.

A well engineered, but conventional aftermarket lay-out >>>
The air gallery replaces a complex collection of brackets, tubes, auxiliary extra air manifold, connections to the 6 ports, and separate servo connection.

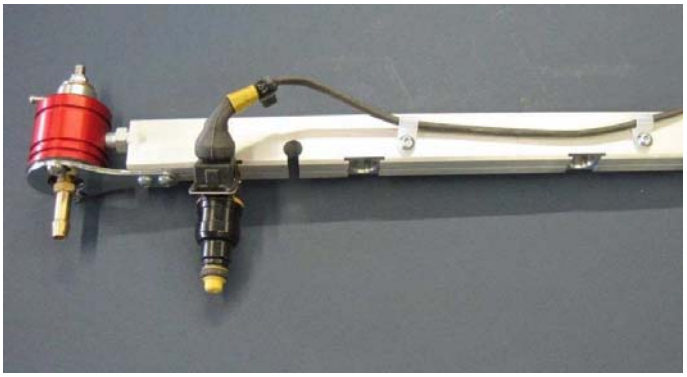
Integrated Fuel Rail Management System



The heart of the system is the custom designed extruded aluminium one-piece fuel rail, which is positioned so that either the Bosch or Pico injectors, from a normal viewing position, are virtually hidden. The curved shape of the polished fuel rail blends with the polished cam-covers.

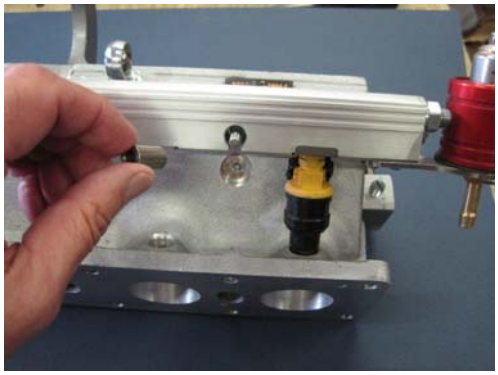
The bracket and fuel union are supplied to integrate the Webcon fuel pressure regulator. The other end is tapped to accept proprietary 90 degree fuel line unions. All piping to the fuel rail is discreetly routed.

The fuel rail is located to the manifold on two supports, which have anti-vibration dampers and ceramic heat insulators to minimise the transference of heat to the fuel rail. The fuel rail is precisely positioned so that when the injectors are clipped into the rail, they are held exactly at the correct depth in the O ring socket at the head port end.



This view shows the underneath of the fuel rail, fitted with retaining clips for the wiring loom, which can be packaged virtually out of sight.

For easy installation, the fuel rail can be fully pre-assembled with all injectors, regulator and fuel union. Then the complete assembly can be pushed into the injector sockets and the fuel rail into the key-hole slot. A bush is then inserted into the locking hole, and the whole assembly is held down by two Tuflok domed nuts.



QUALITY CASTING AND PRECISION MACHINING

Quality castings are essential for water jacketed manifolds. Mangoletsi manifolds are specially tooled to be cast by a highly mechanised specialist foundry, who produce original equipment cylinder heads, blocks and manifolds for engine manufacturers, to BS9001 quality standards. The manifolds are cast in heat treated LM25, double impregnated and pressure tested. See website – **www.mangoletsimanifolds.com/technical.**

The inlet manifold has become an important part of the preparation of concours engines. The top surfaces are carefully designed and blended with a flowing smooth profile for easy external polishing. Often the top face of E-Type manifolds has bosses, sensors and wiring on full view. The tapped bosses for sensors and wiring are hidden on the underside of our manifold. Straight ports of equal length for optimum performance – casting length 128mm – for carburettor applications add 8mm for O ring block.

Manifold Port sizes – 45mm & 48mm
Most 48mm bore manifolds are often opened up 45mm castings**. Mangoletsi 48 manifolds** are special castings, with the port diameter progressively optimised from the carburettor end to the head to deliver maximum power.

Precision Machining

Jaguar 6 cyl. manifolds require very accurate machining; drilling depths above water passages have to be exact; and positioning of port centres and stud clearance holes must be absolutely precise.

For example - The centres of the dowel holes in the port matching template must be accurate within one thousandth of an inch, to match up with the centres of the dowel holes machined in a separate operation in the manifold head face. Otherwise, once the cylinder head has been drilled off the template, the dowels would not engage with the dowel holes in the inlet manifold
.
The very latest CNC machining stations provide the extreme accuracy required for all aspects of inlet manifolds and fuel rails.

Manifold carburettor ports - CNC machined central to the fixing studs to ensure an exact match.

Manifold outlet ports are CNC machined for matching to the cylinder head ports. The OE head ports are factory bored, but the centres can be slightly out of position to each other, and also to the stud clearance holes. Even if the machining of the cylinder head is reasonably accurate, there is always up to half a millimetre mismatching that can come from the clearances in the stud holes. Perfect alignment is achieved by our unique new head port template matching system. The ports are blended to the CNC boring and then **polished for optimum performance** and a perfect match

MANIFOLD OUTLET PORT to HEAD PORT TEMPLATE MATCHING SYSTEM

Simple, accurate and quick to use.

Template 6mm thick fitted with two drill jig bushes, supplied with two dowels and 5mm drill.

The dowel holes are pre-drilled in the manifold in exact geometric relation to the ports and cylinder head stud holes.

Step one:	The port windows are slightly larger than the port diameters of the head. Place the template over the studs. Move the template around until the optimum alignment with the cylinder head ports is achieved. Tighten at least six nuts, two in the middle and two at each end adjacent to the dowels.
Step Two:	Scribe around the port apertures. Drill the two dowel holes
Step Three:	Remove template. Centralise head ports to the scribed circles with flapwheel (supplied). Insert dowels
Step Four:	Place manifold over protruding dowels – Bolt up

Reverse Port Matching
The template system has another valuable time-saving use - where the cylinder head has already been opened up, the template can be matched to the cylinder head and the manifold matched to the shape of the template.
See Template Port Matching System Full Instructions – supplied with kit

INSTALLATION AND FIT

Traditionally the standards of engineering and fit of many aftermarket components have relied on the skills of the installer, but with the high cost of labour, this is no longer acceptable. The installation costs can often exceed the cost of the equipment. We would like to thank 6 of the country's leading restorers and engine turners for their patience over two years, assisting us to develop components that would fit straight on "out of the box".

Every effort has been made to speed up the installation times. The linkage cross-bar running in the 3 rose joints comes fully assembled with the aluminium billet levers and the slotted adjustable main operating lever. The throttle pedal assembly is fully built, and fits straight back into the foot-well aperture. Full instructions are supplied, and some useful spares provided.

We accept that inevitably there will be some new situations to address. With each manifold system you receive a Feed-back form. We would welcome any information that leads to improving the product, and it also enables us to give you appropriate advice.

STANDARD E-TYPE COOLING SYSTEMS RETAINED

One of the major problems of changing the manifolding on an E-Type is re-plumbing the cooling system, which passes through the inlet manifold. In most cases the original hoses will not satisfactorily line up with an aftermarket Weber manifold and thermostat housing. With most aftermarket manifold cooling systems the by-pass system is either discarded completely or by-passes the thermostat, feeding back into the top radiator pipe**.**

The Mangoletsi manifold and thermostat housing are designed to keep exactly to the original cooling system design and flow of each model:-The internal machined slot in the manifold part of the housing is slightly wider than original for a better flow and connects directly to the hose-tail. A rebate in the flange is machined to accept standard thermostats and aftermarket ones, some of which have been found to be oversized on the main diameter. The 3.8, 4.2 Series 1 and Series 2 all have different cooling lay-outs and, for ease of fitting, the correct hose tails and moulded pipes are supplied, as shown below:-

<<< A four-stud thermostat housing, for better sealing, is designed with the by-pass hosetails below the main radiator hose. This greatly enhances the look of the engine and is designed with smooth contours to enable a high standard of polishing to be achieved. The by-pass hose-tails, clips, etc., are virtually out of sight from above.

Heater and servo Connections – **>>>**
Manifold to bulkhead moulded silicon heater pipe and stainless clips
Servo connection positioned neatly over servo tank for RHD cars. Tapped on other side of air gallery and plugged for LHD car

<<< T hermostat housing - Showing interchangeable 15mm and 7mm hose tails to connect existing water pipes for the 4.2 Series 1 and Series 2 E-Types. On the 3.8 the 15mm hose tail also connects the by-pass to the water pump via the specially moulded silicon hose

Sensor connections – **>>>**
Neatly packaged on the manifold underside. Removable plugs fitted.
No. 1 Boss (closest to thermostat housing) tapped 3/8 BSPT
No. 2 Boss (centre) tapped 12 x 1.5mm – injection temperature sensor
No. 3 Boss tapped 5/8 UNF – temperature sensor.

ALL NEW THROTTLE PEDAL ASSEMBLY

Unique design removes lost motion, gives extended leg room, adjustable pedal travel and you can customise the location of the aluminium billet pedal to the brake pedal.

There are major problems with the original equipment throttle pedal assembly and rod linkage system. The basic design already has 3 areas of substantial lost motion in transmitting accelerator pedal pressure through to the injection/carburettor levers, before taking into account the excessive wear that also occurs :-

- The pedal lever can travel up to 15mm before it engages with the linkage lever
- The RHD cast pedal box is not fitted with bearings and wears quickly
- The pedal and linkage levers, and another bush, rotate on the threaded portion of the 8mm cross-bolt.

Next, the ball end joints and swivel tree levers also have substantial lost motion, even when new. Further adverse features include:-

- A very flimsy throttle pedal lever, which bends easily, and is not normally in a good position for operating the brake and accelerator pedals simultaneously
- Many drivers find the lack of pedal travel gives very cramped leg room.
- With some Weber and injection conversions, the proximity of the end of the linkage cross-shaft to the bulkhead can, under certain circumstances, cause the throttle to open randomly under hard cornering.

The new cast pedal box replicates the original design and fits directly back on to the original bolt holes. An integral cast arm holds the outer cables. The pedal box is fitted with 22mm oilite bushes, which carry a solid flanged cross-shaft that passes through a sleeve attached to the pedal lever. Therefore there is zero lost motion, or opportunity for wear, between the two levers.

For ease of installation the pedal box comes pre-assembled, and the pedal lever has a flat section, which passes through the rectangular hole. The side view of the lever shows the new profile, which enables the lever to reach the end of the foot-well, giving substantially more leg room. A curved aluminium billet throttle plate attaches to a second pedal lever, which replicates the profile of, and bolts to, the primary lever.

The lever backing plate, to which the billet throttle plate attaches, has a matrix of three rows of three holes, so the plate can be moved laterally and up or down to provide the optimum relationship to the brake pedal.

The rotation of the pedal box linkage lever is controlled by an adjustable stop for the fully open position, and another adjustable stop for fully closed. This permits a pedal travel of between 30 – 50mm. These two stops also control the distance of the pedal plate from the end of the footwell and its relationship to the brake pedal.

High precision low friction rose joints attach the inner cables to the linkage lever. The outer cable carriers are fitted into a bushed swivel to reduce friction on the inner cable, and the outer cables (nylon lined) are supported to stop cable sag.

RHD cars – please specify when ordering.
3.8 cars with Kelsey Hayes servo - **Part no 4496**
3.8 cars without KHS and all 4.2s **– Part no 4494**

LHD cars – 3.8 and 4.2 – Part No. 4495
A new direct replacement cast pedal box has the same features as the RHD pedal box. On the LHD cars the unsatisfactory organ throttle pedal is discarded and the pendant pedal (as illustrated) replaces it.

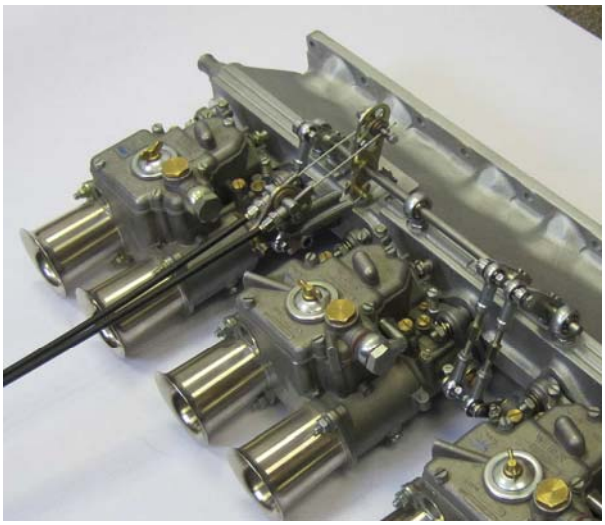
SLIDING SET-UP LINKAGE SYSTEM
Patent Pending 0922289.4

Linkage fits only Mangoletsi manifolds – not sold separately

The Mangoletsi linkage system is designed and engineered as a complete throttle control system from pedal to carburettors or injector throttle bodies.

For immediate throttle response-
Most ball joints have built-in end float, and normally rose joint spherical bearings are very stiff to rotate. Mangoletsi use aircraft standard rose joints, which rotate smoothly with zero end float. These are the heart of the system.

The main stainless steel operating cross-shaft runs in 3 closely positioned rose joints, for minimum deflection, and CNC'd perfectly in line for friction free rotation. The aluminium CNC billet levers are clamped and also permanently located with grub screws in countersinks on to the cross-shaft, all at the same angle, and in line with the carburettor levers (supplied). A left/right hand threaded hexagon adjusting bar connects the rose joints to the levers. The slotted main operating lever is bolted in to the cross-shaft. The 3 rose joints, cross-shaft and levers come ready assembled on the manifold.



Several leading throttle body manufacturers specify Mangoletsi manifolds – to show impartiality, for illustration purposes a Weber carburettor is shown.

"Sliding set-up"- absolute simplicity to set **Pedal Travel** **Spring Tension** **Linkage Stop**

Pedal Travel	Slide cable clamp assembly along slots until throttle's fully open and fully closed positions achieved - tighten
Spring tension	Slide spring/cable carrier assembly until a good balance between idle shut off and pedal feel is obtained – tighten.
Linkage stop	Having set the above, slide linkage plate stop to contact bottom of main operating lever – tighten.

All rotating components run in replaceable oilite bushes for long life and smooth operation.

SETTINGS - MANGOLETSI SLIDING SET-UP LINKAGE SYSTEM

LINKAGES AS WE KNOW THEM

Usually aftermarket linkages arrive as a bag of parts with little detailed information on assembly and set-ups to obtain optimum drivability. This table is only an illustration of the surprisingly dramatic changes that occur when relatively small changes are made to lengths, angles, etc. They create widely different rates of throttle travel and consequently, pedal feel, response, and performance progression.

DRIVING STYLE OPTIONS For illustration purposes only	Aluminium levers **Hole 1-3**	Rose joint hex adjusting bar centres	Throttle pedal travel
Long pedal travel – progressive response	**1**	**88 mm**	**48 mm**
Neutral characteristics	**2**	**93 mm**	**40 mm**
Short pedal travel – very quick response	**3**	**90 mm**	**30 mm**

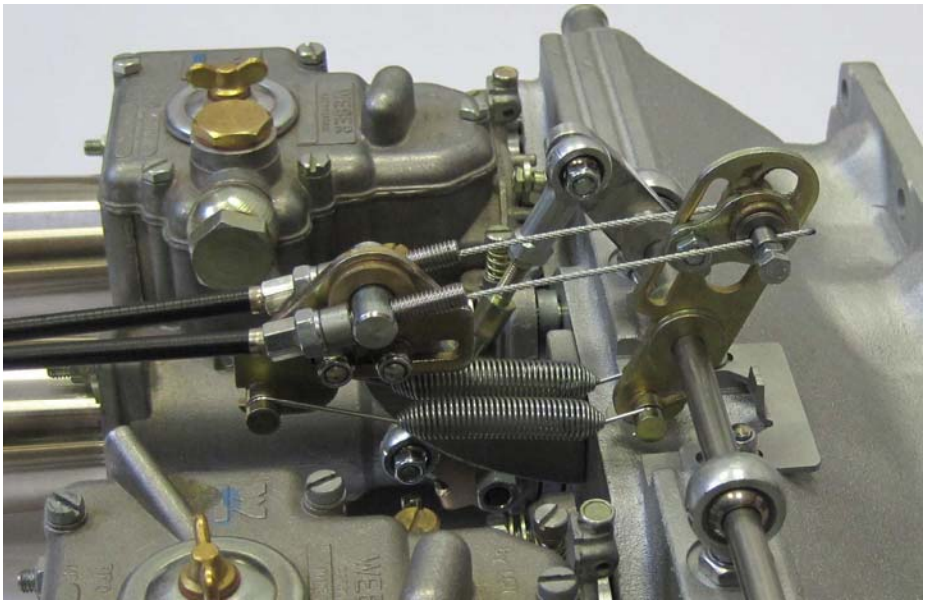
THE MANGOLETSI SOLUTION FOR SETTING UP LINKAGES EASILY AND CORRECTLY

Full instructions come with a simple table of settings. There are 3 options to provide for shorter or longer pedal travel and a slower or faster rate of throttle opening. These allow variations throughout the rev range to match your driving requirements and the engine performance curve. The ability to make these changes can transform the feel and drivability. The choice is now yours to suit your driving requirements. The unique ability to easily adjust your linkage opens up a new dimension in performance tuning.

The linkage and pedal assembly come pre-set for neutral characteristics. Fit – Turn the key – and then experiment at your leisure

CHOOSE OPTION for required driving style

1. **Set** pedal travel on new pedal assembly.
2. **Select** hole in 3 cross shaft levers
3. **Set** centres of rose joint hex adjusting bar
4. **Ensure** throttle body plates are closed
5. **Slide** cable clamp plate along slots in main operating lever to match pre-set pedal travel
6. **Set** main operating lever pedal travel stop
7. **Adjust** pedal pressure by sliding twin spring tension carrier plate



See full set-up information, supplied with the kit

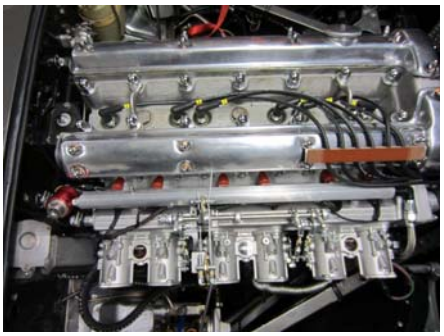
Mangoletsi DESIGN

Mangoletsi
Polished Manifolds

JAGUAR E-TYPE 3.8 & 4.2
HEAD PORT INJECTION MANIFOLD KITS

APPLICATION & PRICE LIST 2012

UNIQUE MANIFOLD AND THROTTLE CONTROL SYSTEMS Patent Pending 0922289.4



A complete kit from a new throttle pedal and ready-assembled linkages - through to perfectly matched head ports with innovative template method

Head port injection manifold kit Includes fuel rail assembly, extra air and idle air.	**Please specify when ordering**	**PART NO.**	**GB£ ex- VAT**
	3.8 or 4.2 RHD or LHD	**4497-45 HP**	**1,280**
		4497-48 HP	**1,310**

Fill in Enquiry Form (end of document) confirming specification of your car to determine which kit you require

Specification Includes:-

All models	Twin cables; (specify RHD or LHD) Spares kit – oilite bushes; Specialised hardware – nuts, washers, grub screws, Allen keys, etc. Throttle pedal assembly includes adjustable long travel lever with adjustable billet aluminium pedal plate. Silicon moulded hose with new hose tail from manifold to bulkhead – stainless Jubilee clips. Servo hosetail fitted on side of air gallery for easy connection to servo tank. Bosses on underside of manifold 5/8 UNF, 3/8 BSP, 12 x 1.5mm with removable plugs.
3.8	Thermostat housing, new hosetail, silicon moulded hose to water pump – stainless clips.
4.2 Series 1	Thermostat housing, new hosetail to connect to15mm original pipework,
4.2 Series 2	Thermostat housing, new hosetail to connect to 6mm original pipework.

Mangoletsi work with leading manufacturers who supply the fuel and air management components, and electronic hardware to provide complete systems. – see **recommended equipment and suppliers**.

Full instructions & Customer feed back form supplied with each kit - Over a two year period we have developed our new range, and up-dated our classic manifolds, in conjunction with 6 leading E-Type specialists in UK and USA. We thank them for their combined input in respect of design, fitting, engine performance and driveability, now incorporated in the final manifolds and linkages. The template matching system has been well received. However the final judgement is by the customer –,if you have any comments about the installation, we would like to hear from you. JOHN MANGOLETSI
avtman@talktalk.net

Fits "Out of the Box"
Many pre-assembled components - Quick set-up and tuning - Save time and money!

Mangoletsi
DESIGN

JAGUAR 3.8 & 4.2 HEAD PORT INJECTION MANIFOLD

UNIQUE

INTEGRATED FUEL RAIL ASSEMBLY and AIR MANAGEMENT GALLERY

One piece extruded aluminium fuel rail, blends with polished engine components and manifold, mounted on anti-vibration dampers and ceramic heat insulating washers to reduce the heat build up in the fuel rail.
Specially designed to simplify and neatly integrate all the major components. Minimises brackets, piping, connections, giving greater reliability and a professional appearance.

Equipment included:-

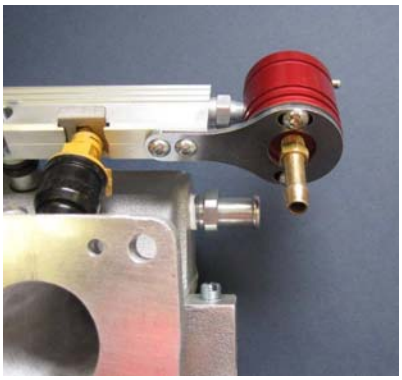
- Extruded aluminium fuel rail
- Injector clips
- Fuel rail mounting kit for Bosch injectors
- Fuel rail mounting kit for Pico injectors
- Mounting bracket, gasket, and fuel rail coupling with O ring (for fuel pressure regulator which is not included)
- Wiring clips to locate loom discreetly under fuel rail
- All hardware as illustrated below

Equipment required:-
See Ancillary Suppliers data sheet

- Fuel pressure regulator
- Injectors (manifold designed for both Bosch style and Pico injectors.)
- Loom and injector connectors.
- 90 degree Fuel Rail supply union, connects to thermostat end of fuel rail

INSTALLATION

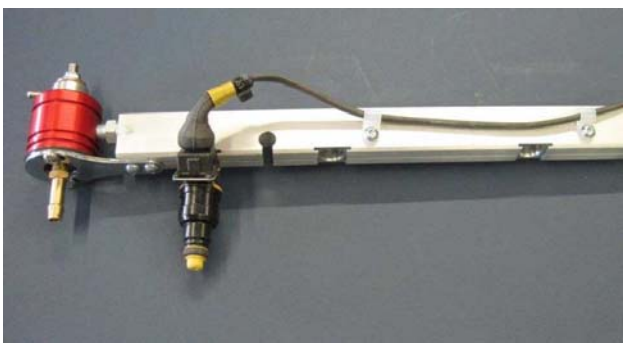
PRE- ASSEMBLE FUEL RAIL – FIG 1
The whole pre-assembly fuel rail with injector, regulator, etc is installed in one piece.



Pressure regulator - Fig 2 – remove hose tail from side of barrel and replace with fuel rail coupling – Loctite thread.

- Fit O ring to coupling
- Loosely bolt regulator to bracket with gasket in between
- Push assembly into fuel rail
- Bolt and tighten bracket to fuel rail
- Finally locate regulator coupling assembly with a gap of 2.5mm between the end of the fuel rail and the inside face of coupling union nut
- Tighten up regulator to bracket.

Fig 2



Injectors:- Fig 3

- Lubricate the O rings and push into fuel rail
- Bosch loom plug positioned underneath fuel rail
- Pico loom plug positioned on top

Fig 3

- Retaining clips – press into end groove in the injector closest to the fuel rail. - Fig 4
- The top tab of the injector clip should be positioned over the fuel rail
- Lubricate the engine end O rings

Fig 4

Loom (not supplied) – Attach to underside of fuel rail

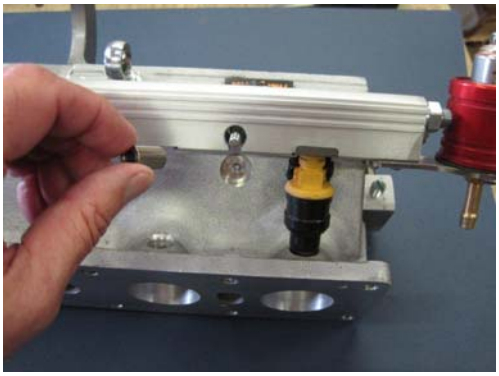
Fuel Rail Supports – Fig 5 (both Bosch and Pico supplied)
There are two pairs of counter bored sockets. Top – Bosch. Bottom – Pico. The Bosch support is the taller

- Screw in tightly with Loctite
- Fit rubber vibration damper and ceramic heat insulator.

Fig 5

Locating fuel rail assembly – Fig 4
Grease O rings. With the studs just entering the keyhole slots and injectors positioned as shown just entering the injector ports, press evenly on the whole length of the fuel rail until the injectors enter the bores and the 2 studs are central to the holes.

Fig 4



Insert the two sleeves over the studs

Fig 6

Place 5mm washers and domed nuts over stud

The domed nuts have a special Tuflok coating inside to retain them

Tighten up both nuts evenly until the fuel rail just touches the thermal washers

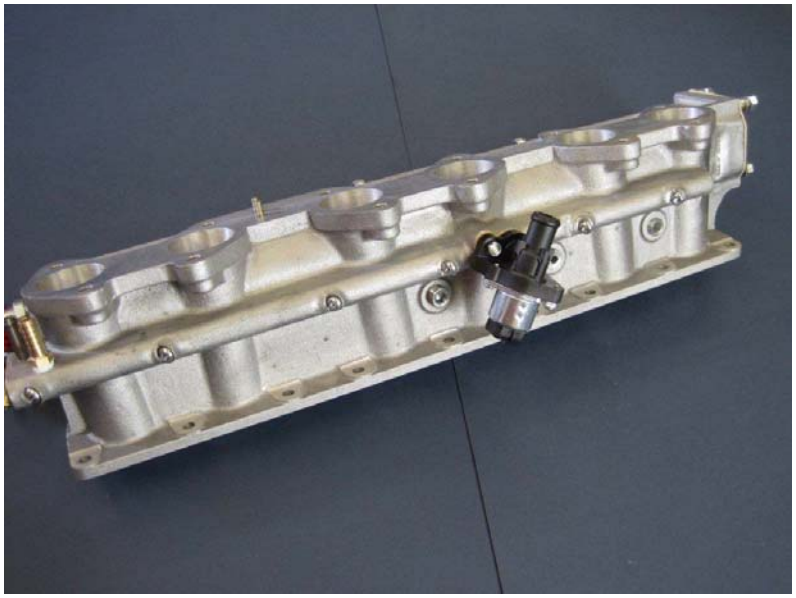
Tighten both progressively until they compress the rubber dampers by about 1.0mm

Whilst continuing to tighten, gently rock the rail until you find it firming up
DO NOT OVER-TIGHTEN

Fig 7

AIR MANAGEMENT GALLERY

ELECTRONICALLY MANAGED EXTRA AIR VALVE FOR IDLE AIR AND COLD START FUNCTIONS



The extra air valve gives full control of the idle speed, and also the temperature controlled extra air required for cold start to match the extra fuel supply. This is serviced through the unique Mangoletsi integrated air gallery. It removes the need for the additional air supply manifold which feeds all 6 cylinders, piping, brackets etc. See main specification sheet. The air gallery also supplies the servo vacuum supply taken evenly from all six cylinders.

The extra air valve and wiring loom connections not supplied with the manifold kit – see Ancillary Suppliers data sheet.

FITTING
Two studs are pre-fitted to the manifold air gallery. A gasket and staytite nuts secure the extra air valve to the cast-in air gallery. However the plastic spigot on the valve has to be reduced in length and removed 2mm below the O ring location. The air intake should be connected in to the engine side of the air cleaner system.

PROGRAMMING
For a one-off installation the programming will be carried out by the engine management programmer. Where a company has developed a standard package for use with our Head Port Injection manifold, usually a standard programme will have been developed.

JAGUAR 3.8 and 4.2
HEAD PORT INJECTION MANIFOLD

ANCILLARY FUEL AND AIR MANAGEMENT COMPONENT SUPPLIERS
ECU AND ELECTRONIC HARDWARE

Mangoletsi work with leading manufacturers, who supply ancillary components to build up a complete system. Any equivalent well-proven and engineered components can be used.

The additional components required to create a complete fuel injection system are:-

Throttle bodies with Weber DCOE flange pattern will fit with Mangoletsi manifolds.
Jenvey have worked closely with the project and have developed dedicated compatible linkage components and throttle potentiometer for the high performance and quality throttle bodies used in the complete kits.

Fuel management components
WEBCON manufacture and supply:-

Weber Marelli pressure regulators with Mangoletsi fitting kit supplied (regulator/ fuel rail connector) – fit direct to Mangoletsi extruded aluminium fuel rail (supplied for Head Port injection system only) - gives neat and reliable packaging

	Pressure	Anodised red	Anodised blue
Road use	2.5 bar	WFR325	WFR525
Race	3.0 bar	WFR330	WFR530

It is recommended that non-adjustable regulators are used. The engine will be mapped against a fixed fuel pressure. If the engine is mapped with an adjustable regulator which is then altered, the fuelling will be incorrect, so the ECU will have to be re-mapped.

Pico Injectors
Short body length. All fitting components supplied with Mangoletsi aluminium fuel rail assembly pack.

Weber Marelli fuel pumps are recommended

Fuel pump specification, fuel lines and tank delivery systems are the responsibility of the installer.

Available from other sources **Bosch Injectors** (long body) All fitting components supplied with Mangoletsi aluminium fuel rail assembly.

Air management components – head port injection system

The Weber Marelli extra air valve fits directly into the Mangoletsi idle and cold start extra air gallery. Part no. WID060.

Wiring loom parts	Connector block	Part no. 9990322000
	Pins x 4	Part no. 9990152600

Emerald Management Systems
Their ECU has provision for mapped electronic control of the idle and cold start functions.

Emerald have put together a complete package around the Mangoletsi system, with their well respected ECUs, Jenvey throttle bodies and Webcon ancilliary injection components.

Mangoletsi
Polished Manifolds

MANGOLETSI JAGUAR E-TYPE 6 CYLINDER MANIFOLD KITS

ENQUIRY FORM

Return to avtman@talktalk.net

MODEL 3.8 YEAR _____ CHASSIS NO _____

Application	LHD	RHD	Bore	Part No. Bore options
Carburettors				4490-45/48/50
Classic				4490-45/48/50 CL
Head Port Injection				4497-45/48/50 HP
Injector in throttle body				4498-45/48/50 TB

MODEL 4.2 Series 1 YEAR _____ CHASSIS NO_____

Application	LHD	RHD	Bore	Part No. Bore options
Carburettors				4490-45/48/50
Classic				4490-45/48/50 CL
Head Port Injection				4497-45/48/50 HP
Injector in throttle body				4498-45/48/50 TB

MODEL 4.2 Series 2 YEAR _____ CHASSIS NO _____

Application	LHD	RHD	Bore	Part No. Bore options
Carburettors				4490-45/48/50
Classic				4490-45/48/50 H
Head Port Injection				4497-45/48/50 HP
Injector in throttle body				4498-45/48/50 TB

NOTES – Please give any information that may affect installation space

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_____

NAME _____

COMPANY _____

LANDLINE _____ MOBILE _____

EMAIL _____ FAX _____