LANDIRENZO OMEGAS

date 13/10/2009

DATA SHEET N.:	**LOGAN-VAN-UP_16_09_K7MF7_Lm_G_000**
SYSTEM:	**LPG**
MANUFACTURER NAME:	**DACIA**
TYPE OF VEHICLE:	
MODEL / SWEPT VOLUME:	**Furgovan - Pick-up / 1598 cc.**
VEHICLE CATEGORY:	**[M1]**
INJECTION TYPE:	**Multipoint**
ENGINE SERIAL NUMBER / POWER:	**K7MF7 - 64 kW**
ANTI-POLLUTION CLASS:	**[EURO 4] - 2002/80/CE-B**
R 115 APPROVAL:	**N°: _ _ _ _ _ _ _ _ _**

MATERIAL REQUIRED:

OMEGAS PLUS LPG KIT Dacia LOGANVAN 1.6 K7MF7 complete 604 700 882

Program installed in ECU:
The electronic gas injection control unit is already programmed when supplied.
A copy of the ECU programming file is available on the Web site www.landi.it (password-restricted area) in the folder with the same name as the technical data sheet.

SPARE PARTS:

Pressure regulator LI02	536 731 000
Filter	161 026 001
4-cylinder boxer injector rail RGI 25-65	238 278 000
Manifold nozzles (1 item)	236 453 100
ECU Logan VAN K7MF7 1.6 L	616 722 000
LR switch	425 301 000
Complete wiring loom	612 637 000
Fuel filler valve	613 111 000
External toroidal tank 52 L 650x225	680 814 001
Multivalve kit 220-225/0°	660 820 001
LC02 ECU . fitting kit	620 378 000
LC02 ECU . fitting kit (optional)	620 899 000

WARNINGS
Please do not just refer to this installation sheet, also see the OMEGAS Component and Installation Manual.
This installation sheet is for the **FURGOVAN** and **PICK-UP** fitting with the following accessories:

[X]	POWER STEERING	[X]	CLIMATIZER	[X]	MANUAL GEARBOX	[5]	SPEED + REVERSE
[X]	ABS	[ ]		[ ]	AUTOMATIC GEARBOX	[ ]	

Before starting installation, it is advisable to verify that the mechanical components can be positioned as shown in Photo "F1" . The lack or presence of accessories with reference to those listed above could also entail changing the arrangement of the mechanical components.
As the use of pipes of different lengths may affect the operation of the system, it is advisable to use lengths that are as close as possible to the values shown in the chart.
If there is no choice but to use a length that is significantly different from that shown in the sheet, please contact the LANDI RENZO Technical Services Dept.
The tank has a lifespan of 10 years from the date shown on the ID plate (see tank section)

So as to protect the vehicle bodywork from rust caused by holes bored to fit LPG system components, we recommend that you use an anti-rust product.

To facilitate the positioning of components, some diagrams have this symbol: ⇒
The arrow shows the driving direction of the vehicle.

POSITIONING OF COMPONENTS

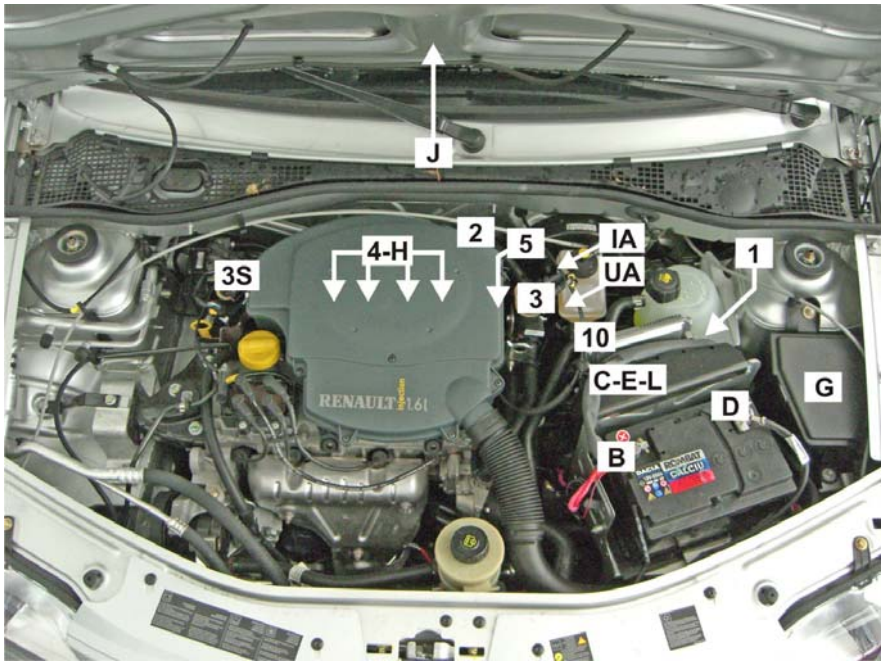


Figure 1

MECHANICAL COMPONENTS

1) Pressure reducer Filter
2) Injector rail
3) Injector rails with
3S) sensor.
4) Injector nozzles
5) Absolute pressure intake point
IA) Reducer water side
UA) Reducer water discharge

ELECTRIC PARTS

B) Power supply (positive)
C) Lambda probe
D) Power supply (earth)
E) Engine RPM signal
G) Coolant temperature sensor
H) Ignition on/Injector cut off wiring harness
J) Switch
L) Sensor errors
10) ECU

PNEUMATIC CONNECTION DIAGRAM

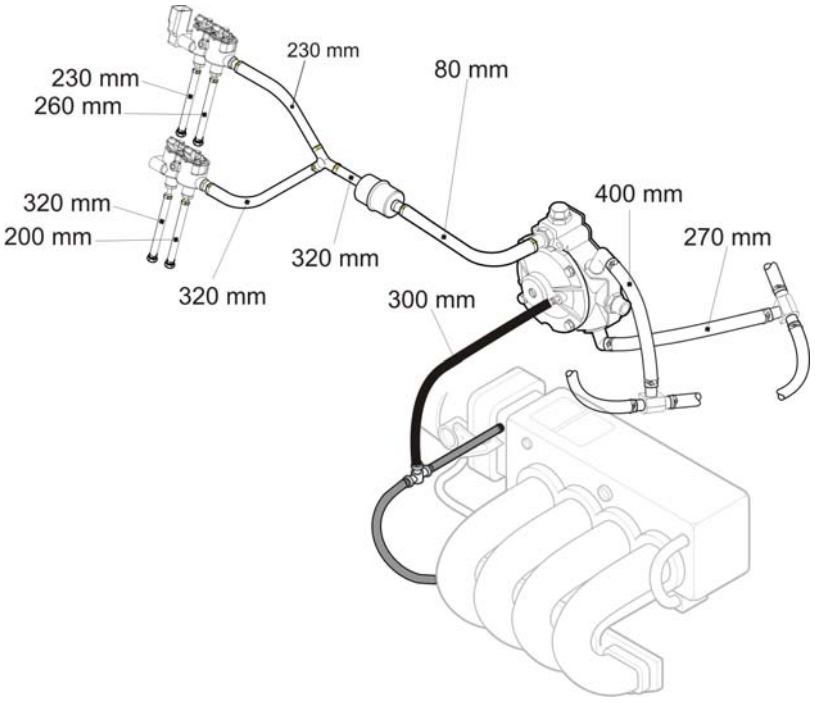


Figure 2

Ø **14X22** mm pipes
regulator/filter
Length mm. **80**
Filter / Y
Length mm. **320**

Y / injector rail with sensor
Length mm. **230**
Y / injector rail without sensor
Length mm. **320**

Pipe Ø **6X13** mm
rail/nozzles
Length mm. **200÷320**

Ø **15X23** mm pipes
regulator heater
Length mm. **400**
Length mm. **270**

Pipe Ø **5X10** mm
Regulator / "T" Joint
Length mm. **300**

1) PRESSURE REGULATOR

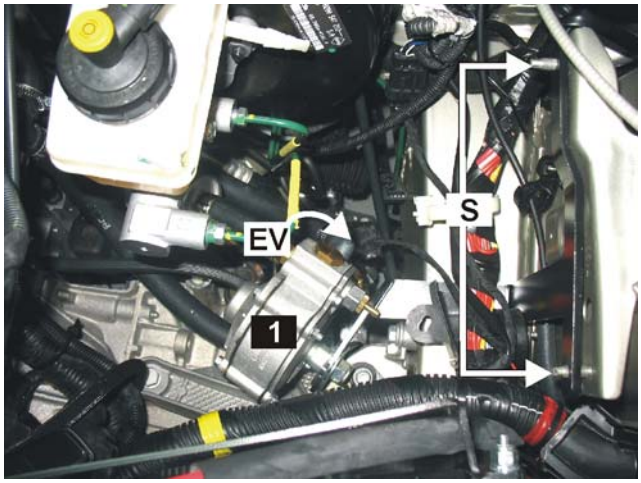
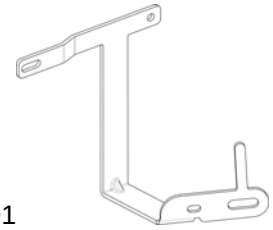


Fig.3

Position the regulator under the coolant expansion tank. Use the coolant expansion tanks bolts to mount the bracket (drawing D1) on the driver's side shock absorber bell housing at points "**S**".
Protect the cable for opening the engine compartment near the regulator bracket with a length of "**PT**" (Ø 6x13 mm) hose.
Note
The regulator bracket must pass under the original wiring "**CO**" (see drawing below).


D1

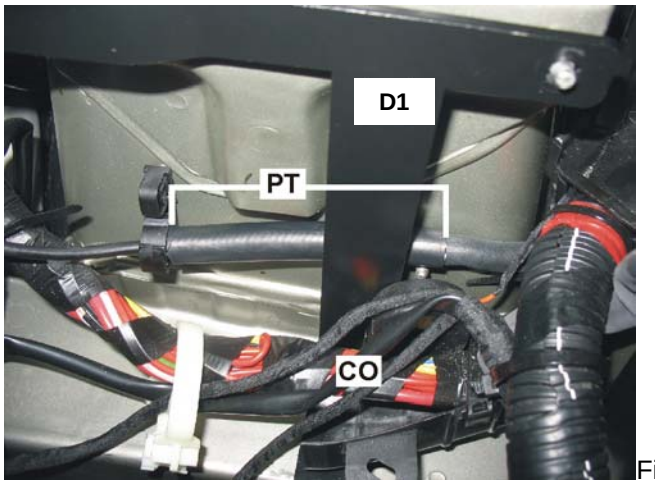


Fig.3a

Position the regulator with the solenoid valve "**EV**" face down so that the overpressure breather is in contact with the bracket pin.
Use a jubilee clip to secure the gas outlet pipe.

HEATING PIPES OF THE PRESSURE REDUCER

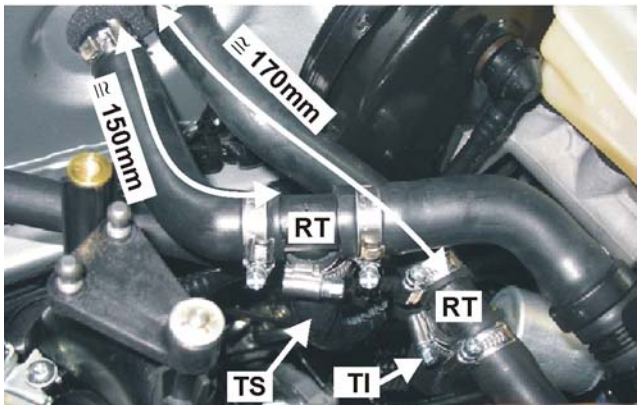


Fig.4

Fit the "T" joints to the regulator water hoses using the same lengths as shown in the pneumatic connections diagram on page 2 (Fig.2).
Cut the original hoses to the heater radiator. Cut the left hose to measure about 170 mm from the bulkhead and the right hose to about 150 mm.
Fit the joint "**RT**" to the original hoses and connect hose "**TS**" fitted to the upper regulator joint to the original right side hose.
Fit the remaining hose "**TI**" to the second hose going into the passenger compartment.
Use the jubilee clips provided in the kit to fix the water hoses to the couplings.

2) FILTER

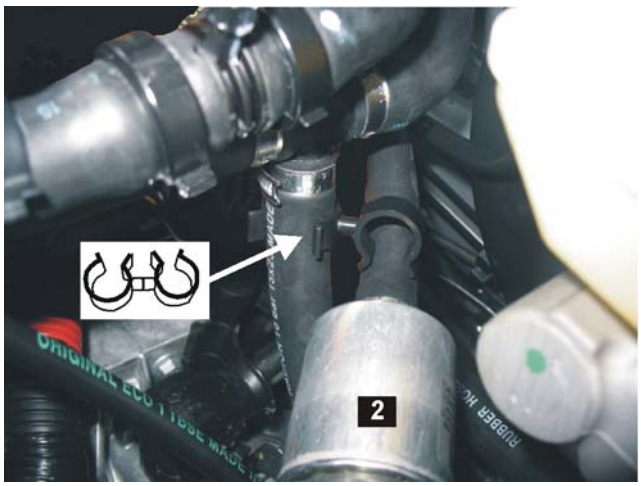


Fig.5

Position the filter underneath the brake servo reservoir.
During installation, make sure to follow the inlet/outlet flow directions shown on the filter.
Use the YELLOW clips provided to fit hoses.
Fit a support clip between the gas hose and the water hose connected to the lower pressure regulator lower coupling.

Y JOINT

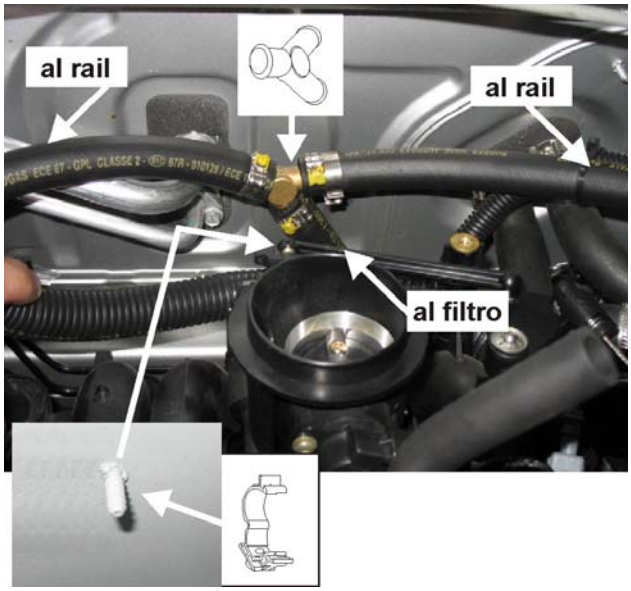


Fig.6

Fit the hose support clip shown to the "tucker" on the bulkhead (see drawing).
Fit the hose from the gas filter to the previously mentioned hose support.

Split the gas hose going to the injector rails.
Position the "**Y**" joint behind the throttle body using the lengths indicated in diagram 2 on page 2.
Use the YELLOW jubilee clips provided to fit the hoses to their couplings.

3S) INJECTOR RAIL with sensor

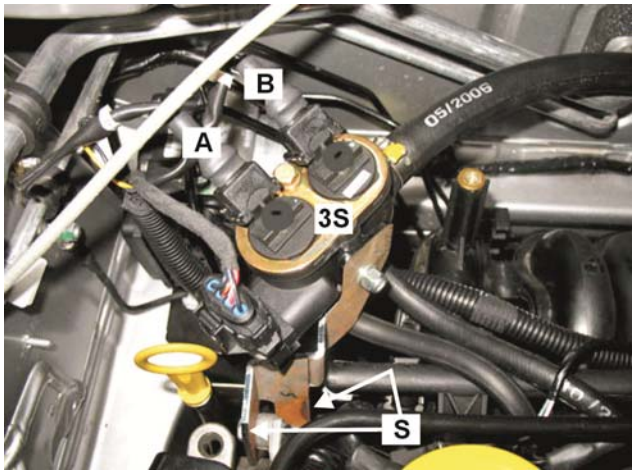


Fig.7

Position the injector rail with sensor behind the intake manifold on the passenger side of the vehicle.
To mount the gas rail bracket (see drawing D2) use the oil dipstick bolts and one of the bolts behind the cylinder head (ref. "**S**").
See drawing below.
Use a YELLOW jubilee clip for the gas inlet hose and a PURPLE clip for the outlet.
The hoses to the nozzles for cylinders 1-2 pass over the petrol rail.
The injector rail cable "A" is to be connected to the gas injector for cylinder number 1.

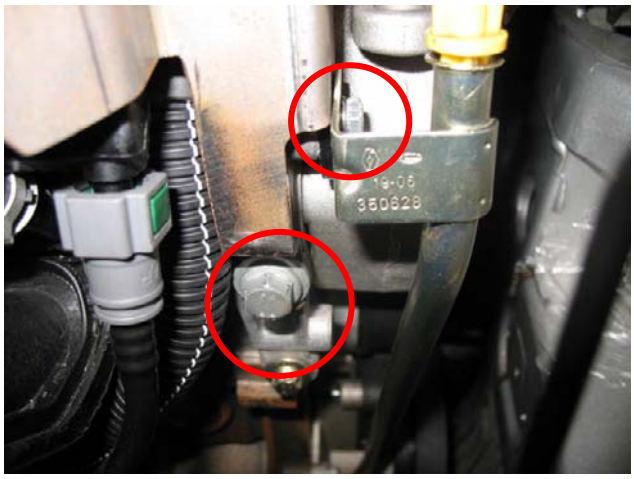


Fig.8

Details of bracket fitting points seen from behind the engine.


D2

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3) INJECTOR RAIL without sensor

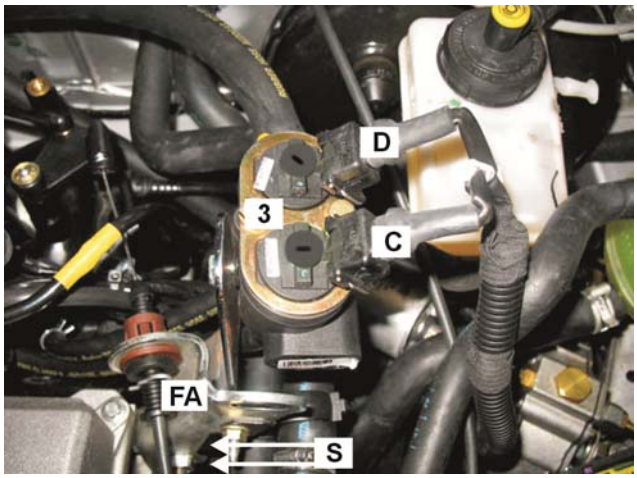


Fig.9

Position the injector rail behind the accelerator cable "**FA**" clamp.
To fit the gas rail bracket (drawing D3) use the same bolts as for the accelerator cable clamp (ref. "**S**").
Use a YELLOW jubilee clip for the gas inlet hose and a PURPLE clip for the outlet.
The injector rail cable C is to be connected to the gas injector for cylinder number 3.


D3

Fig.10

View of the rail bracket from the left wing.

4) INJECTOR NOZZLES

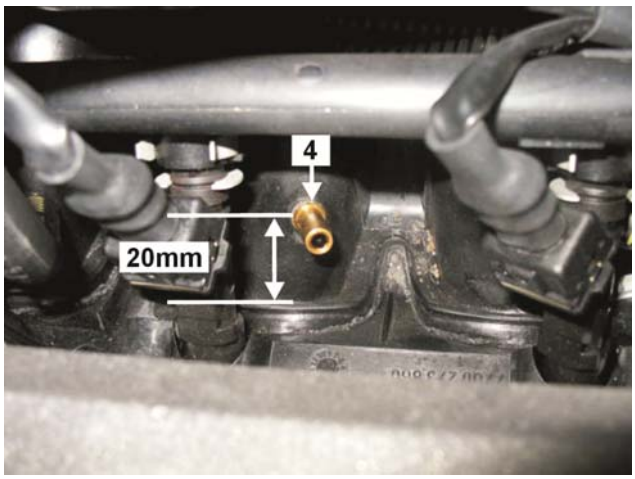


Fig.11

Bore holes on each intake branch of the manifold at 20 mm from the manifold itself, not at the centre of the manifold but slightly to the left as shown alongside.

Use a Ø 4.75 mm bit and thread with an M6 x 1 tap.
ATTENTION
Use a thread sealant (or similar) when fitting the nozzles to the manifold. Use the spring clips to fix the pipes to the nozzles.

5) ABSOLUTE PRESSURE INLET POINT (MAP)

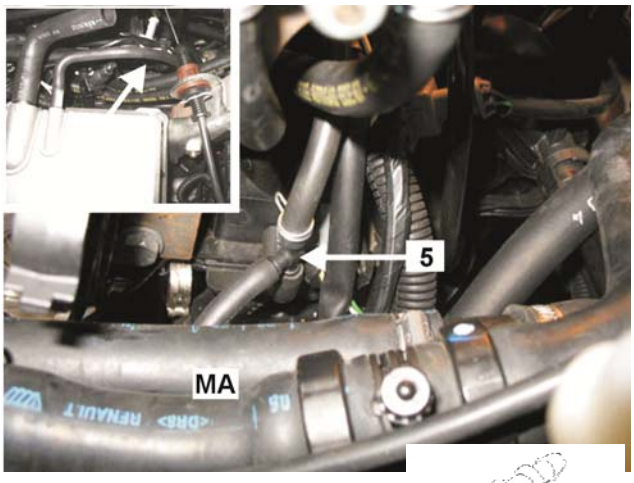


Fig.12

Cut the original hose from the cylinder head (see photo) to match the water hoses "**MA**" going to the heater radiator.
Fit the "T" joint and attach the hoses with spring clips.
Use the same length of MAP hose as that shown in fig.2 on page 2.
The MAP hose to the regulator is fitted to the regulator heater hoses with two plastic clips.

(side view from left wing)

10) INJECTION MANAGEMENT UNIT

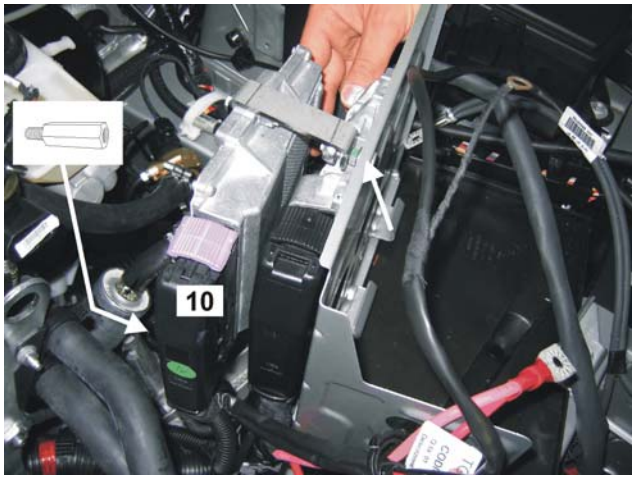


Fig.13

The injection management unit is positioned behind the petrol injection ECU.
Fit the stud bolt to the lower stud of the petrol ECU.
Fit the bracket (drawing D4) to the gas ECU as shown keeping the longer arm uppermost so that the connector is facing the engine and the wiring connectors are pointing downwards.
Fix the bracket to the previously fitted stud and to the upper bolts of the petrol injection ECU.
Make sure that the fuse box and the programming connector are visible.

D4 

10) FUEL INJECTION MANAGEMENT UNIT (optional version with cover on petrol ECU)

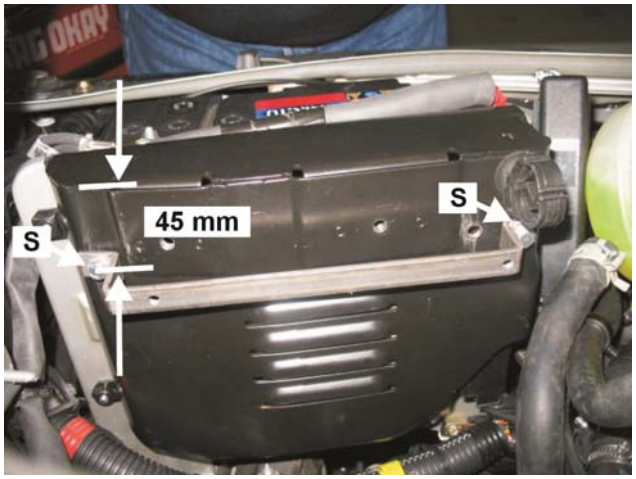


Fig.14a

ATTENTION
A special bracket kit is required to install the gas ECU. The kit code is: **620899000**
The injection management unit is positioned behind the petrol injection ECU.
Undo the metal cover from the petrol injection management unit. Use the bracket (see drawing D5) as a drilling template. Bore 2 x Ø 9 mm holes, (ref."**S**") 45 mm from the upper edge of the petrol ECU horizontally centring the bracket.
Fit the threaded inserts to the original cover and the bracket.

D5 

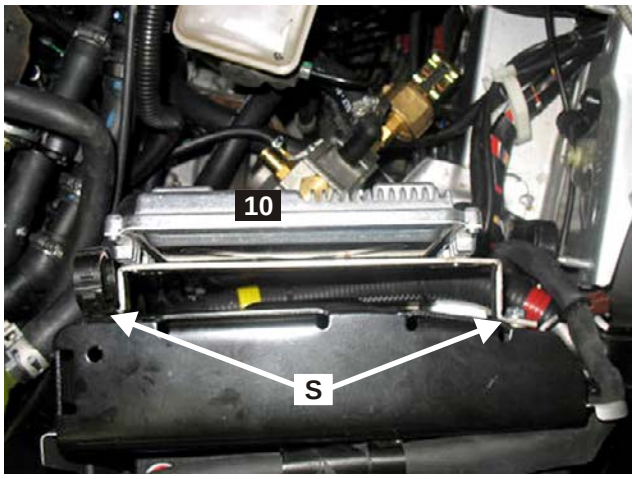


Fig.14b

Mount the ECU with the connector facing down as shown alongside.
Make sure that the fuse box and the programming connector are visible.

J) SWITCH

Fig.15a

The wiring harness to the switch enters the passenger compartment through the original cable gland to the left of the brake servo.

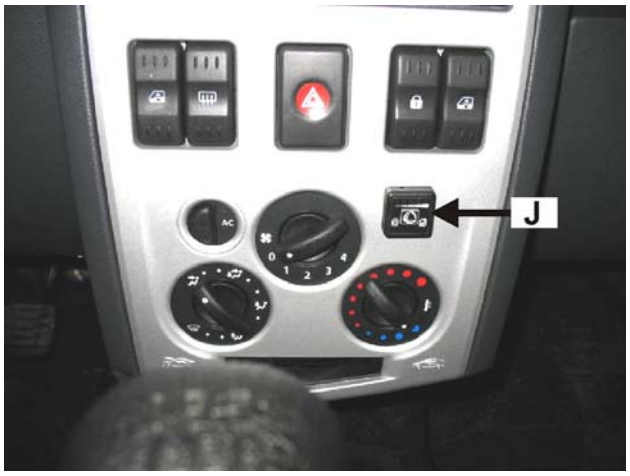


Fig.15b

Fit the switch to the central console on the same side as the fan speed knob so that it is symmetrical with the AC switch.

Drill a Ø 12 mm hole.
Remove any dust from the dashboard and fix the switch in place using a bi-adhesive compound.

T) TANK - FURGOVAN version

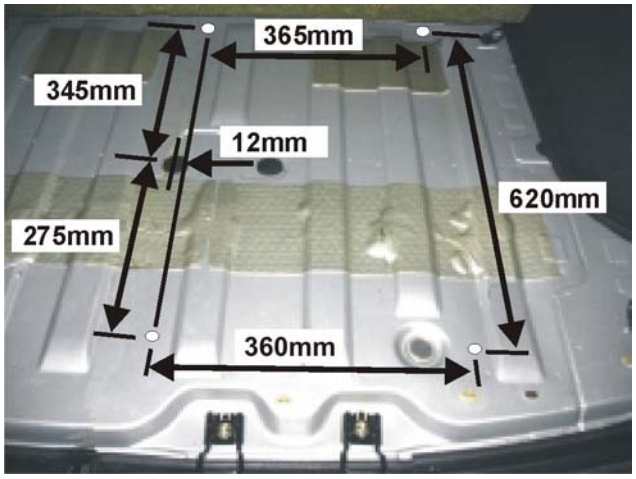


Fig.16

The tank is housed where the spare wheel normally sits.
Remove the spare wheel and fittings.
Starting from the left bung in the middle of the load area:
- Go 12 mm to the right;
- Mark points 345 mm towards the front and 275 mm to the rear of the load area.
- Using tank brackets "**D6**" (rear) and "**D7**" (front) as templates, mark where the holes are to be drilled on the right of the load area;
Bore the holes on the load area with a Ø 12mm drill bit.
Apply anti-rust treatment to the holes

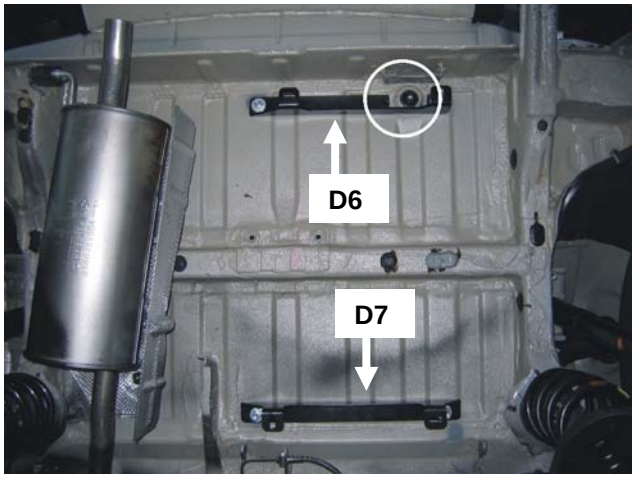
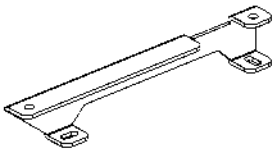


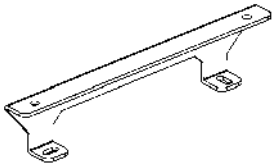
Fig.17

(view from under the vehicle)

- Mount the tank brackets as shown in the photo Use button head screws to fit to the load area.

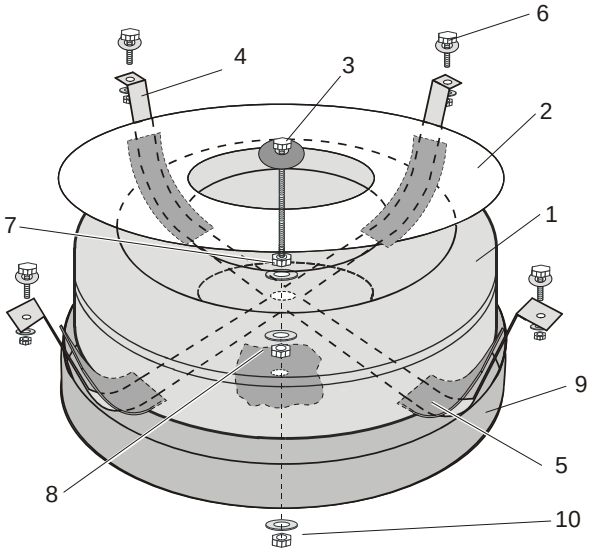


D6 (rear)



D7 (front)

NOTE *On the PICK-UP version, each of these brackets is positioned rotated horizontally, one over the other.*



D8

Exploded view of tank

1	Tank
2	Insulating disk
3	Threaded stud with nuts and washers
4	Retaining strap
5	Rubber protection
6	Bolts, nuts and washers for retaining strap
7	Lock nut and washer for threaded stud
8	Self-locking nut and washer for retaining strap
9	Undertank protection
10	Nut and washer for undertank protection.

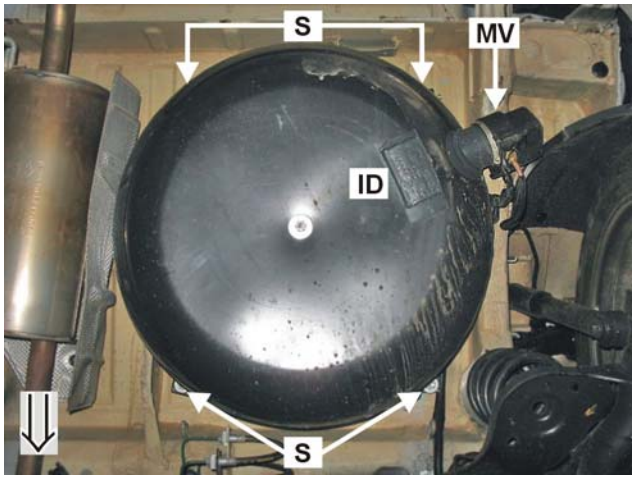


Fig.18

The photo shows the tank after installation. The multivalve "**MV**" is facing the rear of the passenger side wing.

"**S**" bracket fixing points.
ID" tank identification plate

(view from under the vehicle)

T) TANK - PICK-UP version

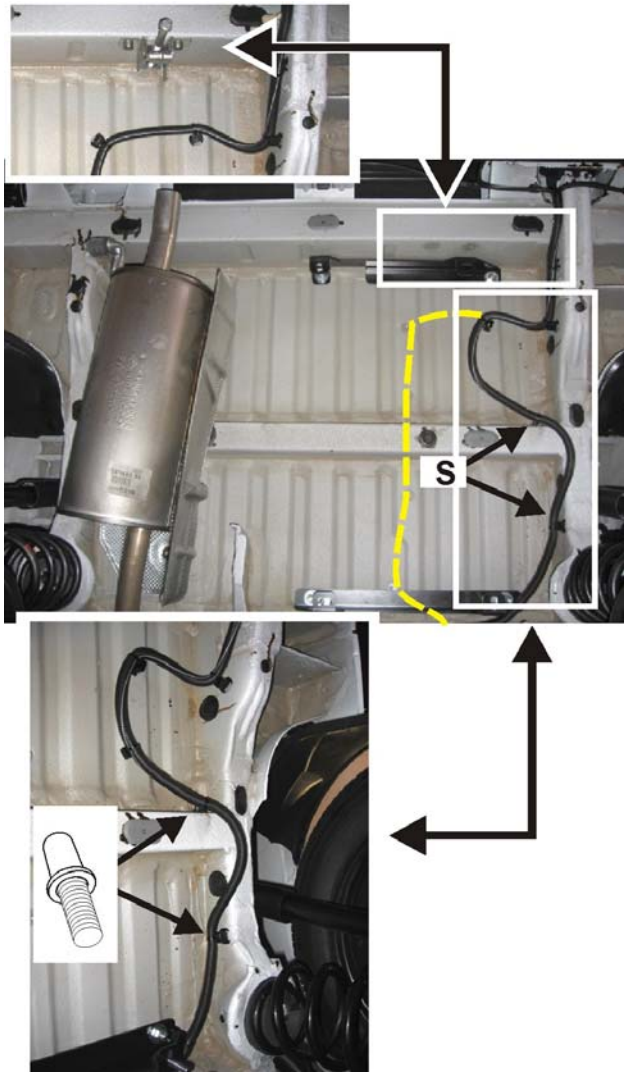


Fig.19

The tank is housed where the spare wheel normally sits.
Remove the spare wheel and fittings (see top photo)

Reposition the wiring to the rear light cluster.
Drill 2 x Ø9mm holes on the chassis strut and cross member (ref. "**S**") so as to allow the wiring loom clips to be attached. If this is not done, the loom will be too taut or slack.
Apply anti-rust treatment to the holes
Fit the threaded inserts and tighten the clamp using a drop of thread sealant (or similar).
Lastly, fix the wiring in the clamps.

(view from under the vehicle)

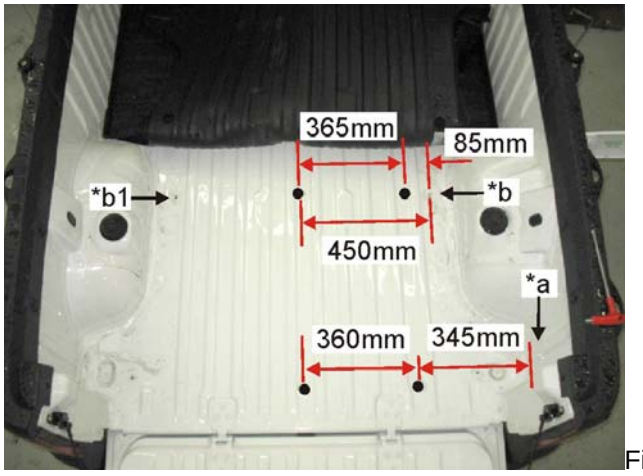


Fig.20

Drill the Ø 12mm holes in the load area using the sizes shown alongside and as in the following photos.

Rear holes

Starting from the right side of the load area ref "***a**":
- measure 345 mm to the left;
- measure another 360 mm to the left;
(705mm in all)

Front holes

Starting from the original front right hole in load area ref "***b**":
- measure 85 mm to the left;
- measure another 365 mm to the left;
(450mm in all)

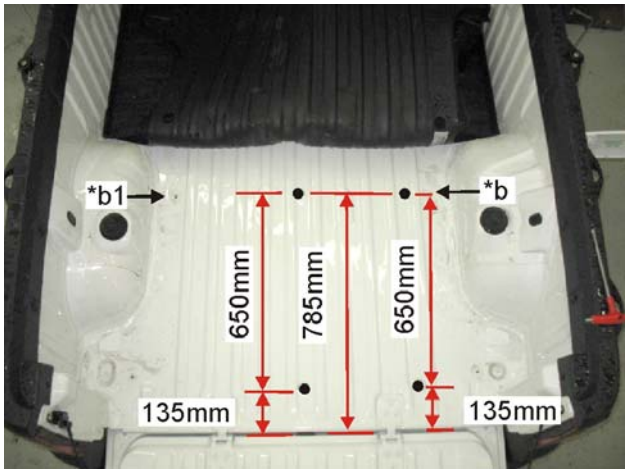


Fig.21

Rear holes
Starting from the rear of the load area ref "*a":
- measure 135 mm to the front;

Front holes
Starting from the rear of the load area.
- measure 785 mm to the front (650 mm between the two points marked previously)

NOTE
The front holes should be lined up with the original threaded holes (ref. " ***b*** " and**"*b1** "). Use button head screws to fit the brackets to the load area.

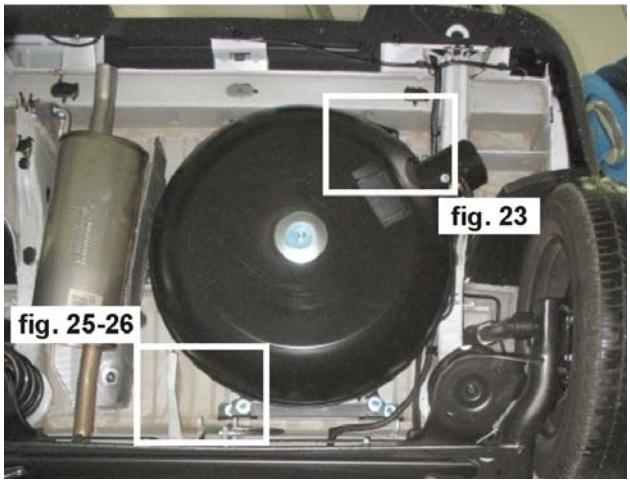


Fig.22

The holes can also be drilled from under the load area using the tank fitting brackets as a template.

(view from under the vehicle)

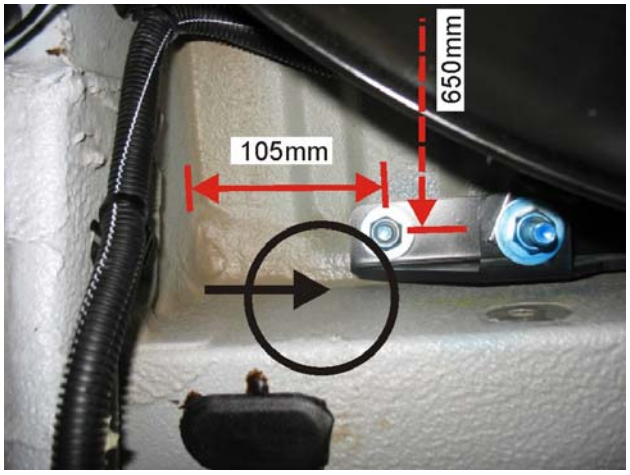
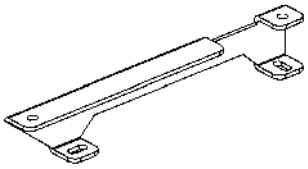


Fig.23

Rear
Position the bracket "**D6**" against the chassis cross member.


D6

Position the hole of bracket **D6 105 mm** from the right chassis strut.
Drill a second Ø 12mm hole in the load area to match the hole on the other side of the bracket (see next photo).

(view from under the vehicle)

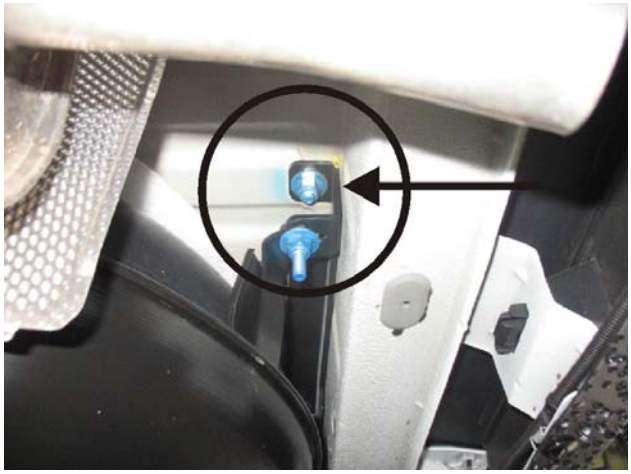


Fig.24

NOTE *On the FURGOVAN version, this bracket is positioned rotated horizontally, over on itself.*

(view from under the vehicle)

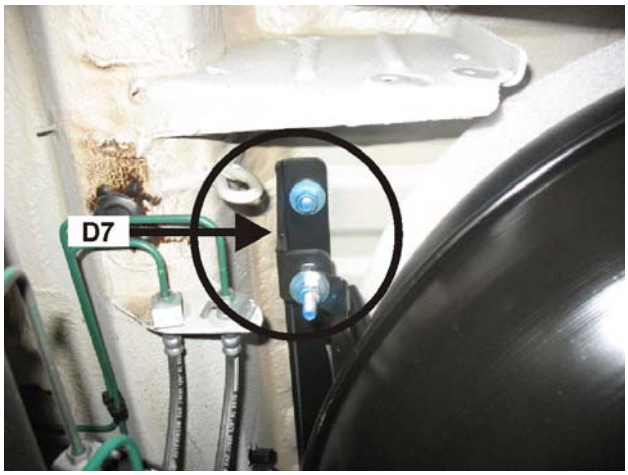
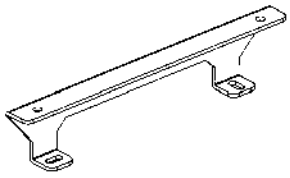


Fig.25

Front

Position the bracket "**D7**" as shown in the photo near the chassis central cross member.



D7

NOTE *On the FURGOVAN version, this bracket is positioned rotated horizontally, over on itself.*

(view from under the vehicle)

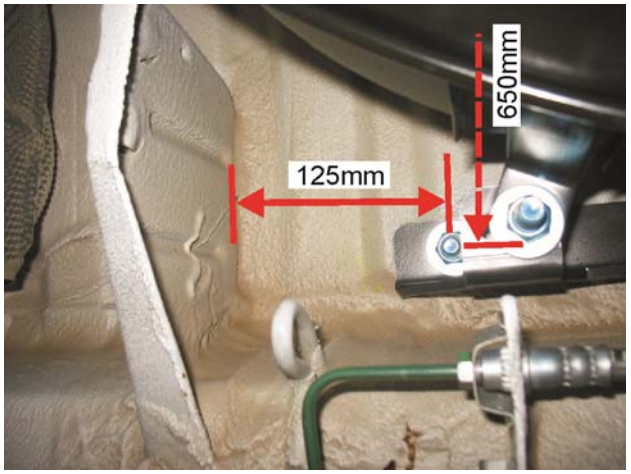


Fig.26

Drill the hole in the left side at a distance of:

- 125 mm from the bodywork shown
- 650 mm from the hole for the rear bracket

Drill the hole with a Ø 12mm drill bit.
Protect the bodywork with anti-rust treatment and mount the bracket.

(view from under the vehicle)

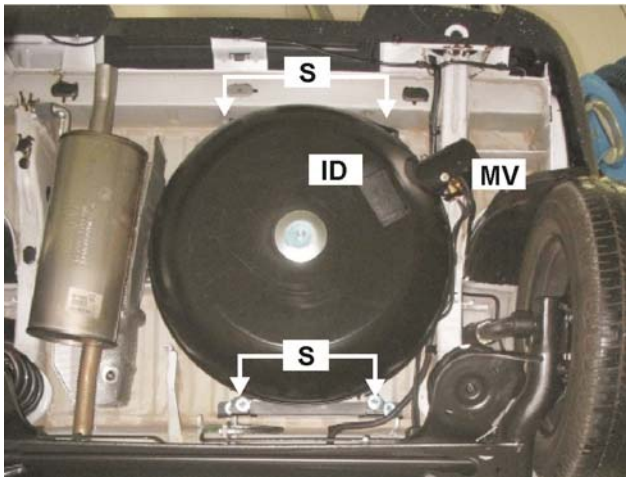


Fig.27

Mount the tank as shown in photo **D8**.
The photo shows the tank after installation.
The multivalve "**MV**" is facing the rear of the passenger side wing.

"**S**" retention strap fixing points.
ID" tank identification plate

(view from under the vehicle)

V) FUEL FILLER VALVE - FURGOVAN version

Fig.28

The refilling valve is positioned under the petrol filler flap.
Using the refilling valve rubber seal as a template, drill a central hole of Ø 22mm and 2 x Ø 4mm holes for fitting.
Fix the rubber cord of the cap to one of the refilling valve fixing screws.

V) FUEL FILLER VALVE - PICK-UP version

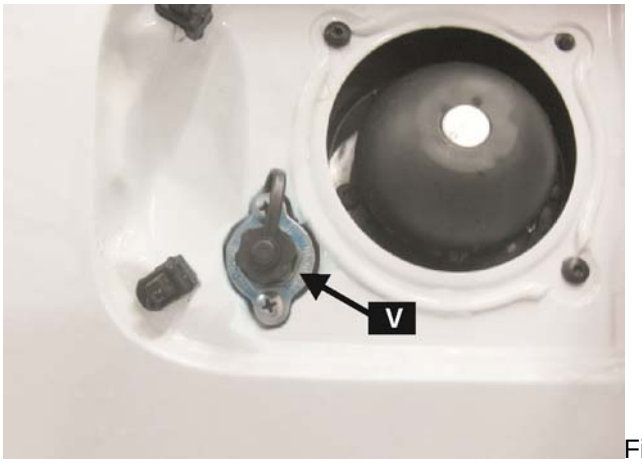
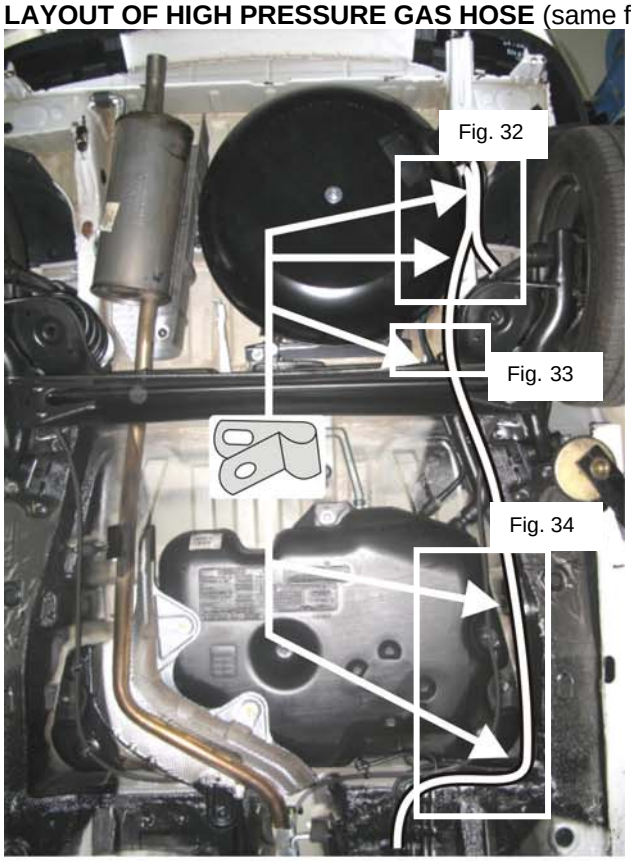


Fig.29

The refilling valve is positioned under the petrol filler flap.
Using the refilling valve rubber seal as a template, drill a central hole of Ø 22mm and 2 x Ø 4mm holes for fitting.
Fix the rubber cord of the cap to one of the refilling valve fixing screws.

LAYOUT OF HIGH PRESSURE GAS HOSE (same for both versions)



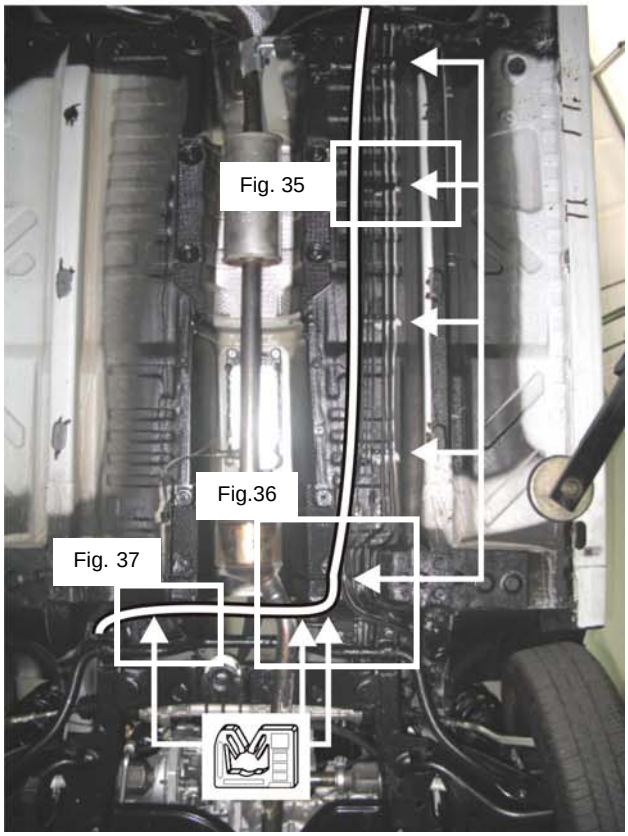


Fig.30

The wiring to the multivalve should be protected along its full length with a corrugated hose and should be clipped to the gas pipe at regular intervals with the clips supplied (see photo below).

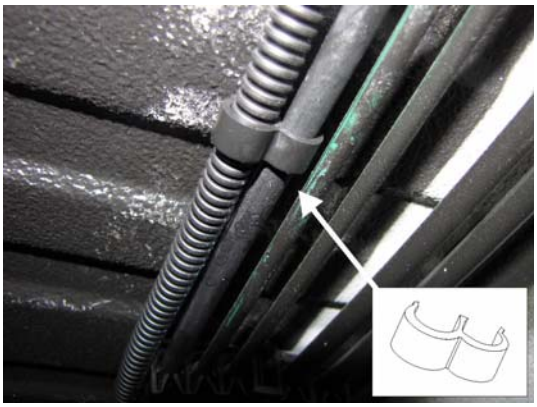


Fig.31

Layout of Ø8mm high pressure pipe

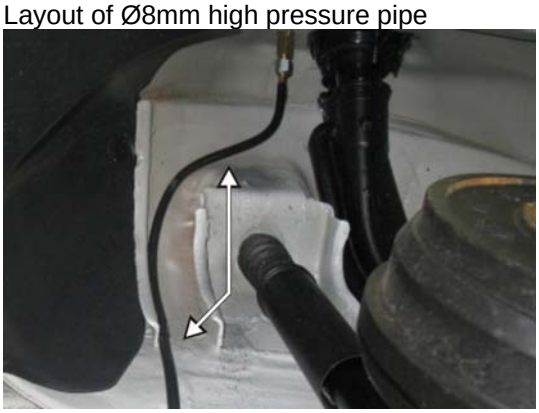


Fig.32a

Fig.32b

Ø6mm hose clipped to chassis on gas tank side

Fig.32c

How high pressure hose clipped with metal fitting to chassis cross member on shock absorber side.

Fig.33

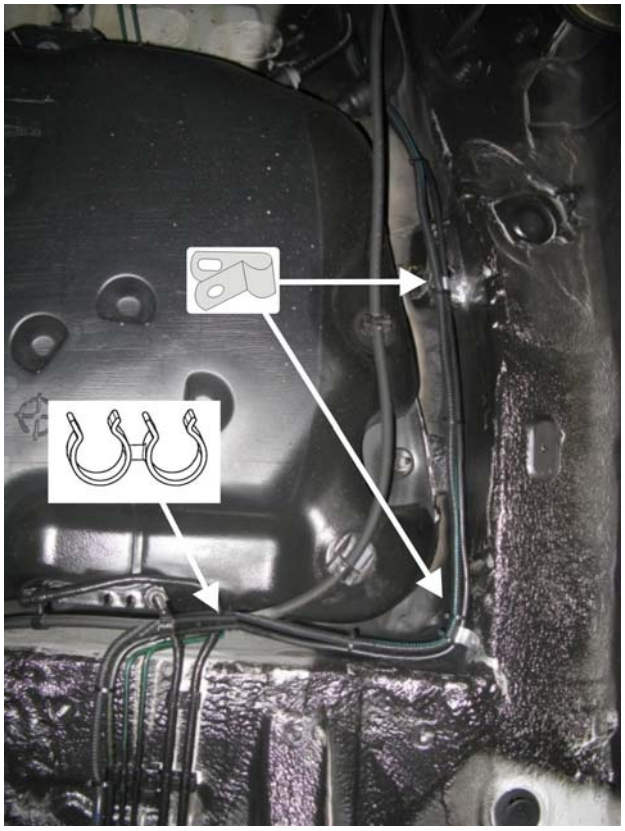


Fig.34

Close-up of high pressure hose clipped with 2 metal fittings on tank side.

In front of the tank. the gas hose passes "under" the handbrake cable and it is clipped to the tank with the spacer shown.

Do not allow the gas hose to come into contact with original vehicle pipe work.

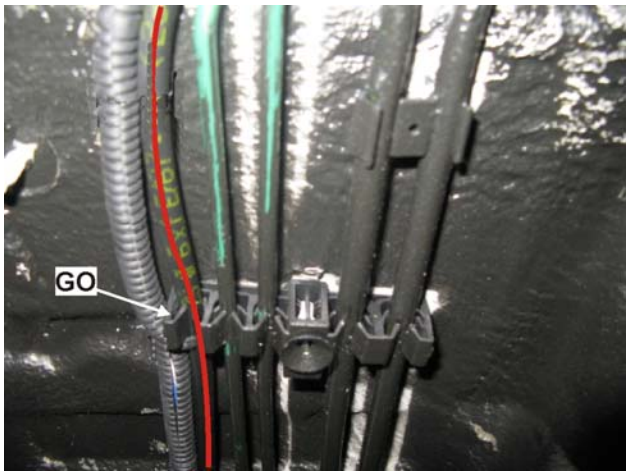


Fig.35

Close-up of high pressure hose underneath the vehicle.
The gas hose (marked with a red line) is to be fitted to through the vacant space in the original pipe gland "**GO**".

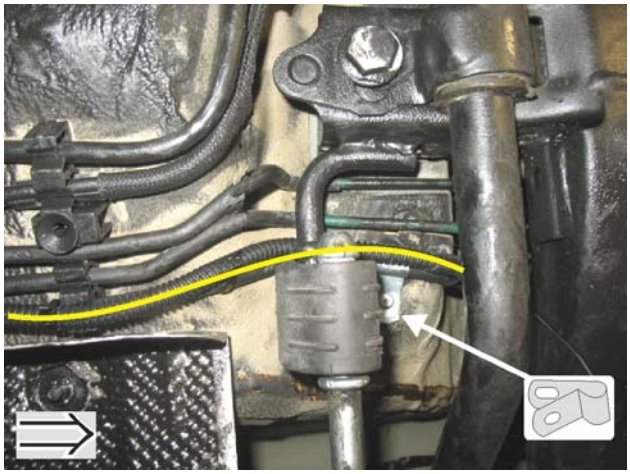


Fig.36a

Close-up of the route taken by the high pressure hose before it enters the engine compartment.
The gas hose (marked with a yellow line) must pass "above" the exhaust clamp and "above" the anti-roll bar.

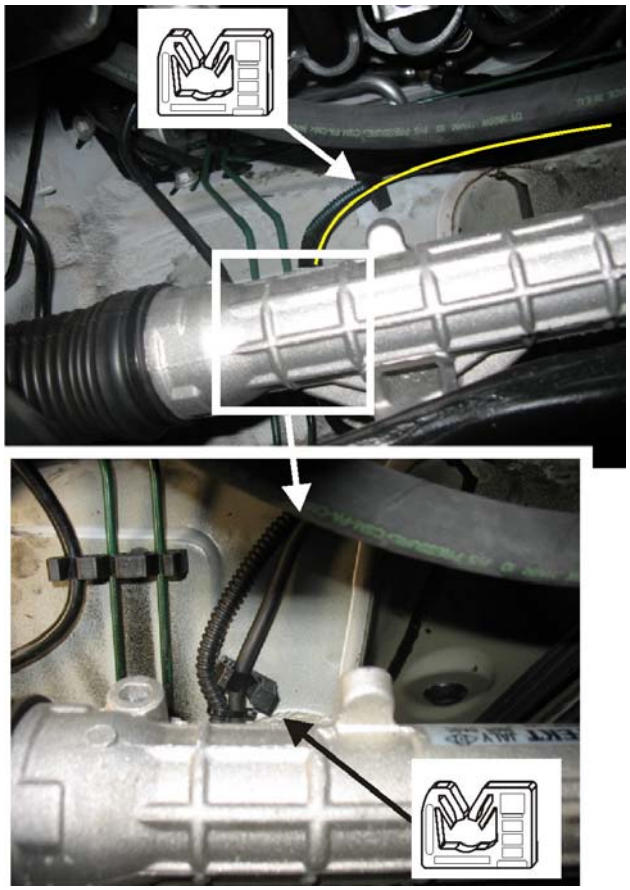


Fig.36b

Close-up of the Ø 6mm high pressure hose fitted to the passenger side of the bulkhead.
Fit the hose clips to both the original tuckers as shown in the photo and clip the gas hose (marked in yellow) so that it faces the driver's side.

Attention
- Do not allow the gas hose to come into contact with the brake pipes.
- clip the multivalve wiring to the gas hose.

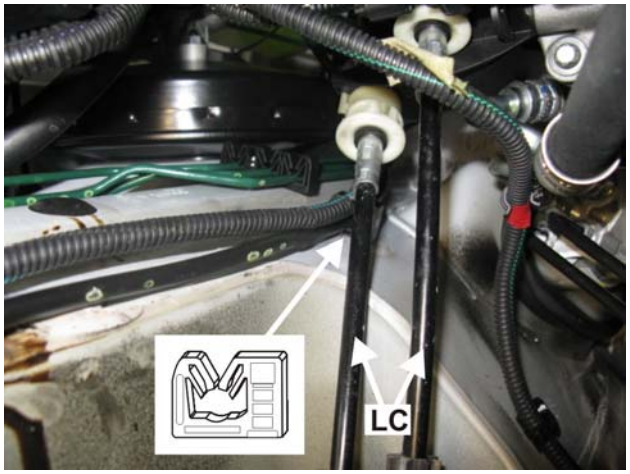


Fig.37

Close-up of the Ø 6mm high pressure hose fitted to the driver's side of the bulkhead.
The gas hose must pass behind the gear change linkage hoses "**LC**".
Fit the hoses shown in the photo to the original tuckers (not visible) and clip the gas hose in place.

Attention
Make sure that the gas hose and multivalve wiring are not long enough to come into contact with the gear change linkage hoses.

GUARDS AND FIXTURES
Make sure that vibration from the engine cannot cause damage or cuts to cables or hoses.
Clip high-pressure hoses at regular intervals, especially at critical points.
Protect the wiring loom with suitably sized corrugated hose when it is next to points of contact with fixed parts of the vehicle.

WIRING LOOM LAYOUT

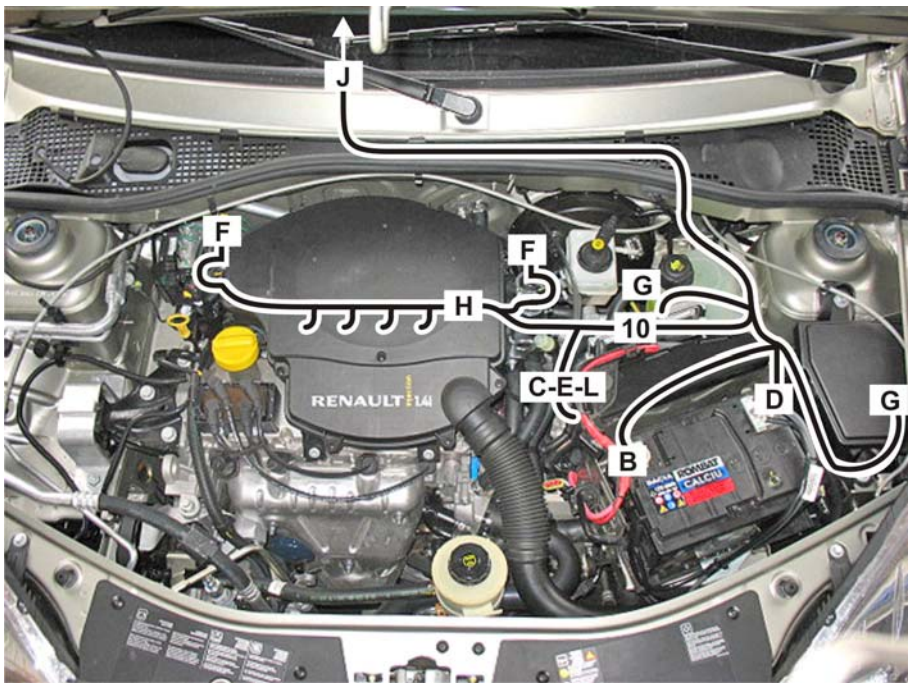


Fig.38

B- D
Power supplies
C
Lambda probe
E
Engine RPM signal
F
Gas injectors supply
G
Reducer /radiator temperature sensor
H
Petrol injector cut-off
J
Switch
L
MAP Sensor

ELECTRICAL CONNECTIONS

Power supply - Positive

Fig.39

Power supply - Negative

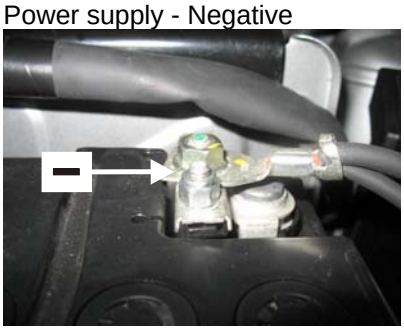


Fig.40

Temperature sensor

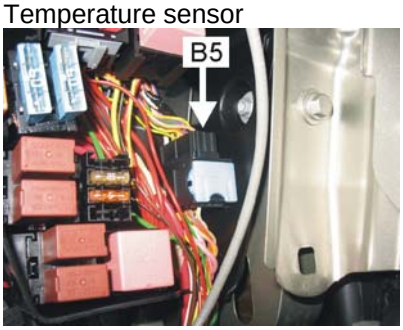


Fig.41

Sensor errors Lambda probe Engine RPM signal

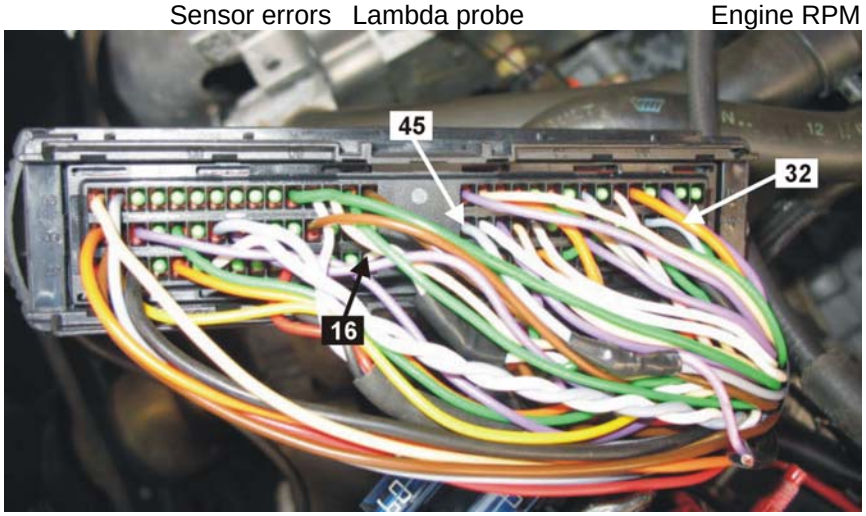


Fig.42

ref.	**OMEGAS wiring**	**Vehicle wiring**
C	Lambda probe PURPLE wire GREY wire	Make the connections on the 90-way BLACK petrol ECU connector - connect the GREY wire to pin 45 - leave free, isolate
E	Antenna Wire: BROWN	Make the connections on the 90-way BLACK petrol ECU connector - connect the GREEN wire to pin 32
L	MAP Sensor RED/YELLOW wire	Make the connections on the 90-way BLACK petrol ECU connector - connect the WHITE wire to pin 16
B D	Power supply (*) Wires RED/BLACK 2 x BLACK wires	 - connect to the POSITIVE battery terminal - connect to the NEGATIVE terminal on the bodywork
G	Engine water temperature sensor Wire: ORANGE	Make the connections on the 32-way BLACK connector in the fuse box on driver's side front wing. - connect the WHITE wire to pin B5

NOTE (*) The fuse box must be placed in a visible and easily accessible location.
Maximum fuse size - 20A

PRE-CABLED HARNESS

G	Pressure regulator 2-way connector Wire: WHITE / BLUE Wire: WHITE / BLACK Wire: WHITE Wire BLACK	 - connect to the 2-way connector for controlling the gas solenoid valve (p1 blue – p2 black) - connect to the positive wire coming from the tank multivalve solenoid valve - connect to the negative wire coming from the tank multivalve solenoid valve - connect to the WHITE wire of the multivalve indicator - connect to the BLACK wire of the multivalve indicator
H	Locked switch +15 Wire RED/WHITE	The wire is already connected to the petrol injector cut-off wiring.
H	Petrol injector cut-off wiring	Connect wiring **A** to the fuel injector of cylinder **1** and follow the sequence for the remaining injectors. (p1 blue - p2 red - p3 green - p4 yellow – p5 white/red p6 blue/black - p7 red/black – p8 green/black – p9 yellow/black)
F	GAS injector rail Rail without sensor A B Rail with sensor A B 4-way connector	wiring . injector rail / Engine cylinder A Cylinder 1 B Cylinder 2 C Cylinder 3 D Cylinder 4 connect the 4-way connector to the temperature/gas pressure sensor (p1 black - p2 orange/black – p3 white/red – p4 blue/black)
J	Switch 4-way connector	Connect the protected connector between the heat-shrinking pipe inside the passenger compartment to the switch - (p1 red - p2 black – p3 blue – p4 brown)
A	Programming 4-way connector	Leave this connector free to connect with the PC interface cable - (p1 black- p2 pink/black – p3 pink – p4 red/white)