# INSTALLATION MANUAL

## F O R D KA

RHD

1.3 i

GSI®

AUTOGAS SYSTEEM

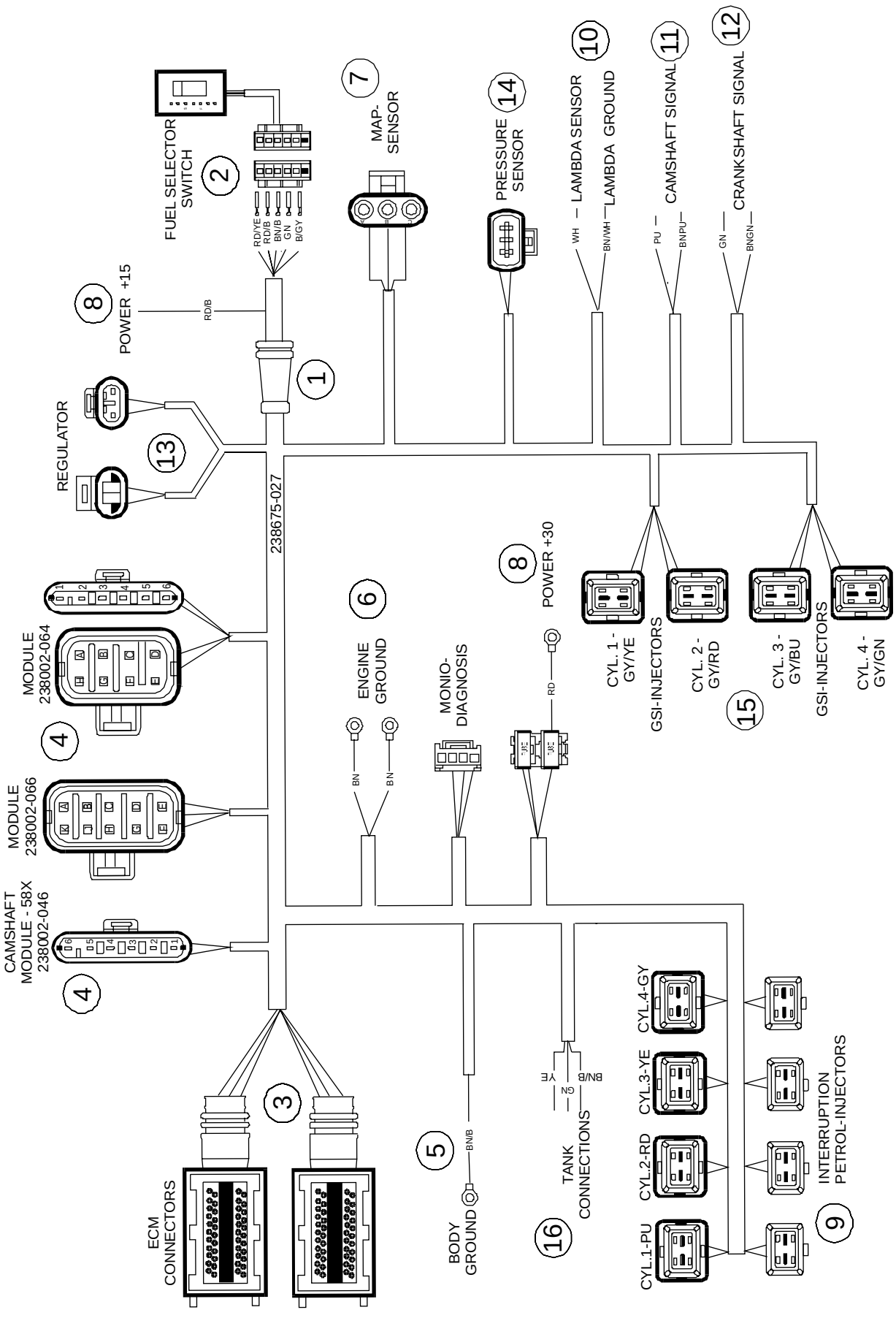
265000-771
15-04-03

necam gassystemen

# INSTALLATION INSTRUCTIONS
# ELECTRICAL CONNECTIONS

Brand :Ford - RHD | Instr. no : 265000-771

Type : KA 1.3i | Page no : 1/8 | Engine set no : 260100-612



# INSTALLATION INSTRUCTIONS
# INJECTOR ASSEMBLY

| | | | | |
|---|---|---|---|---|
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- Remove the air intake hose with air filter, the complete throttle body housing with accessories and the vacuum hoses connected to the inlet manifold.

- Release the inlet manifold and remove the petrol fuel rail. Ensure that the screw heads are not damaged!

- Mount the drilling jig (241505-303) on the inlet manifold mounting flange usung 2 M8 bolts. Drill 4 holes Ø 8 mm. See fig.1. Use a drilling bush in the jig when drilling.

- Mount the injector holders in the hex adapters, then fit this assembly into the inlet manifold using the brass cup and O-rings. See fig 2. Use sealing tape or liquid on both joints. N.B. The injector mounting adapter screw can be fitted using a cable tie threaded through the manifold drilling. See fig 3. Clean the manifold after fitting all the injector adapters.

- Injection hose length: cyl.1- 40 cm, cyl. 2/3- 35cm, cyl. 4-25 cm. Attach the hoses to the injectors.

- Mount the injectors with hoses into the appropriate injector holders, using a lubricant to prevent the O-rings being damaged. Route the injector hoses forward along the inlet pipes and fasten with cable ties. See fig.4.

- Refit the inlet manifold. Use a new manifold gasket if necessary.

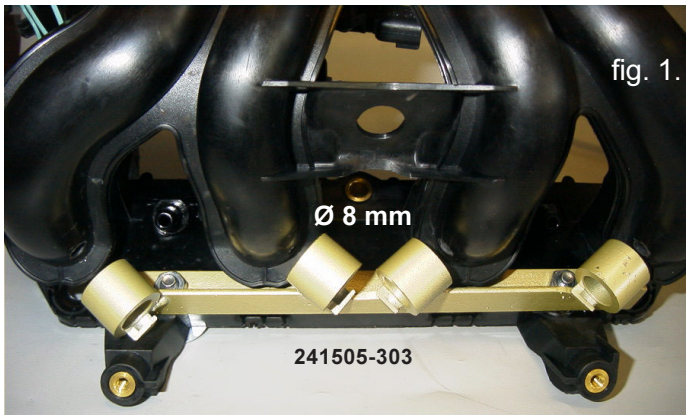


fig. 1.


fig. 2.


fig. 3.

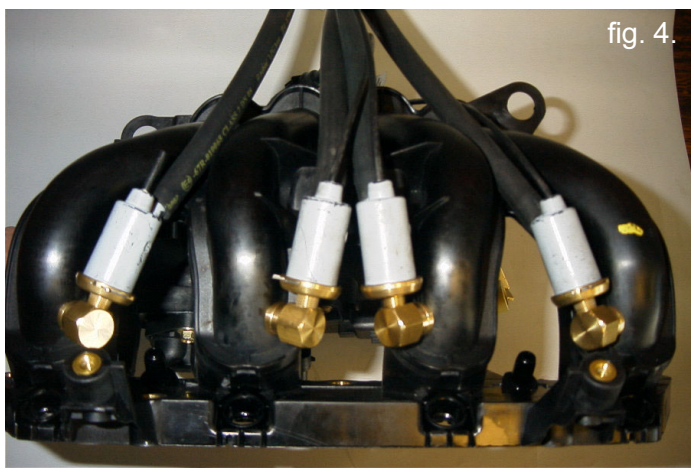


fig. 4.

- Vaporiser/pressure regulator. Remove the air-filter from the gearbox, and use bracket (244304-109) mounted against the rear of the battery tray when refitting. Attach the Vapouriser mounting bracket (244305-500) to the inner left hand wing using two M6 bolts and lock washers. See fig 6.

- Mount the coolant elbows and the solenoid valve (with 90 degree elbow) into the vaporiser, taking care to align the coolant elbows with coolant hose. See fig 6. A suitable sealant such as Omnifit H50 should be used on the elbows. The vaporiser can now be fitted to the mounting bracket (244305-485) which should then be fixed to the bracket (244305-500) already attached to the inner wing

- Vacuum connection. Drill 2 Ø7mm holes in the flange of the throttle body housing and tap with M8x1. See fig 7. Fit the vacuum pipe connectors using a suitable sealant. When the throttle body is refitted the vacuum hoses can be fitted to the vaporiser and the MAP sensor.

- Splitter. Attach the four hoses from the injectors to the splitter. Using the 16mm LPG hose connect the splitter to the vaporiser outlet connection, routing this hose below the brake servo, and securing with cable ties.
See fig 8.

fig. 5.

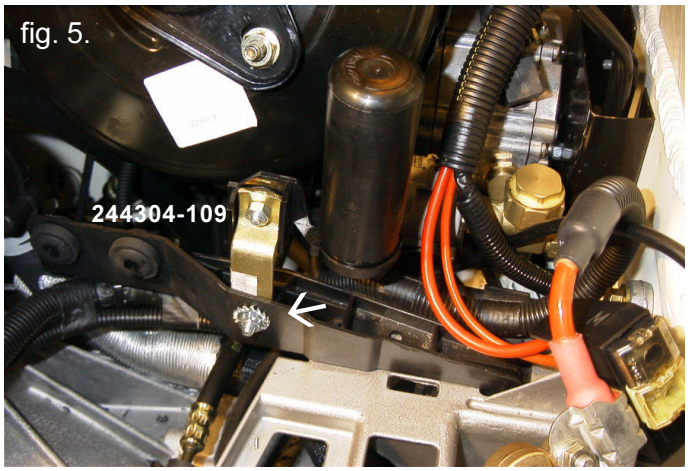



fig. 6.

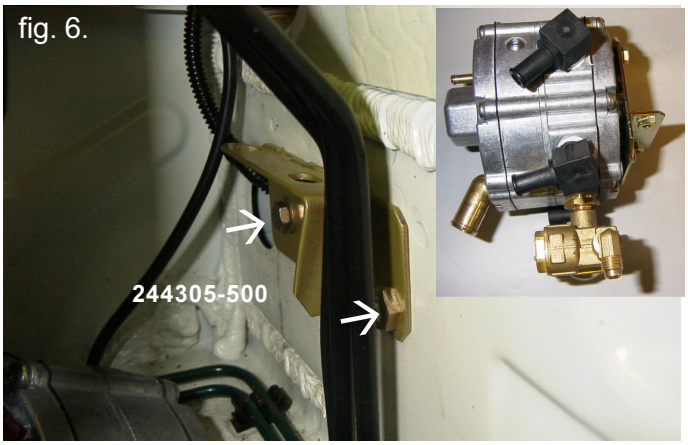



fig. 7.

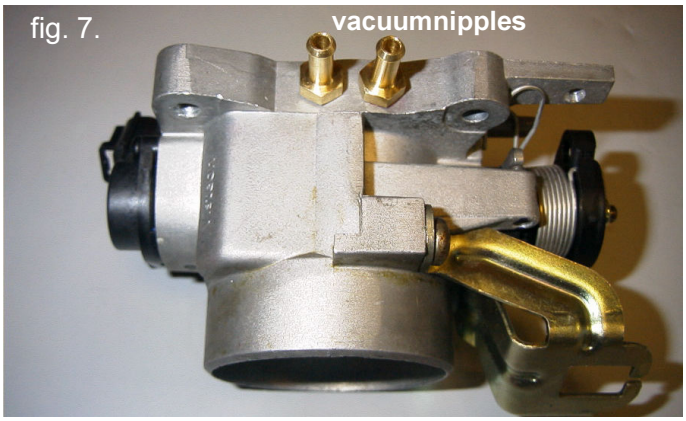
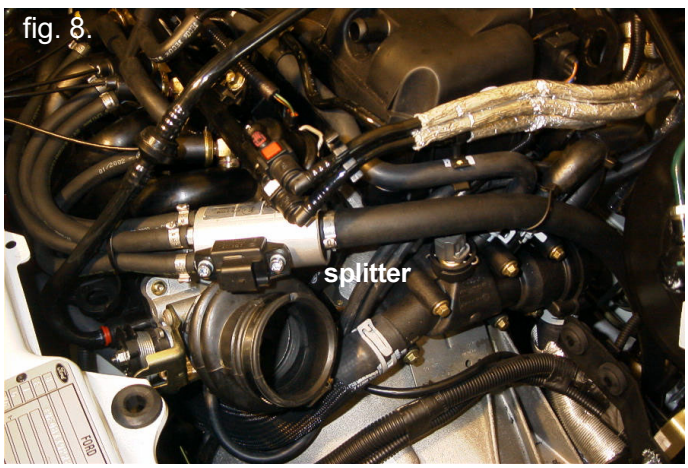



fig. 8.



- MAP sensor. Release the Lambda sensor connector from the bulkhead. Fix it with a cable tie to the cable harness. Mount the MAP sensor using a bracket onto an existing stud on the bulkhead. See fig 9. Connect the vacuum hose from the throttle body to the MAP sensor.

- ECM and modules. Attach the ECM bracket (244304-706) to the right hand side of the bulkhead. Mount the 064 module and the ECM onto the bracket. Mount the support bracket (244304-688) onto the left-hand side of the ECM and attach the 046 and 066 modules See fig. 10.

- Water connections. Interrupt the left hand heater hose at the connection nipple. Mount the by-pass nipple (16-10-10-16). Attach the 10 mm nipples to the regulator's water nipples. See fig.11.

- LPG pipe. Route the LPG pipe from the vaporiser and over the chassis beam and under the floor to the vapour box on LPG tank.

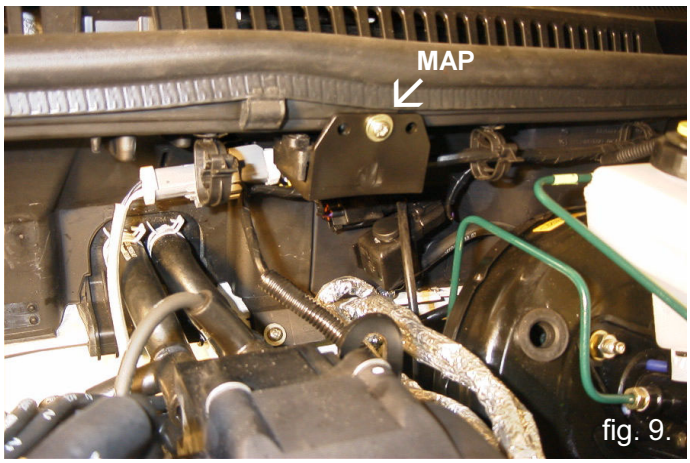


fig. 9.

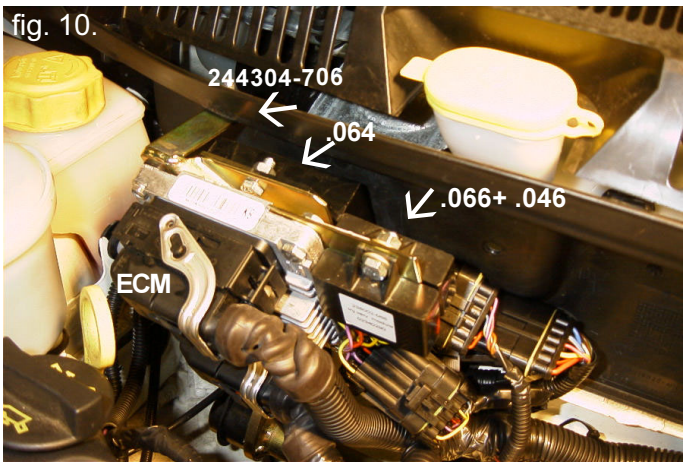


fig. 10.

fig. 11.

1. Wiring Harness bulkhead entry. The switch connector and +15 wire can be fed through the large grommet located behind the left hand spring turret. See fig 12. Make sure the grommet is still watertight after the cables have been inserted.

2. Switch. The fuel selection switch/gauge is mounted on the right-hand side of the dash below the air vent. Make sure that the wires to the switch connector are in the correct position. See fig. 13/14.

3-4.ECM and modules. Connect the plugs to the ECM and modules.

5. Bodywork earth. The brown/black earth wire with cable eye is connected to the earth point above the left-hand headlight.

6. Engine earth. The brown earth wires with cable eyes are connected to the earth point on the rear of the engine next to the oil dipstick.

7. MAP sensor. Connect the green 3-pin connector to the MAP sensor.

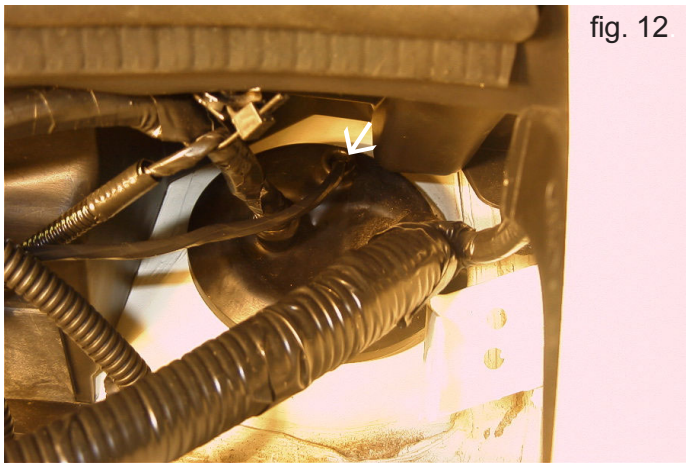


fig. 12

fig. 13.

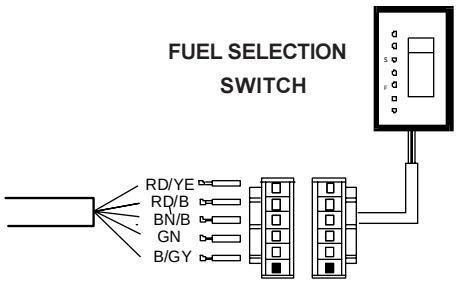



fig. 14.

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8. Power. Connect the power wire (+15) to the underside of the fuse box on the right-hand side of the dashboard. Connect the green/ black wire to the purple wire. See fig.15. Connect the red power wire (+30) to the battery + pin with a cable eye. See fig.16. Place the fuses in the holders (+30=7,5A, +15=3A). Put these together with the Monio connector under the batterycover.

9 Injector interruption. Release the connecters from the petrol injectors. Attach the connectors from the GSI wiring harness to the petrol injectors and the original petrol injector connectors. Secure the injector harness with cable ties.

10. Lambda signal. Connect the signal wires to the Lambda sensor connector located centrally on the bulkhead. See fig 17. The white wire is connected to the black wire and the brown/white wire is connected to the grey wire.

11. Camshaft signal. Connect the signal wires to the camshaft sensor connector located on the end of the valve cover. See fig 18. The purple wire is connected to pos. 1 – purple/ white and the brown/purple wire to pos. 2 – brown/white

12 Crankshaft signal. Connect the signal wires into the harness at the rear of the nearside spring turret. See fig 19. The green wire is connected to the brown/red and the brown/green to position 1 – white/red.

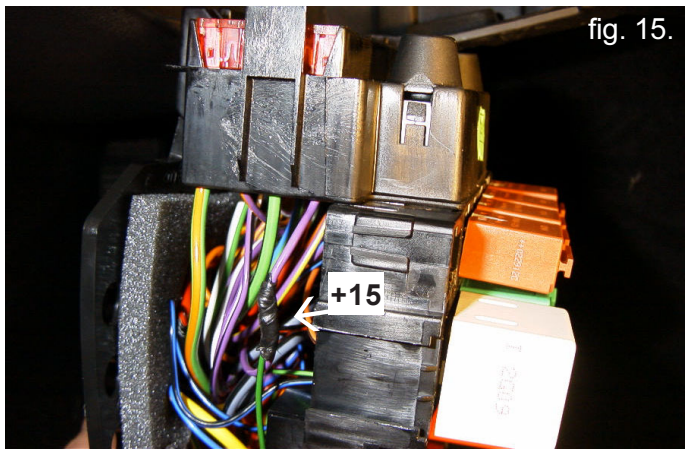

fig. 15.

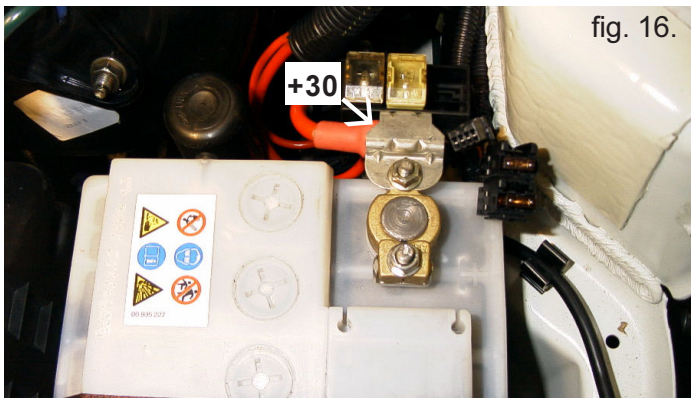

fig. 16.

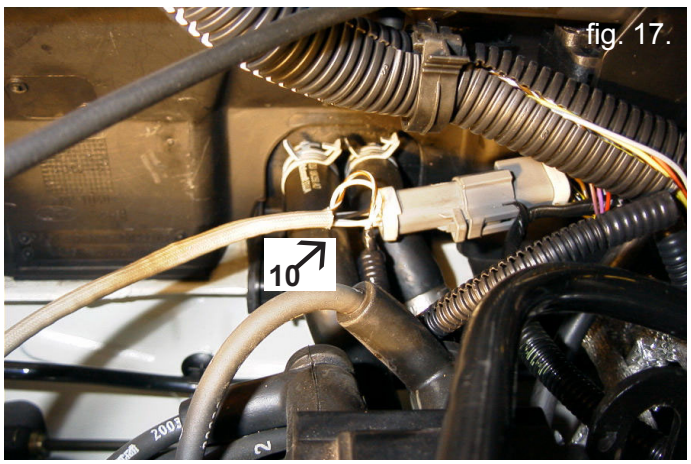

fig. 17.

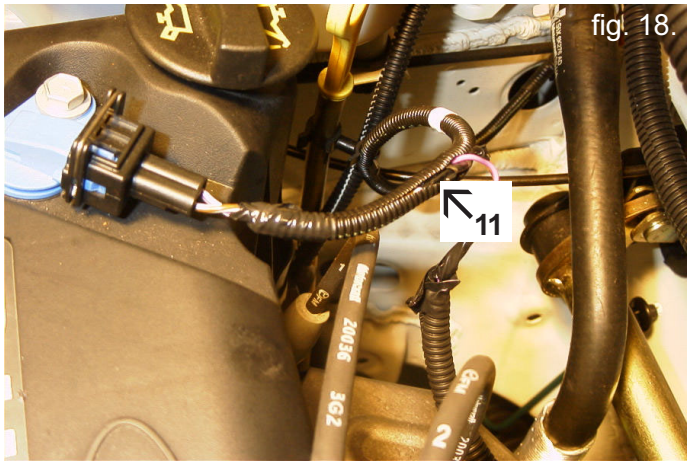

fig. 18.

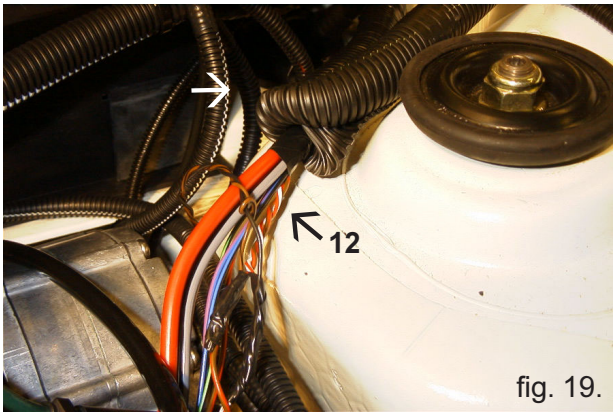

fig. 19.

13. Vapouriser. The 2-pole plug with yellow and brown/black wire is connected to the solenoid valve. The other connector is connected to the temperature sensor.

14. Pressure sensor. The 3-pole plug is connected to the GSI-splitter pressure sensor.

15. GSI-injectors. Place the cable markers – for cyl.1 up to cyl.4 inclusive on the wiring for the GSI-injector concerned. Connect the 4 connectors to the GSI injectors. Ensure that the connectors with the correct wire colours (and numbers) are connected to the designated cylinders. See table in fig. 20.

| wire-colour GSI-injector | | cylinder no. |
|---|---|---|
| 1-grey/yellow | → | cyl. 1 |
| 2-grey red | → | cyl. 2 |
| 3-grey/blue | → | cyl. 3 |
| 4-grey/green | → | cyl. 4 |

fig. 20.

16. Vapour box. Route the 3-core harness with the green, yellow and brown/black wire along with the LPG supply line towards the vapour box. Connect them to the solenoid (yellow), the tank transmitter (green) and ground (brown/black). See fig.21.

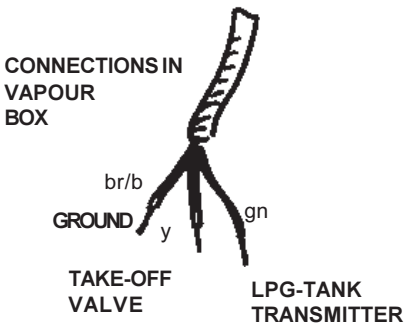


fig. 21.

**Control / adjustment**
1/ When the installation is ready, check the entire LPG installation for leaks!
2/ Adjust the working pressures of the vaporiser/ pressure regulator when the engine is at operating temperature:
**1st stage: 1400 mbar**
**2nd stage: 1000 mbar**

**Important:** point 1 and 2 must always be executed directly after the installation of the LPG installation. This also applies when the car is being run in during the first kilometres on petrol.

# WIRING DIAGRAM

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Type : KA 1.3i | Page no : 8/8 | Engine set no : 260100-612